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Academic teaching, internationalisation, innovation

ABSTRACT:

The project of the new series *Le ragioni di Erasmus* took up a challenge. In its subtitle, *Supporting education in present times: human sciences, internationalisation, networks, innovation*, are the crucial issues of that challenge: on one side, thematic networks and suggestions, thematic interconnections and networks of meanings; on the other side, pedagogical, educational, didactical choices, the idea of metaphorical and actual networks, the idea of living, within universities, a crucial historical moment: the moment of modifying strategies, methodologies, technics, tools of academic teaching, the moment of supporting new research models.

KEYWORDS: academic teaching, interdisciplinary research, pedagogical approach.

Il progetto della nuova collana *Le ragioni di Erasmus* raccoglie una sfida. Nel suo sottotitolo, *Per l'educazione nel presente: le scienze umane, l'internazionalizzazione, le reti, l'innovazione*, sono presenti i motivi della sfida: le reti tematiche, le interconnessioni tematiche, le reti di significati si intrecciano con ragioni pedagogiche, educative, didattiche, con l'idea della rete come metafora e come realtà, con l'idea che questo sia, per le università, un momento storico cruciale: il momento di modificare strategie, metodi, tecniche, strumenti dell'insegnamento accademico, il momento di promuovere nuovi modelli di ricerca.

PAROLE CHIAVE: insegnamento accademico, ricerca interdisciplinare, approccio pedagogico.

1. *An introduction. Didactics and the impact of changes on learning*

The idea of a new series – *Le ragioni di Erasmus. Supporting education in present times: human sciences, internationalisation, networks, innovation* – was fostered by the international experiences of a very wide network of European academics. The meetings, the Erasmus+ mobility, the common research projects, the congresses / conferences /

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symposia, the deep and significant discussions were their implemented core activities. Academic teachings, university students' training needs, the quality of delivered subjects, the updated contents of delivered curricula, the interactions with the labour markets were the core topics. The two parts of this paper summarize the reasons why a new series was projected / designed, the reasons why those activities were implemented, the reasons why those topics were discussed. For the sake of synthesis, the focus of both parts is on a specific issue: the analysis of the impact of present changes asks for modifying academic teaching and support to research. The first part answers to the question «Why and for whom do we have to modify our teaching styles?», the latter is my proposed answer to the question «How could we do it?». But both parts state that the question «What do we have to do, if we want to modify our teaching style?» can have a first, unique answer: if the definition of a technical set of tools is designed or expected to be designed, it is better to plan for a different profession; academic teaching is now much more than showing technical competences and having scientific knowledge.

In the last decade several scientific fields have been discussing about the statute of their reference subjects; it is, perhaps, a consequence produced by interdisciplinary approaches, or, perhaps, by the need of adopting interdisciplinary approaches, or, perhaps, by the need of better defining additional designs / directions of research. Here, we do not need to deepen or justify the reasons of this debate, but stress that it impacts on academics' didactics and on the assessment of their didactics. My opinion is that a debate on scientific areas' statutes cannot give any significant suggestion; actually, it focuses its attention on teaching styles and on the central position of academics in all educational and training settings. Here, the aim is of defining the totally different reasons why didactics need to re-discover, renew, innovate. In general, my position is: as universities do not exist because of the existence of academics but do exist because of the existence of students, we must state that dealing with learning styles is a priority; and that teaching styles must be re-discovered, renewed and innovated as they depend on the present characteristics of learning styles. My position is supported by more specific and detailed reasons, of course; some of them are complex, phenomenic reasons (De Kerckhove, 1993; Pinto Minerva & Gallelli, 2004; Baldi, 2003; Anolli, 2006; Iori, 2006; Piccione, 2012:

23-141), some of them are concrete reasons (Brandimonte, 2002, 2004; Bruner, 2000; Rifkin, 2000; Piccione, 2013: 75-116); in the next pages, they will be synthesised.

First: the way we have been studying and learning, up to a dozen years ago, and the way, at present, our university students study and learn, are so distant that never before, in human history, the risk was so strong of reducing both the meaning of academic studies and the opportunities of improving research. This does not mean that the quality of academic teaching and researching is going to be lower and lower, but that the impact of academic studies and research can be lower and lower (Laporta, 1977; Capano & Meloni 2013; EMN, 2013). In short, in concrete, some examples. First: we have been taught that the manipulation of knowledge is the strategy that can produce significant effects on the quality of learning. What does it mean? That we were taught a learning style concentrated, at least, on deducing, inducing, making inferences, analysing, synthesizing, representing, solving problems, using logical and thematic connections, etc. Second: we have been explained subjects by the use of sequentiality. What does it mean? That our teachers and profs, wherever and whenever, from primary school to university, explained with sequential procedures all formal contents of subjects. In other words:

- humanities, or, better, the 'historical' subjects, obeyed to a red thread: history, art, literature, philosophy were 'narrated', explained, commented, from ancient times to present ones; and geography was narrated with a lightly different red thread: from all that is 'close to me' to all that is very 'far from me';
- logical-scientific subjects obeyed to a 'technical' red thread: arithmetic, maths, physics, chemistry, ..., were narrated explained, commented, from simple to complex.

At the moment, the above-mentioned cognitive strategies aren't anymore sufficient to learn effectively: in other words, deducing, inducing, making inferences, analysing, synthesizing, representing, solving problems, using logical and thematic connections, sequentiality aren't sufficient, anymore. Following the logical connections which we are used to, with a red thread from wide to small factors: because of social phenomena? Yes. Because of changes in communication and languages? Yes. Because of interdisciplinary approaches? Yes. Because

of changes in learning styles? Yes. Because of present technological advanced tools? Yes.

The list could be far longer, but the listed aspects are representative. Philosophically, we could say that, first of all, the changes in the perception of time and space in terms, respectively, of intensity instead of duration, and orientability instead of distance (Piccione, 2012: 23-34; Elias, 1986; Fraser, 1991; Iori, 2006; Kern, 1995), and, second, the new perception of virtuality as a socio-educational setting (Lévy, 1997; Maldonado, 1994; Piccione, 2013: 61-74) can summarize the changes and explain several significant impacts. Those changes added – to the traditional reference categories of duration, eternity, stability, distance and border – new reference categories, such as, at an individual level, flexibility, interlink-ability, logic and procedural sequentiality, simultaneity, permeability, reliability, dependence, interdependence, reachability, manipulability (Maldonado, 1994, 2005, Galimberti, 1999; Benasayag & Schmit, 2004; Bertolini, 2002); and, at a social level, intensity, simultaneity, orientability, adaptability, mobility, permeability, reliability (Bauman, 2006; Beck, 2000; Lévy, 1997; Pinto Minerva & Gallelli, 2004). In concrete words, all of these change modified the perception and the organization of knowledge, the effectiveness of knowledge and the expectations we have from it, the points of view and the narration of knowledge, the elaboration of knowledge for our own purposes. Therefore: why, in a short time, should we modify our teaching styles? There are, at least, ethical, social, cultural reasons, of course, and they all belong to our profession, or, better, to the way we perceive our profession, to the way we make researches, aim at scientific objectives, expect scientific results; in short, it belongs to our professional projects, therefore to the reasons why we study, plan researches, update our competences, have classes (Massa, 2005; Postman, 1997; Salomone, 1997; Sansone, 2003). If we all do not understand the impact of changes now, changes will introduce themselves, clearer and clearer, in a short time. In other words, the students who, at present, attend secondary schools, could only need a couple of years to become our university students; and those who, at present, attend primary schools, will only need ten years or less to become our university students. They all are the bearers of the impact of changes. Within the above-defined context, the role of the Sciences of Education is extremely important; actually, they are asked

to confirm their interdisciplinary scientific nature; to demonstrate to be able to read present educational problems; to give, again, significant didactical answers to the need of fostering, within all educational settings, interest, curiosity and motivation; to suggest how to avoid the risk of strengthening the perception of knowledge as a set of technical, transmissible notions (Cambi, 2002, 2006; De Kerckhove, 1993).

Our students live, belong to, participate, communicate, interact within traditional educational settings, whose social, communication-al, linguistic, formal, non-formal, informal messages are coherent with academics' competences and knowledge, models and lifestyles. And, at the moment, generally speaking, academics' teaching styles are either widely traditional or semi-traditional. The former model is rather transmissive, managed according to the following procedure: as adults and experts think they are the total owner of knowledge and experience, day by day, they speak, ask full attention, have their classes and courses, deliver knowledge, make questions, evaluate. The latter is the model of those academics who think that the use of laboratories / seminars / advanced technologies / facebook / whatsapp, the reports on some research results, the description of the competences required by the labour market are what they are expected to do, to be and become innovative. Within all the other educational settings (parallel schools, according to the pedagogical lexicon), our students receive widely similar messages: academics' wisdom, expertise and experience are undeniable, sometimes models and lifestyles are unjustifiable but their roles, wisdom, expertise, competences and experience are undeniable.

Second: now, two short considerations more profound and meaningful, on what is labelled 'transmission of knowledge'; I already came on them more than once (Piccione, 2011, for example), and I'll be back on them again. The former: as never before in human history, younger generations, at present, have a kind of knowledge, the technological one, about which the adult generations are not unique and total holders. Adult generations don't know and can't transfer its contents, instructions for use, usability and re-usability, meanings, cognitive strategies involved in managing it, communicational codes and channels, specific languages. The latter: younger generations, at present, have at their disposal a kind of knowledge, the technological one, which gives an additional instrumental potentiality. Its use allows, as never before in human history, the pure access to any other knowledge

without the necessary physical presence of adult generations. It doesn't matter if it is a deeper or a more superficial knowledge, as its quality depends on the user's approach and on the motivation to learn. By these two facts, several extremely significant consequences have been produced: the perceived usability of knowledge, the perception of its updatability, the way of memorizing, processing, giving a meaning, the way cognitive strategies are used.

What I mean is: educational professions and roles cannot ignore the impact produced by social phenomena and by the pure presence of technological tools that have been modifying our lifestyles and learning styles. They must have a specific competence: reading and understanding why, how, for whom, with whom the perspective of the access to knowledge and of the experimentation of critical thinking are, at present, totally different. In other words: the change of traditional educational settings, of parallel school and of their perception influenced the transformation of the categories of, at least, symmetry, stability, argumentative sequentiality, linearity, causality, predictability. And, again, what I mean is that knowledge cannot be considered a deliverable and transmissible product anymore; that educational roles cannot be considered as technical, anymore. This does not depend on pedagogical reasons; this depends, at least, on a different reason: the human need of perceiving future as a promise and not as a threat (Benasayag & Schmit, 2004: 28-30; Morin, 2001; Castells, 2009).

2. The teaching approach of academics: a case

One of the main problems discussed so far within the above-mentioned European networks of academics was teaching methodology. The distances among their different opinions / positions were very specific: on one side the academics who teach humanities, on the other side all the rest of academics. Those distances were explained by their answers to a unique question: is methodology currently perceived / confused with procedures? Usually, my answer as a pedagogist was positive; and I usually stated that the most significant impact of my answer falls on teaching approaches, therefore, at least, on teaching communication styles, on selected didactical technics / tools, on formative objectives. My position was: methodology is the reason why I decide to use procedures; actually, methodology impacts on:

- the thematic sequence of my lectures;
- the management of my lectures / seminars / laboratories / advanced tools;
- the developed didactical materials;
- the students' group management.

In short: approaches define methodologies; and methodologies suggest how to design procedures; procedures make us select technics and tools; and all of them impact on the quality of teaching. The debate was very intense over the months of the implementation of a project that I was selected to participate in; and the impact of that debate was extremely clear over the following operational phases.

This part of my paper focuses on that international experience and on the above-mentioned problems. I was selected with some European academics to participate in a European project that was implemented in the three Romanian Universities of Timisoara, Bucharest, Sibiu. The project *Universitaria*² generally aimed at promoting, among Romanian academics, a specific attention to the pedagogical and didactical approach to academic teaching. It is interesting to report a short introduction to it, as my pedagogical proposal in that project is strictly linked to my present pedagogical proposals; of course, collected information and data will be shortly introduced and commented because, though selected to be member of it, I was a guest and the project was thought, designed, implemented by someone else.

I was given the task of directing and managing the activities of a small group of academics of the Metropolitan University of London; their support and competences were so high that my job could be implemented with extremely significant results. We have been working for one year to design, develop, produce, deliver materials in the area of 'Student group management'. In short: 'our students', the involved Romanian academics, beyond their specific scientific and disciplinary fields, in the following months, have been attending face-to-face and online classes, were provided with four workbooks, were asked to give feedbacks and undertaking written / critical tasks on the following subjects:

²The project, supported by the European Social Fund, Sectoral Operational Programme, Humann Resources Development 2007-2013, Priority Axis 1, Education and training in support for growth and development of knowledge based society; its name and reference number are *Universitaria*, School of higher education teaching and advanced reasearch, POSDRU/157/ 1.3/S/135590.

A. Student group management:

- managing the learning environment through a student-centred approach;
- effective interaction with different groups of students;
- adapting teaching styles to different learning styles of students;
- prevention and/or management of educational conflict that may occur in groups of students.

B. Modern methods of teaching lectures and seminar activities:

- assessing and selecting different teaching methods within the course and seminar activities that promote active learning of students;
- selecting and applying the effective assessment methods to monitor and evaluate students' learning;
- selecting and using different teaching methods based on objectives, taught contents and characteristics of groups of students;
- using of ICT and software in teaching activities with the aim of fostering students' active and conscious learning.

C. Developing specific didactical materials for university education:

- developing learning materials specific to higher education in order to support students in achieving their learning goals;
- selecting and using instructional technologies to facilitate students' learning processes;
- developing evaluation tools to enable the effective assessment of students' achievement and provide a formative feedback;
- critical analysis on the development and use of didactical resources specific to higher education in terms of teaching specific educational theories and their own experience.

D. Curriculum design process of university education:

- designing long, medium and short term of the academic disciplines/subjects, using the theoretical models provided by various models of curriculum development and designing models of instruction;
- designing instructional activities using instructional models;
- redesigning teaching activities according to the connections between instructional objectives, concrete results of the assessment

and student needs;

- critical reflection on designed activities from the perspective of curriculum development models, instructional designed models and experience.

In the week of face-to-face classes, 156 professors and a dozen tutors were distributed over 6 groups; additional colleagues have been attending an online class planned in the following weeks. The immediate feedback was actually significant, as, at the end of both F2F / online classes, the debates were lively and deep. 95% of academics demonstrated to be interested in the pedagogical and didactical approaches, agreed with the pedagogical reading of the reasons for renewing academic teaching. 5% was rather sceptical: professors' scepticism was due to their opinion about one of the already commented topic of 'transmission of knowledge', namely the 'transmission of technical knowledge and of notions'. All of them demonstrated a great availability in participating in the course: actually, it cannot be forgotten that they, as academics coming from different faculties and departments, were asked to listen and interact with a university professor coming from a different country and with a kind of specialisation concretely distant from theirs. All the tasks that were uploaded by the Romanian academics onto the project platform have witnessed a substantial lower number of sceptical. At the end of August 2015, 111 tasks were sent to me and I had the opportunity of reading interesting comments, besides observing a significant quantitative convergence in some of the answers.

The tasks were focused on three topics, commented with short preliminary key-sentences before the specific questions. The topics and preliminary sentences are the following:

A. Managing students' groups:

- Managing a group always asks for different responsible approaches and activities; managing students' groups asks for additional objectives and behaviours.
- Managing a group asks managers to know all the members of a working group, all their characteristics, their weaknesses and their strengths; managing students' groups asks the same.
- Managing students' groups asks professors to be aware of the fact

that their scientific competences and knowledge, their research and papers are not sufficient to be effective, efficient academics.

B. Setting a convincing and significant didactical setting:

- Teaching means commenting and explaining contents because students need to know, need to use their knowledge, need to know what, how, why, when, for whom, with whom.
- The main risk for teaching is technicalisation and standardisation; even practice depends on thinking. Without thinking, without comparing, without linking, practice and practical competences are technical tools. An example: students can perfectly know a mother tongue and a foreign language, but if they do not have ideas, if they do not think, if they do not know what to say, their linguistic competences will remain useless.

C. Self-assessment:

- You surely have been preparing slides for your classes. Select one of the files you usually adopt in your classes, whose contents are basic notions, and read it.

My three objectives were to foster 1) a perception of students in terms of individuals, groups and generations, 2) a perception of the risks of technicalisation and of the traditional model of transmission of knowledge; 3) the perception of the importance of self-assessment.

2.1. *Reading the collected data*

The answers of all the professors were significant, deep; all of them took care of lexical choices, demonstrated a great attention to details, used a compared analysis of their experiences as academics and as 'students', commented after a deep consideration of the real aim of questions, have been repeatedly asking a feedback.

Some of the questions were always or quite always answered in the same way. It cannot be denied that some of the answers – and their comparably high number – are rather unsatisfying or unexpected. The first key-sentences stressed some of the characteristics that, I think, a professor who manages one or different groups of students should have. I mean: sense of responsibility in selecting approaches and

activities, perception of reality in a classroom where students are not the same as five / ten / fifteen / twenty years ago; perception of the existence of an ethical level in all teaching professions.

At the core of the first group of six questions there were, directly and indirectly, several problems: the clear perception of the existence of teaching models and of the role of all the teaching responsibilities; the sense of knowledge as something that must be transmitted just like a box that must be given to someone who must accept it without knowing what to do with it; the perception of efficiency and efficacy in teaching professions; the meaning of research and academic availability to share objectives and clearly communicate the investigated issues. The idea of research was indirectly mentioned from a social point of view: the perception of a group, the management of a group, the attention in the management of all group members' competences and roles.

Table 1 – *Managing students' groups*

Questions	I agree	I disagree	Total
My scientific knowledge and subject do not fit key sentences	16	95	111
My scientific, technical, practical knowledge can only be transmitted to students	1	110	111
My research only focuses on concrete solutions, I cannot be asked to explain how my thinking has been producing them	2	109	111
Academics must find time and opportunities to observe their students and know their learning styles	109	2	111
Without explaining and thinking, no one can teach effectively and efficiently, no one can manage students' groups effectively and efficiently	111	0	111
Without understanding and thinking, no one can learn effectively and efficiently, no one can be member of a group	107	4	111
	346	320	666

The kind of quantitative and qualitative information given by the first group of answers is interesting: over 111 academics, only 1 or 2 or 4 disagree with the idea that knowledge can be transmitted, even in the case of technical and practical knowledge; in other words, even in the case of professors of the Faculties of Arts and Design, of Chemistry and Biology, Geography, Medicine, of Law and Administrative Sciences, of Economy

and Business Administration, Physical Education and Sport, of Physics, Mathematics and Informatics state that they have been teaching with different styles according to generations of students. Actually, the distances between the humanities and the other sciences is visible in the first and second answer. 86% of professors states their subject does not fit the idea of knowing and managing the learning processes of students. Their following comments translated the sense of their answers: the traditional teaching of their scientific areas, some decades ago, was purely transmissive; in the past 15 years at least, they perceived that the impact of a purely transmissive model did not allow reaching significant didactical objectives and that the impact on students' learning was lighter than in the previous years. They all refer about the need of modifying their communicational and lexical styles, their teaching tools and techniques. 2 professors of the remaining 14% still refer to the impossibility of managing a group of students and state: «I have classes in the same way my professors had classes. Their teaching was efficient and effective, mine must be; if it is not, it depends on students». The distance between the two groups of academics cannot be uniquely explained by their being psychologists or dentists; what I perceived in the face-to-face class is just a reduced ethic availability to change. It is not, of course, a minor fact, but the presence of 2 'conservatives' over 111 can be considered an acceptable number.

The [second table](#) of data and information is even more interesting. Its issues could be referred to pedagogical and didactical approaches. But, actually, the real concrete issues are somewhere else: the availability in considering pedagogy and didactics as independent transversal sciences; the risk of technicalisation; learning always needs thinking, commenting, interpreting, comparing, even when notions are delivered.

Table 2 – *Setting a didactical setting*

Questions	I agree	I disagree	Total
Didactics is a science without technical solutions; all academics must have their own approaches to didactics	53	58	111
Didactics is a strategy that needs to be updated, year by year	106	5	111
To the role of university professors belongs the duty of fostering thinking	111	0	111
Didactics, at university, cannot ignore thinking and explaining reasons; actually, no subjects can ignore thinking and explaining reasons	110	1	111
Concrete and practical solutions are always personal solutions; scientific and in-novative solutions are always the product of individual thinking and groups' thinking	95	16	111
Setting a convincing and significant didactical context means knowing the cultural and linguistic competences of students	109	2	111
	584	82	666

What is concretely discussed, here, is the availability to interact, to know and appropriately use pedagogical and didactical approaches, to update formal/non-formal/informal competences and skills, to attribute to all sciences the characteristics of sciences, to accept the idea that humanities are not less significant than the other sciences. It can be stated that the 111 professors demonstrated a high attention to all the aforementioned crucial issues. It is actually extremely important and significant that all of them state that academics must foster thinking, that 110 state that professors must explain and comment reasons, that for 109 it is necessary to know the cultural and linguistic competences of their students, that for 106 professors pedagogical and didactical competences must be updated. The small numbers of disagreeing professors must be related to the same ones of the previous comments.

Some problems have been emerging even in face-to-face classes when the idea was expressed of considering even practical solutions as the result of thinking. Again, 86% of professors agreed and the rest mentioned the genius of a few scientific fathers that can be neither imitated nor understood (I did not understand the exact logical connection between the aspects, and do not now; but opinions must be accepted as they are). In this case, as well, the weakly resisting positions can be considered potential supporters of the idea. In fact,

the written comments of the tasks have already shown some softer disagreements. The answers to the sentence 'Didactics is a science without technical solutions; all academics must have their own approaches to didactics' are rather surprising and contradicting the other answers. I think that the above-mentioned risk of technicalisation is hidden here. A perception that I did not have in face-to-face classes and that I had while reading written comments is that 'didactical solutions' risks to be perceived as 'didactical tools'. Actually, the majority of the agreeing professors state that the use of slides is one of the best didactical solutions they know and that they use them widely. They use them to synthesize notions and explanations, sometimes to foster ideas. But the reasons for the use of slides or of hypertexts³ were totally ignored, by both agreeing and disagreeing.

In short, for agreeing and disagreeing academics, the datum is rather converging: there are the professors who use slides and the professors who speak; there are the professor who deliver notes by slides and the professors who remember what to say. Here, all that I have been commenting about digital tools, their usability, their impact on learning styles of youngsters should be introduced again.

This is confirmed by the answers to the questions of the [third table](#). Though informed about the fact that the concerned issue was self-assessment, no one considered slides just as an example, as it actually is. In short: they did not think at the strategies and methods focused in face-to-face classes and only considered the technical positive impact that slides, as a short set of synthetic notes, can have on the quality of their communications to students. However, several positive and significant points can be stressed here.

³ I never mentioned, with 'the students', additional advanced didactical tools. Actually, the didactical tools are of course irrelevant. The problems that I aimed at thinking about were somewhere else.

Table 3 – *Self-assessment*

Questions	Yes	No	Total
You are sure: all your students are able to understand the slides, without taking notes	74	37	111
You are sure: all your students will never make questions about them, because they are clear	3	108	111
You are sure: your slides are so clear and focused on basic notions that they can be used year by year, with different generations of students	6	105	111
You are sure: your slides are so analytical that they can correctly represent a synthesis of your classes and of the students' study programme	101	10	111
You are sure: your slides are significant because all their contents give explanations and suggestions that students can find nowhere else	18	93	111
You are sure: your slides are extremely important because they are open to integrations, support a research attitude, foster students' thinking, reduce the risk of technicalisation and standardisation	95	16	111
You are sure: your slides are interesting as they meet students' cultural and scientific expectations	104	7	111
	401	376	777

All academics confessed not to have observed before the impact that slides have on their students learning; they did it after our face-to-face classes. And: 67% of professors states that delivered slides reduce students' taking notes; 97,50% observed a reduction of questions about formal knowledge introduced by slides; 95% denies the usability of the same slides academic year by academic year; 91% states that such a great attention is paid to the elaboration of slides that formal study programmes are well represented and synthesised; 85% is satisfied by the personal integrations that allow students to find in slides something that cannot be found elsewhere; 92% is convinced that the contents of their slides are able to reduce the risk of standardised issues and to foster ideas and thinking; 94% was convinced that slides meet students' cultural and scientific expectations.

3. *A student-centred pedagogical approach*

Considering what we have previously stressed, what learning and knowledge, what cognitive competences and tools do we have to refer to? Do we have to ignore subjects and disciplines because information and data are already in the internet? Then, do we need to encourage the search for knowledge by interest, motivation and procedural memory? Maybe, we should do. But then, is it really necessary to know whether and how formal knowledge is important, or if subjects need to change, or is it a really false question? In my opinion, all these questions are embarrassing, because the problem does not exist, actually, if it is posed in terms of subjects and of knowledge. In other words: we need notions and formal knowledge to strengthen meanings. We can't think without notions and formal knowledge. Without them, we can only be generic thinkers or generic producers of embarrassing opinions.

Someone says that education and schools are dying, or that they already died (Postman, 1997). Someone says that educational responsibility is needed in all educational settings and that creativity will do the rest. Among pedagogists and educators, manicheism still survives. And, too often, they do forget their being adults and the nature of their roles. My idea is that both academics and pedagogists have to start again fostering a *projectual thinking* – their own and their students' – or they will disappear, too poor and unuseful to be credible. Academics and pedagogists, I think, do not have many options: either their projectual thinking decides to meet and understand the strategic, methodological, logical, critical, linguistic, communicative competences that new generations have and will have, or their aspirations will be totally unsuccessful. As academics, educators, pedagogists or adults, we should be interested in something else. We have to aspire again to our true role, fostering interest, motivation, pleasure in learning and meeting, because those who are interested in knowledge and motivated to learn are, as well, competent and aware. We all have to be pedagogists, to know what pedagogy is. We have to support new generations:

- in their attempt to overturn homologation;
- in their interacting while using technological tools and communicating with a large vocabulary;
- in their relating with peers within multiple social networks, real and online;

- in accessing the natural world and the technological world;
- in demonstrating to be aware and dynamically competent, able to manage the consequences of mistakes.

A student-centred pedagogical approach (Cambi, 2002, 2006; Massa, 2005; Piccione, 2013, Rivoltella, 2003; Salomone, 1997; Zannini, 2008), according to me, should therefore support students in, at least:

- accessing to learn. In short: cognitive strategies needed to access learning don't change, humanity doesn't change, the need for meaningful relationships doesn't change. Changes produce, on the one hand, the integrated complexity of tools, the integrated complexity of relationships, the integrated complexity of self while living relationships, the integrated complexity of formal / non-formal / informal skills, the complexity of the time and space of educational settings while experiencing learning (Albanese, Ligorio & Zanetti 2012; Antonietti, 1995). On the other hand, change produces a non-linear use of cognitive strategies, a non-sequential access to knowledge, the use of a deconstruction / reconstruction based on an argumentative, semantic and systemic thinking, integrated with a sequential use of logic competences, with hypertextuality and interactivity, interdependence and cooperation, connection and contamination (Bertolini, 2006; Johnson-Laird, 1994; Cadamuro, 2004; Castells, 2004; De Kerckhove, 1993; Brandimonte, 2004). The predictive, prescriptive, representative, projective, mediative, trans-generational roles should be focused on, independence in thinking should be strongly fostered;
- perceiving to learn. Here, our main, cultural and scientific, reference point is actually pedagogical: Walter Ong's (1982) and Marshall McLuhan's (1964) lessons taught us how deep are all implications concerning the connections between transmission of knowledge and sensory perception. Present technological tools let us already foresee that the touch and the psychomotor dimension will be involved and interested in all future processes of teaching and learning (Pinto Minerva & Gallelli, 2004), with good opportunities for taste and smell. Deep analyses will be required, at least with the aim of reducing the usual pessimistic points of

view about the impact of technologies (Spitzer, 2013): advanced tools will be more and more advanced and the pedagogical focus will no longer deal with the processes of imitation activated by media such as television, but with the processes of simulation and experimentation of virtual reality instead. Why should such involvement and interest worry or be a limit? In my opinion, there are no reasons: neither for the possibilities offered to sensory perception, nor for the perception of self, nor for the perception of the psychomotor self, nor for the perception of one's own and others' identity. The further integration and contribution of an improved tactile and psychomotor perception may lead to more refined networks or webs of knowledge. And, finally, the contribution of neurosciences will be recognised as useful, even interesting, even necessary (Rivoltella, 2012). The main target contents for researchers, at present, should therefore be the analysis of the additional associative, analogical, interpretative, representative, etc., procedures concerned with the sensory perception, even with the amplified role of skin ego (Anzieu, 1996) interacting with a thinking ego. In other words, researchers should study the perception of a material, visible and tangible self, and a projected, visible but intangible body. For the sciences of education, the target contents and words do not change: a thinking style able to open to difference, interconnections, interdependence, transition, transformation, projectuality, participation, responsibility, active eco-citizenship, use of individual and collective memory (Maldonado, 1994, 2005; Pinker, 2000; Castells, 2004; Baddeley, 1995), use of cognitive strategies. And, furthermore: the pedagogical attention should focus on anti-dogmatic, problematic, ethical, aesthetic, scientific thinking;

- interacting to learn. I won't argue here about the attention of pedagogy to the processes of socialisation and interaction, which are of course pedagogical priorities both in F2F and online actions. My aim in this part is to introduce some methodological and strategic approaches that in the recent years have been trying to suggest some interesting ideas on how innovating traditional educational settings. Some of them revisit and propose a facilitated and participatory learning, assuming that facilitated learning doesn't intend simplification / reduction /

impoverishment of contents, notions and meanings, and that participatory learning doesn't intend the pure manipulation of knowledge instead of a meaningful learning (Cambi, 2006). One of those proposals, the pedagogy of care, seems to have the promising perspective of fostering added values to problem solving, brainstorming, roleplaying, focus group. Supported by a scientifically critical approach, the pedagogy of care is a model focusing on the reading of man and of his future, and is set out according to pedagogical fundamentals, categories and points of view (Cambi, 2006). It is an approach that claims the depth of pedagogical observation and reading, that states the central position of the individual in his own personal, social, ethical and biological life, that summarises the idea of pedagogy and didactics as actual settings where reflecting on man's growth. Its phenomenological methodological point of view focuses both on the idea of deconstruction and reconstruction of the individual and collective narrations as care of selves, as care of human being, of his education, expertise, interactions, emancipation (Massa, 2005);

- knowing to learn. Besides the different issues already discussed here, my specific aim is to add some short considerations on e-learning as mediated/integrated training model, on the formal dimension of ICTs. Much time seems to be passed the European Commission have since defined e-learning as tomorrow's education and training. For this pan-European body, teaching and training means to plan, select, manage, encourage, promote and valorise⁴ specific individualised educational paths. Since e-learning adopts synchronous, asynchronous and collaborative teaching methods, since it includes some training approaches to encourage motivation and interest, since it favours spreading and sharing, constant updating, individual and social working processes, then mediation and integration characterise: the use of ict tools and of different virtual spaces; the selection of educational and didactical approaches, strategies, techniques and methodologies; the collaboration of experts, professionals, teachers, trainers, stakeholders,

⁴ Technically, according to a European meaning, *valorisation* should here be intended as synthesis of *dissemination* and *exploitation* of updated scientific, cultural, didactic, methodological, strategic information.

users; the simultaneous and consecutive activation and fostering of learning processes; the opportunity of training actions providing scientific, cultural, experimental and projectual contents; the process of storing a social, cultural, professional and experimental capital (Castells, 2000, 2004; De Kerckhove, 1993). The technical concerns about using e-learning are related to the processing of the electronic page, the relationship between the interactors of the teaching and learning processes, the assessment of the educational paths and modules quality. Doubters argue either that the pure typing of an electronic text doesn't allow the strengthening of important psychomotor skills, or that the act of deleting co-presence limits proxemics and reduces the improvement of interpretative competences of human behaviours, or that the impact of educational contents on users' needs can't be defined, tested, valued, reviewed, understood in terms of quality and efficiency (Spitzer, 2013). Two main concerns should be referred to, here. The former: compared to the printed text, chirography reduces the value of writing as communicative movement, mood, energy and personalization. The dynamism of hand and of its articulations and the mechanisms of chirographic processes actually disappear during the elaboration of an electronic text; however, other mechanisms invest movement, actions, automatism and control. Moreover, customisation can be achieved through the use of different tools and means. It isn't, I think, the decreasing quality of a product to be replaced, it is only the presence of additional procedures of text processing (Maldonado, 1994, 2005; Rifkin, 2000). The latter focuses on the problem of the educational relationship based on the professor's and student's co-presence. Supporters of direct interaction argue that eye contact, proxemics and gestures, supra-segmental traits of voice as well as the warmth of communication can't be guaranteed by distance. Even though this is a complex issue, it doesn't seem so difficult to explain the problem again: we can only say that the e-learning tools are not e-learning. Distant class has the same expectations, personalization of the relationship, multiple communicative tools with their codes and features. Detractors of distant training fall in a methodological mistake, confirmed by their idea that education and training are rather simple procedures aiming at transmitting knowledge. The

strategies of blended learning or online conferencing, for example, can easily change any prejudice or concern. In addition, even without choosing between the one or the other position, it is undeniable that the two just mentioned strategies allow surmounting any additional theoretic-scientific side. It's simple to say again that e-learning, as mediated and integrated training, can be a system that is coherent with, and functional to, all the processes the main learning theories prefer. Briefly: a) according to behaviourism, adaptation produced by the interaction with the environment form the man. In e-learning, those processes are encouraged by an approach including the use of a pc or laptop together with the 'computer based' or 'computer assisted' education, on the basis of contents and assessments on an electronic support, online or not. Of course, behaviourists' proposed interaction must include a constant connection with the whole reality, not with one of its parts or some of its means and technologies; b) according to cognitivism, privileging mental action, the action of cognitive abilities and of mind, any educational action or approach of e-learning, online or not, in 'e-conferencing' or by 'blended learning', can be a strategy fostering thinking, insight, the use of different cognitive styles, the dialogue with self, the intense dialogue with the other and the others, and more than that, the two above mentioned strategies amplify the opportunity of relational, intellectual and experimental meeting, as well as enhancing the quality of impact on immediate or secondary users' cognitive sphere⁵; c) according to constructivism, considering the learner's centrality in his intentional development by dynamic actions, mental actions and the intra-subjective and inter-subjective relationship, all activities or teaching approaches to e-learning can be part of a strategy that encourages intentionality, autonomous use of learning processes, consciously clear knowledge, relationship with e-tutors, academics, trainers and other learners. The indicators of quality of e-learning can't be simply identified with those of presence and distance, of tangibility and virtuality, of the times of the traditional or parallel schools. Such aspects must be considered from a methodological

⁵ Technically, the immediate user is the one who is directly co-interested in the theme and contents of a product. Secondary user is the one who can benefit from culture, science, methodology, strategy, etc., thanks to the transversal study of themes and contents, even not belonging to his specific scope.

and strategic, organizational and instrumental point of view. To delete all possible doubts, it is necessary to specify the quality of his reference criteria. As to reasons: logical and phenomenological coherence, adequacy, authority, availability to mediate and cooperate, sustainability of meaning, interest, motivation. As to contents: logical and argumentative coherence, suitability, reliability, actuality of purposes and functionality of tools, understandability, consistent modularity, flexibility, usability and reusability, customisability, contextuality, updatability, plurality of viewpoints. As to methodologies: logical and organizational coherence, systematicity, propaedeuticity, malleability, intentionality. As to resources and settings: logical and instrumental coherence, usability, finalisability, flexibility, experimentability, dynamism, availability to cooperate, synchronicity and asynchronicity.

3.1. *New requests to didactics*

First, a very general statement, linked to all the previous contents: the universality of the rights to education can't be pedagogically explained only by referring to some generally accepted principles; in other words, it isn't enough to declare the importance of equal opportunities, to support the idea of the promotion of the uniqueness of students among the uniqueness of all other students. Paradoxically, these principles, which must be respected wherever and whenever, place the students in a position of dependence on adults: not that consistent, natural, obvious dependence on adults' training role that someone is still stating, but the kind of dependence for which the student's valorisation risks to be limited. In other words: if the respect for the universality of a right and its principles must have a complete meaning, if a student has the right to mature according to himself, if he has the right to social, cultural, geographical and historical integration, then his position in the world must have a meaning consistent with present times. His time asks for formal, non-formal and informal skills, participation, innovation, autonomy, critical thinking; they are difficult goals, far from being even perceived in some world areas, but necessary and essential for our future and theirs, for a true sense of uniqueness. And then, again, the principle of an advanced educational challenge must be uniqueness: a student can't just be the bearer of a

right to knowledge, but also a subject that carries with him, like everyone else, a capital of competences and aspirations, skills and projects, a person that, like everyone else, lives and manipulates knowledge, rights, duties and values that he breathes in adult settings and then customises in the course of his existence as he better can and wants. The pedagogical approach has to accept the challenge of changing and contributing to

- identify new forms of coherence with the social, institutional orientations of communities;
- reinforce the new principles of a new liveability and a pro-active eco-citizenship in countries, in towns, in cities, in the countryside, in deserts, within all formal, non-formal, informal educational settings, etc.;
- restore the true sense of the roles and functions of educational professionals, namely the one of being promoters of motivation, interest, curiosity;
- delete the position of professors as kings who transmit knowledge and skills to listeners, with the aim of meeting new teachers who consider their knowledge neither as a purpose of their profession nor as the ambitious aim of their users, but as tools and techniques;
- recognize to new generations a role in history that nobody has ever had before and understand the implications and consequences that will actually arise from it;
- valorise the importance of fostering thinking styles, communicational styles, research habits, social relationships within F2F and virtual settings, life projects;
- support students in perceiving the right to the uniqueness of their voice, life, thinking.

Actually, these points can be summarised in two great problems: on the one hand, the pedagogical reasons and the human significance of the role and function of all the educational professionals; on the other hand, the biological, physiological and neurological reasons of the human equality of our present and future students (Bruner, 2000; Cambi, 2002, 2006; Boffo, 2006). The first issue to deal with is the pedagogical approach to the reasons why some adults are invested with the role and function of bringing students to maturity, so that they can be citizens, available to socialisation,

main actors of their thinking styles, competent in behaving independently, ethically engaged and responsible in their attitudes and behaviours, independent in the context of labour markets. Here, I prefer not to give a specific contribution defining educators' role and function; I'll follow a different path. What has been so far said about the universal right to education is of course not enough: we can say that a right is universal only if we are sure that parity and equality exist. The basic pedagogical implications are therefore connected with the clear ideas that we should have about the way humans use cognitive strategies, manipulate (instrumental, technical, conceptual, procedural, strategic, methodological, etc.) knowledge, read the meanings of phenomena, use projectual competences.

These issues are essential to address a wider problem concerning the reliability of education: I think that we risk, at present, to address the false problem of the distinction between preferable knowledge and truly educative knowledge; it's clear that encyclopaedic knowledge is of no use to anyone, that the continuous update of knowledge is functional to man's life in his own time, that the tools disseminating information and knowledge radically changed in qualitative and quantitative terms, that the relationships between orality and writing and among the cognitive effects produced by technologies changed and should be re-defined, that the categories of linearity and sequentiality need additional definitions, that the representation of the silent, still, concentrated student who reads and accesses information and knowledge on written, silent, still pages can be imagined no longer. We should now prefer the perception of students as creators and manipulators of plots, as intentional and projectual individuals, as individuals aware of the metacognitive dimensions of self-observation, self-evaluation, self-assessment, self-orientation; as individuals able to have both a logical and a nomadic access to knowledge, to parallel and non-linear processing (Maffesoli, 1973; Logo, 2001; Morin, 2001; Gardner, 2000, 2002).

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