

Cl@ssi 2.0: experience in Emilia Romagna

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Abstract

This article presents some of the results of the Ministerial Initiative Cl@ssi 2.0 in the Emilia Romagna Region. Having described the reference field in which the scaffolding action of the research group of the University of Bologna, coordinated by Prof. Luigi Guerra, is positioned, the paper presents the coaching model through which the design and documentation of the teaching practices adopted in schools was supported. Analysing the experiences of the ER classes, we have identified eight project themes, subsequently modelled on two levels: the didactic modelling of the experiences (construction of interpretation hypotheses); and the construction of a themes/models map (checking/adapting the hypotheses, experimentation) through which each school was able to describe and publish processes, products, etc. which characterised their specific project experience. The paper concludes with a series of general reflections on the three years' work.

L'articolo illustra alcuni risultati dell'iniziativa Ministeriale Cl@ssi 2.0 in Emilia Romagna. Dopo aver descritto il campo di azione in cui il gruppo di ricerca, coordinato dal Prof. Luigi Guerra, si posiziona, il contributo presenta il modello di accompagnamento che ha supportato le scuole nelle fasi di ideazione, progettazione e documentazione di percorsi di insegnamento e apprendimento amplificati

dall'uso delle TIC. A partire dall'analisi delle pratiche didattiche relative alle classi coinvolte, sono stati identificati otto temi/progetto, successivamente modellizzati su due livelli: i modelli didattici delle esperienze (costruzione e interpretazione delle ipotesi); la costruzione di una mappa organizzata per temi/modelli (verifica/adattamento ipotesi e sperimentazione) attraverso cui ogni scuola ha descritto e formalizzato i processi e prodotti ritenuti più qualificanti nella propria esperienza. L'articolo si conclude con alcune riflessioni generali maturate al termine dei tre anni di lavoro.

Parole chiave: TIC, innovazione didattica, modelli pedagogici, scaffolding, accompagnamento

Keywords: ICT, didactic innovation, pedagogic models, scaffolding; coaching

Introduction

The Cl@ssi 2.0 project, which began in school year 2009/2010 with 156 classes in the first grade secondary school, is part of the actions implemented by the Ministry of Education for Digital Schools. The Cl@ssi 2.0 action aimed to “create learning environments suitable for the constant, common and everyday use of technologies in schools, in order to verify, in a three-year period, how and how far the impact can affect learning processes in an era of transformation of knowledge dissemination and communication languages” (Guerra, 2010). Therefore, as can be seen in the Call for Applications for the experimental classes, the action of this project aimed to offer the possibility to verify how, and in what way the learning environment can be transformed through the use of technologies in everyday teaching practices.

The logic of this project was that of enhancing the implementation of several didactic innovation models in order to “infect” other schools in the area that were not directly involved in the initiative. The project immediately worked to promote change in the teaching and learning processes, from organisation to settings, from didactic planning to methodologies, starting with an analysis of the class needs and planning the integration of technologies. Attention was therefore focused not specifically on the technology but rather on the dynamics of innovation that can be triggered through technologies.

The participating classes had to ensure that the whole Class Board was willing to implement the project; great importance was also given to the involvement and contribution of the local authorities, particularly to extend the action to primary and secondary schools in a.y. 2010/2011.¹

1. Cl@ssi 2.0 : the situation in Emilia Romagna

Starting from 2 October 2009 by regional decree no. 11836, the Emilia Romagna regional group was established, composed on USR, ANSAS Emilia-Romagna regional nucleus (ex-IRRE) and the didactics and educational technologies research group of the University of Bologna. In the first year of the project, the schools involved in Romagna included 12 classes from first grade secondary school, to which in subsequent years 8 primary school classes and 8 second grade secondary school classes were added.

The working group, which remained stable for the 3 years of project implementation, played a coaching role for the design in the involved classes through direct and remote actions in each class (visits to the schools, web conferences with the whole class board, use of forums, collection of documentation) and periodic training meetings with the teachers involved on specific topics, meetings held at the university.

Within the project, two conferences were also held, the first on 20 May 2010 at the University, as a final meeting for the school year 2009/2010 to present a summary of the activities carried out, and the second on 8 September 2010, “Cl@ssi 2.0 in Emilia-Romagna. Trasformare gli ambienti di apprendimento, innovare la didattica”, in which the 12 schools presented their own projects in an integrated manner.

2. The coaching model in Emilia Romagna

Starting from S.Y. 2011/2012 the action supporting the 2.0 classes was extended to primary and second grade secondary schools in the Emilia Romagna Region. The regional group strengthened its collaboration by extending the number of human resources involved in the implementation of the coaching model. The organisational model agreed with all the 2.0 classes involved:

1. a visit with the whole team (one representative of each group member) and the class board;
2. direct communication arrangements between the class contact person and the working group contact person;
3. possibility to use other methods of communication via e-mail or skype;
4. a direct or remote meeting to review the design and prepare the contributions for the final conference;
5. a monthly training meeting (theoretical/workshop) divided into two sessions: an initial training session open to teachers and school managers interested in the proposed topics for all the schools in the region of all levels, and a second session to compare notes on the project design with the Cl@ssi 2.0 contact persons from primary, first grade secondary and second grade secondary schools. For each school level, a supporting sub-group was identified and for the primary and second grade secondary schools a coach was added.

3. The role of the University of Bologna

In scientific terms, the research group of the University of Bologna carried out a study of the models emerging from the didactic practices (observations in class, participation in class board meetings) and narratives (reports, minutes of meetings) of the 2.0 Classes. The involved classes had access to an interactive on-line environment containing all the materials, documentation, articles; it was possible to create a specific folder to contain the material produced by the schools; forums: on educational documentation, teaching software, lesson planning...; the notification of events/training seminars (for example, the use of the IWB, ...), etc.

Each class board drew up an initial work hypothesis, interpreting the Cl@ssi 2.0 project according to the peculiarities of the local context and making their own materials available to other class boards involved in the project.

The problem posed immediately to the project coordinators was how to support the individual class teachers' activities for formalising their own projects and comparing them with others with a view to moving from mutual knowledge to the identification of joint choices in order to ensure the evolution of the project. The solution identified involved the development of a matrix (deliberately open in all dimensions) for the interpretation of the design work carried out by the various class boards, which flexibly allowed the various choices to be placed in conceptually uniform perspectives (through what was referred to as the “educational problematisation of the topics”) and at the same time allowing the comparison between different realities, the identification of strengths and weaknesses and the proposal of new horizons for development (Fabbri, Guerra, Pacetti, 2011; Baldacci, 2004).

8 project topics were identified, representing the "hot issues" in the school, and were problematised highlighting their strengths, prospects for development and risks: for each topic, possible teaching methods were proposed using new technologies and the models emerging from the school documentation, as well as those not yet present and to be developed, were highlighted.

The 8 topics identified were:

1) *The school-community relationship* The construction of a significant educational meeting point between school and community is one of the most important topics of school innovation. Many directions can be taken within this perspective: attention focuses on the so-called “hot knowledge” of the environment; the recognition and enhancement of the cultural resources and competences matured by the students in their time out of school; the construction of an integrated learning system able to blend formal school learning and environmental learning; the positioning of the school-community relationship within an overall educational project on the issues of citizenship education (Scurati, Frabboni, Guerra, 1999).

The possible didactic strategies proposed were: the IWB as a container of the hypertext of the city; the use of the Internet to gather information on the cultural

heritage; the blog as a collective volume on the city; the podcast for monitor and intervene in specific issues concerning the community.

The emerging models were therefore:

- 1a) The community as a research object
 - 1b) The community as a place of parallel and integrated educational agencies
 - 1c) The community as a place of support/remedial agencies
 - 1d) The community as a place of active citizenship
- 2) *School-family relationship*: the relationship between the school and parents (and generally with the family environment) is one of the fundamental topics of action of modern school. All levels of school are now required to take on board the need for learning targeting family contexts that are structurally in crisis in the face of the explosion of the phenomenon of diversity. Today diversity seems to be connected to migration, but also and more importantly with the culture of post-modernity, its effects on the habits, behaviour and values of its "historical" residents. The forms of participation in school life open to families under current regulations appear totally inadequate for ensuring even the exchange of information. Moreover, the dominant socio-cultural climate and some aspects of the reforms which have been introduced lead many parents to consider the school as a sort of "personal demand" service, undermining the respect for the school's educational project and the professionalism of the teachers (Frabboni, Guerra, 1991).

The possible didactic strategies proposed were: construction of a class website; design of shared telematic environments; the families as a community of practice.

The emerging models were therefore:

- 2a) Information between school and families
 - 2b) Didactic collaboration between school and families
 - 2c) Technical collaboration
 - 2d) Activation of a debate between the educational models of families
3. *The stimulation of meta-cognitive learning*: The knowledge society is strongly characterised by the rapid increase and modification of knowledge. Faced with the exponential growth of information and the skills contemporary citizens have to possess and their continuous transformation and on the basis of the most accredited results of the research on learning, for some time schools have been declaring in their planning documents the need to deliver education of a mainly meta-cognitive nature. This means having to work in a perspective of learning to learn, through the promotion of significant experiences of reflecting on learning which progressively makes learners capable of cultural management, being aware stakeholders in the evolution of their knowledge and competences, possessing the tools required to continuously pursue paths of critical acquisition of new knowledge (Vygotskij, 1986).

The possible didactic strategies proposed were oriented to both metacognitive reflection using tools such as conceptual maps, and developing the pupils' ability to reformulate knowledge through differentiated models.

The emerging models were therefore:

3a) Re-elaboration/research of contents using technological tools

3b) Construction of knowledge "applications"

3c) Diversified formalisation of the knowledge learned

3d) Reflexivity of identity: competences/behaviour.

4. *The promotion of a socio-constructivist learning approach.* Starting from the theory and experimentation of the active school, contemporary psycho-pedagogical debate on learning tends to place particular and increasing importance on the "social" forms of constructing knowledge, supporting didactic methods that go far beyond the merely instrumental boundaries of "group work" opening up to scenarios of cooperative learning and in any case all possible forms of peer education. All this, the roots of which as we have said lie in pedagogic activism, can then be placed within the current possibilities of activating "learning community" logics and practices supported by the use of the new applications of social networking (Dewey, 1916; Duffy, Jonassen, 1992) .

The possible didactic strategies proposed aimed at the experimentation of knowledge construction models based on the use of various cooperative type educational technologies.

The emerging models were therefore:

4a) Guided cooperative work

4b) Autonomous cooperative work

4c) Cooperative work among teachers

4d) Sharing of applications at school and at home

4e) Educational experiences of Social networking

5. *Distance collaboration and interschool twinning* The increasing dimensions of internationalisation in all directions of experience of the contemporary individual require that schools work to develop pupils' ability to dialogue with distant and different realities, presenting their messages in a complete and reasoned manner, understanding the messages of others, also accepting forms of critical hybridisation of their own culture. In this field, the new dimensions of the knowledge society transform the experience of interschool twinning, and generally the collaboration with "remote" realities, from a marginal operation, often with strong assistance-based features, into an inalienable need (Pacetti, 2010).

The possible didactic strategies proposed aimed to experiment different types of collaboration with schools a long way away as part of projects sometimes also aiming to strengthen language competences.

The emerging models were therefore:

5a) Distance collaborations and twinning using mainly guided methods

5b) Distance collaborations and twinning using mainly participatory methods

5c) Use of telematic exchange for language learning

6. *The inclusive school* The Italian educational environment has for several decades been characterised by its close attention to issues of disability and, generally, diversity. In the past few years the keywords have moved on from school integration to inclusion. The school of inclusion is that which manages to accept the challenge of old and new diversities: from those linked to personal mental and physical characteristics to those connected to social disadvantage, and those structurally linked to infinite forms of difference (gender, language, culture, customs...). Designing and implementing inclusion means ensuring an educational environment that is able to dialectically respond to the opposing rights of equality and diversity, designing teaching methods that aim to guarantee all learners both paths for the acquisition of competences that ensure the possession of essential shared knowledge for inclusion in society and educational experiences open to the specific motivations, resources, cultural visions of the single learner (Canevaro, 2006; D'Alonzo, Caldin, 2012; Ferrari, 2010).

The possible didactic strategies proposed concern the development of inclusion interventions through the use of new technologies and the involvement of the students in these interventions.

The emerging models were therefore:

6a) Inclusive activities managed by the students

6b) Inclusive activities managed by the teachers

6c) Creation of inclusive virtual spaces

6d) Inclusion of absent students

6e) Individualisation

7. *Interdisciplinary learning* Although the history of pedagogy has seen contributions of scholars underlining the importance of the disciplinary approach to knowledge, enhancing the role of individual subjects as many "open windows" on the cultural heritage, the organisation of knowledge by subject area is a feature of the traditional school. We may certainly say that contemporary school, while maintaining a subject-based structure, cannot do without the production of significant holistic learning experiences in which the learning contents are tackled in a multi-disciplinary and inter-disciplinary manner (Morin, 2000).

The possible didactic strategies proposed aimed at the use of computer technologies, in particular those offering the construction of hypertextual links, to carry out educational experiences that overcome the strict boundaries between subjects.

The emerging models were therefore:

7a) Multi-disciplinary teaching/learning experiences

7b) Multi-disciplinary research experiences

7c) Inter-disciplinary research experiences

8. *Management of assessment and remedial services.* In the traditional school, assessment, particularly that of student performance, occupies the role which most strongly interprets the tasks of selection that has always been assigned to it. Applying its constitutional duty, contemporary school should have the role of "promoter" for every learner rather than a role of the - inevitably classist - certification of differences.

In this framework, contemporary didactic literature has underlined the prevalently educational role of assessment: its duty to be a tool serving the measurement of problems and the attempt by the school to solve them using appropriate individualised remedial and support actions. The educational use of assessment in this context also becomes the measurement of the action of teachers in being able to critically adapt their own teaching methods to the learning needs of each learner (Cerri, 2007; Calvani 2000).

The possible didactic strategies proposed aimed both at the experimentation of new learning assessment tools and the promotion of self-assessment experiences led directly by the students.

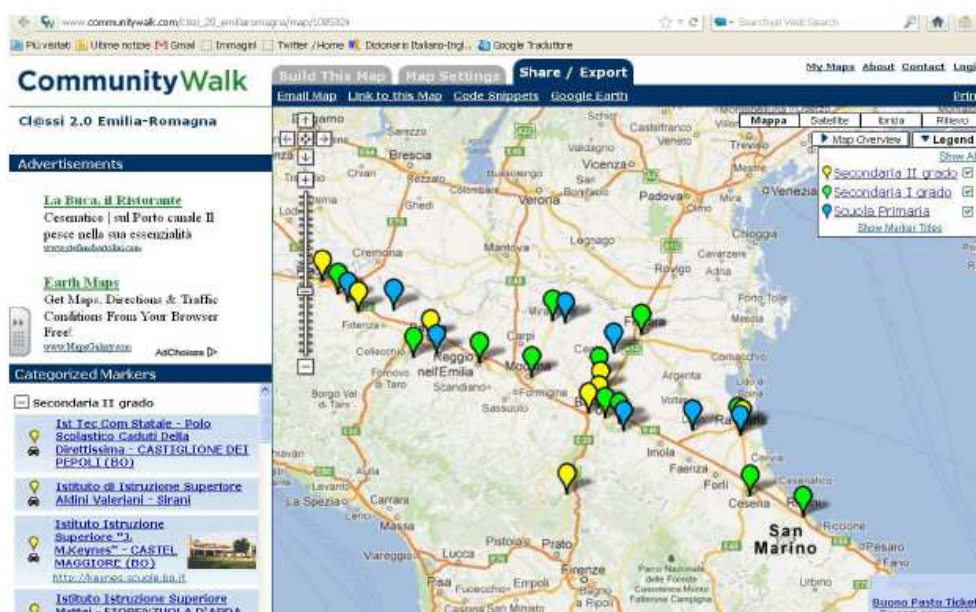
The emerging models were therefore:

- 8a) Assessment of processes using assessment grids
- 8b) Construction of self-assessment tools by students
- 8c) Construction of portfolios
- 8d) Learning assessment experiences in a network.

4. The Cl@ssi 2.0 virtual map

In order to make the didactic modelling an operational, functional tool (that could be used by the teachers) for the coaching of the 2.0 Classes, the Marconi T.S.I2 (Figure 1) developed a virtual map for documenting the processes and results achieved by the classes during the three years of the project.

Figure 1. Map of topics/didactic models²



Each school filled in the map autonomously describing the following fields:

- The presentation of the teaching experience;
- The socio-cultural context;
- The features of the learning environment;
- The planned and delivered teaching contents;
- The main activities carried out in class;
- The technologies used.

The production of the map was found to be an innovative tool for both the researchers and the teachers involved in the initiative. For the researchers, it allowed the formalisation and explicit description of the associations between didactic models and didactic practices; allowing them therefore to investigate more in-depth the essential elements which can contribute to didactic innovation.

For the teacher, it provided a tool and competences through which they could:

1. go beyond the merely reporting-based logic of describing and sharing teaching experiences in a network;
2. share new models and multimedia tools to effectively narrate their experiences;
3. strengthen the relationship between didactic models and practices, consequently increasing the teachers' awareness and planning skills.

Figure 2. Learning environment and referred pedagogic models³

Ambiente di apprendimento		
<p>CORREZIONE DI UN COMPITO - IL NOSTRO AMBIENTE</p>	<p><i>modello pedagogico di riferimento:</i> Rielaborazione/ ricerca di contenuti attraverso strumenti tecnologici (La stimolazione dell'apprendimento metacognitivo) Riflessività identitaria: competenze/comportamenti (La stimolazione dell'apprendimento metacognitivo) Condivisione di applicativi tra scuola e casa (La promozione di un approccio all'apprendimento di tipo socio-costruttivista)</p>	<p>I due FILMATI che vi proponiamo esemplifichiamo in modo diretto l'ambiente di apprendimento classe 2.0 della scuola Montanari di Mirandola</p> <p>Il primo è relativo alla correzione di un compito assegnato a casa che è il LINK principale che appare.</p> <p>Si trattava di un esercizio da farsi con il programma CMAP, ne veniva quindi fatta la correzione in classe, con la partecipazione di tutti. Certamente la buona conoscenza del programma facilita sia la discussione che la correzione. I risultati si vedono fin da subito: il grande interesse e partecipazione degli allievi.</p> <p>Il secondo filmato di cui diamo qui il link</p> <p>LINK AMBIENTE DI APPRENDIMENTO</p> <p>è relativo ad una presentazione della scuola e della classe 2.0. Ci serve per capire che di una (nel senso numerico della parola) classe2.0 occorre conoscere anche l'ambiente generale ed il contesto in cui opera. Con questo filmato si ha un quadro generale.</p>

As shown in Figure 2, for each descriptive field the compilers identified at least one relationship with one or more didactic models, in order to highlight the relations between actions/processes/products and possible referred didactic models. The map was used to carry out a preliminary screening on the topics that were most frequently considered by the classes involved. The topics most documented by the schools were:

1. The stimulation of meta-cognitive learning;
2. The promotion of a socio-constructivist approach;

3. Interdisciplinary learning;
4. Relations between the school and the community;

The least-debated topics included:

1. Distance collaboration and interschool twinning;
2. Management of assessment and remedial services.

Table 1. Overview: identification of schools on the proposed topics/models

TOPICS	MODELS	TOTAL
The school-community relationship	The community as a research object [31 documents]	(63)
Relations with families	Information between school and families [15 documents]	(37)
The stimulation of meta-cognitive learning	Re-elaboration/research of contents using technological tools [95 documents] Construction of knowledge "applications" [36 documents] Diversified formalisation of the knowledge learned [30 documents]	(173)
The promotion of a socio-constructivist learning approach	Guided cooperative work [49 documents] Autonomous cooperative work [41 documents]	(147)
Distance collaboration and interschool twinning	Distance collaborations and twinning using mainly guided methods [8 documents]	(17)
The inclusive school	Creation of virtual inclusive spaces [18 documents] Inclusion of absent students [12 documents]	(53)
Interdisciplinary learning	Multi-disciplinary teaching/learning experiences [28 documents]	(65)
Management of assessment and remedial services	Assessment of processes using assessment grids [6 documents] Construction of self-assessment tools by	(16)

	students [5 documents]	
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The “map” environment is being implemented. Shortly further research tools will be made available which can be used to cross-reference experiences, models and didactic processes/products.

Although presented only briefly here, the “map” represents a further sign of the commitment and passion applied by the regional group as well as being, due to its scientific originality, an innovative documenting instrument for the 2.0 classes and schools in Emilia Romagna.

Conclusions

After the 3 years of the project, we can highlight some criticalities of the experience.

The first reflection. Most of the teaching experiences saw the prevalence of a "humanistic" use of technologies. Technologies seem only partially to have promoted real change in the learning environment. In realities in which this change has occurred, factors such as strong collaboration between teachers, widespread motivation to the experimentation of new teaching tools, consolidated relations between the school and the community and a widespread culture of technologies used in everyday teaching (technology as an ordinary and not extraordinary element) were already in place. In these minority realities the problem was rather how to identify new models, ideas for economic and organisational solutions required to guarantee the continuity of the work undertaken in the three year period. To tackle these problems, the regional group proposed the creation of informal interest groups to jointly discuss and design didactic, technical and organisational solutions.

The second reflection. The problem of the dissemination of digital skills among teachers. While on one hand we worked with teachers who were able to stimulate and actively involve the majority of their colleagues in the class board (for example by identifying opportunities for internal training, producing teaching resources and sharing them in virtual spaces accessed by both teachers and students), on the other hand unfortunately we noted that the experimentation of technologies in schools is still far too often linked to the individual efforts of a single teacher (particularly motivated and intent on experimenting teaching technologies but who is not supported by the class board in planning or implementation). The emerging scenario seems to repurpose the now classic dichotomy between “apocalyptic” and “integrated” (Guerra, 2010). To tackle the problem of disseminating digital skills, among the initiatives of the Faculty of Educational Science of the University of Bologna, is the national coordination of a project for the construction of a certification of digital competences (Calvani, 2010; Lovece, 2011).

Notes

¹ For more information, see also

<http://archivio.istruzione.it/www.istruzione.it/pagecbb8.html?IDCategoria=430&IDSezione=1778&ID=336691> and <http://ww2.istruzione.it/category/tecnologie/classi-2-0/>

² http://www.communitywalk.com/clssi_20_emiliaromagna/map/1085324

³ The Figure 2 is a screenshot of a website implemented by the USR Emilia Romagna – Servizio Marconi and at the moment is accessible only with authentication.

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