



**Proceedings of the 2<sup>nd</sup> International  
Conference**

**of the Journal Scuola Democratica**

**REINVENTING EDUCATION**

**VOLUME II**

**Learning with New Technologies,  
Equality and Inclusion**

**ASSOCIAZIONE "PER SCUOLA  
DEMOCRATICA"**

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**ASSOCIAZIONE “PER SCUOLA DEMOCRATICA”**  
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***Title* Proceedings of the Second International Conference of the Journal “Scuola Democratica” – Reinventing Education VOLUME II Learning with New Technologies, Equality and Inclusion**

This volume contains papers presented in the First International Conference of the Journal “Scuola Democratica” which took place at the University of Cagliari on 5-8 June 2019. The aim of the Conference was to bring together researchers, decision makers and educators from all around the world to investigate the concepts of “education” in a “post-democracy” era, the latter being a set of conditions under which scholars are called to face and counteract new forms of authoritarian democracy.

Populisms, racisms, discriminations and nationalisms have burst and spread on the international scene, translated and mobilized by sovereigntist political movements. Nourished by neo-liberalism and inflated by technocratic systems of governance these regressive forms of post-democracy are shaping historical challenges to the realms of education and culture: it is on this ground, and not only on the political and economic spheres, that decisive issues are at stake. These challenges are both tangible and intangible, and call into question the modern ideas of justice, equality and democracy, throughout four key dimensions of the educational function, all of which intersected by antinomies and uncertainties: ethical-political socialization, differences, inclusion, innovation.

The Conference has been an opportunity to present and discuss empirical and theoretical works from a variety of disciplines and fields covering education and thus promoting a trans- and inter-disciplinary discussion on urgent topics; to foster debates among experts and professionals; to diffuse research findings all over international scientific networks and practitioners’ mainstreams; to launch further strategies and networking alliances on local, national and international scale; to provide a new space for debate and evidences to educational policies. In this framework, more than 600 participants, including academics, educators, university students, had the opportunity to engage in a productive and fruitful dialogue based on researches, analyses and critics, most of which have been published in this volume in their full version.

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## Premise

In recent years, an important debate has developed on the role that digital technologies are playing and can play in the transformation of education and its institutions. Digital platforms, distance learning, blended learning, online training technologies are part of a significant restructuring and reculturing of the educational worlds. Digital technologies have restructured learning practices, educational content and the forms of educational governance which are immersed in public spaces and global markets. On the one hand, the digital governance of education contributes to changing and reconfiguring educational practices and the management of education on a local, national, international and transnational scale. On the other hand, technologies make possible the interconnection of multiple modes and shapes of formal, informal and non-formal education and training, producing forms of re-spatialization of education, locating the classroom within a digital learning ecosystem and favouring the emergence of different models of blended or hybrid learning.

The pandemic scenario has accelerated these processes, making more visible the tensions between multiple worlds of education and the processes of digitalization, while triggering a complex restructuring of educational institutions whose directions are not yet easily predictable. Perhaps, we are entering a new era that will mark the end of education as we have known it so far. In such a scenario, it becomes more urgent to carry on and debate an informed educational research, that explores the realities of the relations between education and digital technologies. This is especially needed because technologies are far from neutral. They are a heterogeneous technical and social world in which possibilities to change education for the better and make education fairer can be encountered as well as risks can be run of reproducing social and educational inequalities. Therefore, key questions are: how and in what direction the processes of digitalization are changing education, its practices and its governance? What are forms of coordination between educational technology markets and the institutional and educational actors in the emerging transnational governance arenas? How do the professional and social actors (teachers, managers, students, families) that are involved in the digitalization of education react to and translate these transformations? How do digital technologies change the aims and the

curriculum of contemporary educational institutions? How can the digital competencies learned by students beyond the educational spaces (school and university) become a resource for learning processes and educational socialization in educational contexts? And above all, what are the possibilities that digital technologies offer us to reinvent education and its governance that are worth to be explored?

Papers collected in the Volume try to give preliminary answers to those issues. Furthermore, contributions from a range of experts, specialists and scholars cannot avoid facing educational inequalities which haven't by any means disappeared. They have rather changed and (re)combined into new forms that challenge the resilience of educational systems in terms of both effectiveness and equity. Several contributions published in the Volume aims to address these issues from a theoretical and empirical point of view, as well as their implications for educational policies. In this sense, proposals linked to educational inequalities in relation to social stratification as a factor affecting cognitive results, educational choices, the attainment of educational qualifications and working careers are of interest for the reader. Comparative research on different scale (comparisons between national, regional or local cases) is particularly relevant and much importance is attached to the analysis of institutional factors (tracking, comprehensive vs selective systems, accountability policies, private education, ability grouping) which can produce educational segregation dynamics affecting educational inequalities, intersecting extra-curricular factors, such as urban segregation, for example.

The intertwining and interconnecting of differences (gender, socio-economic, cultural, ethnic, cognitive, and motivational factors) often generate inequalities both for their effects in themselves and in relation to the policies implemented to address them in their multidimensionality and intersectionality. Therefore, specific tracks on how education systems and educational institutions try to manage differences and end up producing inequalities are welcome.

The links between education and the labour market are another central aspect of research: the debate on the inflation of educational qualifications and over-education, the differential returns to education according to the type of diploma, degree program or type of tertiary program attended and, more generally, the relationship between education and social mobility represent a pivotal set of

phenomena to understand production and reproduction of educational inequalities.

The applications of randomized controlled trials to the assessment of policies aimed at reducing inequalities and improving cognitive and career results as well as empirically driven reflections on how educational policies intersect the complex relationship between equity (equality and inclusion), quality and excellence are one of the main focuses researchers have dealt with in the collected papers.

Gender inequalities are a key topic to understand educational differences. Educational contexts are marked by a significant gender gap in staffing and in the formative experiences of children, teenagers and young students. These differences reflect and often reproduce gender stereotypes and asymmetries in societies at large. How are gender issues addressed in classrooms? Where are they encountered in training settings? What models do teachers convey, and what are the emotional responses from students of diverse gender? How do educational institutions practice and reproduce gender stereotypes and asymmetries? Can school and university provide contexts in which to acquire gender awareness and tackle gender issues? What are the responsibilities of educational contexts in the representation of gender in society? What experiences and good practices have been activated to promote greater gender equity? What cultural resistances? Several questions are addressed in the Volume and many are the answers discussed.

Many forms of educational segregation persist, yet today a growing presence of women – which are in some cases becoming a majority – is found even in fields that have historically been a male domain; this is the case, for example, of medicine and biology in higher education. International and national data show that many things have changed in recent decades, and gender equity is rising in all spheres of education and training. At the same time, several initiatives have been launched to promote greater awareness of gender stereotypes and prevent phenomena such as discrimination and gender-based violence. However, much remains to be done – not least to prevent backlashes and the emergence of new inequalities alongside established ones. This is the case, for example, of the asymmetries in accessing fields of knowledge that may become relevant for the future of work (e.g., digital skills), or the development of new practices of discrimination related to the use of new technologies (e.g., hate speech or revenge porn).

Younger generations have been challenging those constraints surviving from the past, but new challenges arise in a constantly evolving global environment, where the urgency of the climate crisis in the midst of the coronavirus pandemic call for societal radical shifts while populism, unemployment, artificial intelligence, remote education and communication are affecting the ordinary daily life as we knew it.

Some analysts fear the pandemic will spur a new kind of backlash against the very basis of global society, from migration to cooperation and interdependence, while others worry about younger generations' abilities to overcome mass unemployment and economic vulnerability. Economic, political and environmental crisis are now fully part of the youth horizon: how are formal, informal and non-formal education going to support young people in moving forward positively and purposefully in their lives while simultaneously ensuring space for their autonomy, decision-making and voice?

Such general question contains intersected and multiple issues and applies across contexts as diverse as the role and relevance of democracy as educational content, the changing landscape of non-formal learning/education, the forging of future visions on politics, digital technologies and the media, youth educational transitions, youth experiences at work, the relation between consumerism and environmentalism, the widening of opportunities and constraints stemming out from cooperative learning and digital exchange tools.

Social research and youth studies have been producing a wide range of analyses on these relevant issues, with the (re) emergence of broader theories and empirical inquiries directed towards the recognition and validation of non-formal education, the promotion of youth participation, and the deeper rethinking of youth policies.

Under the large umbrella of an education to be re-invented, papers in the Volume are dedicated to new generations, transitions and the future of education, with a broad, multidisciplinary, and internationally set of contributions focusing on a variegated platform of topics on youth studies theories, critical analysis of relevant societal debates surrounding youth in and out education; in and out the labour market; on youth transitions throughout and across cultures, statuses, roles, responsibilities and institutions; on the impact of the various initiatives to promote and enhance youth participation; on the role of youth organisations as well as on the strengths and

weaknesses of youth policies at both a national and supranational level.

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## ***Classi in Rete. Rethinking Education in Small Schools. An Experimental Research in Abruzzo***

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**ABSTRACT:** *The school today is organized according to a specific configuration dating back to the sixteenth century and definitively established during the nineteenth century, called by Vincent (1994) the 'dominant forme scolaire'. However, there are other organizational forms developed above all in rural areas and typical of 'small schools'. Studies demonstrate how the adoption of network technology in teaching can better integrate remote students' classroom (Hannum et al., 2009) and out-of-school activities (Hawkes et al., 2002; Panizzon, Pegg, 2007), but it requires a support action for the teacher preparation (Azano et al., 2019). INDIRE, in collaboration with le Centre scolaire du Fleuve et des Lacs (Ministère de l'éducation et de l'enseignement supérieur du Québec), Italian University Line (IUL), Ufficio scolastico Regionale (USR) Abruzzo and an expert of University of Valle d'Aosta, is engaged in experimenting innovative methods to help small schools teacher to overcome the limits deriving from remoteness (Mangione, Cannella, 2020). 'Classi in rete, Classes on the net, model originates from the study of a Québec government initiative called École éloignée en Réseau (Allaire et al., 2009) and it is based on classrooms as Knowledge Building communities (Scardamalia, Bereiter, 2010; Cacciamani, Messina, 2011). Delocalized classes aim to design a common disciplinary path involving student groups in parallel in the same activities by adapting calendars, spaces and teacher roles. Teachers of delocalized classes share cooperative educational practices such as 'pairs aidants', 'mentorat' or 'delocalized equipe' by using Video conferencing and Knowledge Forum (KF) (Mangione, Pieri, 2019). This study aims to implement a hybrid model (combining online synchronous, asynchronous and face-to face activities) to work with classrooms as Knowledge Building communities, inspired to Classi in rete framework, and to analyse the propensity for change by small school teachers involved in the project as an indicator to evaluate the impact of implementation. It explores the training and experimentation path that involved 12 Abruzzo small schools, 11 digital animators, 31 teachers, 6 observers (school principals). The path recalls MOOC-Eds (Clark, 2014; Kleiman et al., 2015) space were digital animators and teachers able to think about the model, to identify application contexts and themes on which to build twinning between different schools and classes. In this space teachers able to reflect through the construction of 'notes' in the KF and the participation in synchronous meetings with research group, receiving regulative feedback aimed at improving experiences in their classes. The «propensity for change by small school teachers» is identified with reference to the concept of readiness for change, defined by Armenakis (1993) as related to the beliefs, attitudes and intentions of members of the organization with respect*

*to the need for change and the organization's ability to successfully make such changes. Through the application of MESI battery (Moè et al., 2010), and at the same time the qualitative analysis of the focus group made with some of the teachers who took part in the experience, will be possible to understand if and how the participation in the Classi in rete path promotes a change in the Motivations, Emotions, Strategies and Teaching routines of the teachers involved.*

**KEYWORDS:** *small schools, Classes on the net, knowledge building communities, knowledge forum, propensity for change.*

## **Introduction**

*Classi in rete*, Classes on the net, model originates from the study of a Québec government initiative called École éloignée en Réseau (ÉÉR), aimed at safeguarding small remote schools and ensuring quality education even in the most inhabited places isolated and difficult to reach. The Quebec Ministry of Education has instructed the Center facilitant la recherche et l'innovation dans les organizations (CEFRIO) to identify a solution to the problem of school closures in rural and isolated areas by exploiting the opportunities offered by new information technologies and communication.

Today, over 600 small schools join the Quebec network, which work together, also achieving results in terms of decreasing the feeling of professional isolation, access to an environment for personalized learning and development and mobilization of new professional skills. The model is based on the idea that «rather than closing a school, let's open it thanks to digital», to do this it is important to change the culture of the single class: putting it on the net, thus connecting it to other classes (a model different from that of distance learning) to enrich the school environment.

### **1. *Classi in rete* model**

At the basis of *Classi in rete* (Classes on the net), a hybrid model (combining online synchronous, asynchronous and face-to face activities), based on the idea to work with classrooms as Knowledge Building communities (Scardamalia, Bereiter, 2010; Cacciamani, Messina, 2011), there are the following three pedagogical principles:

- The classroom as a learning community. An environment that fosters collaboration and is characterized by a particular class dynamic as it promotes respect, dialogue and mutual help. The pedagogical intentions, similarly to the learning intentions of the students, are formulated openly and all, according to their specific aptitudes, contribute to achieving the desired learning goal.

Collective investigation activities are encouraged because they help to understand and solve problems that the teacher can relate to the course of study.

- Teach for problems. The study of authentic issues is the heart of the pedagogical approach of *Classi in rete*. Teaching for problems means involving students on real problems while leaving room for their creativity and allowing them to deepen their individual and collective understanding of the topic.
- Promote dialogue through technologies. Involved in the study of a real and authentic problem, students are first invited to ask questions and express ideas about their understanding of the problem and then to improve all together the seemingly most promising ideas to better understand, or even solve the problem. The class dialogue, fueled by written contributions published on the knowledge forum and by verbal exchanges in the classroom or by videoconference, progresses as students analyse the various aspects of an issue, the results of a research and the data collected.

When an innovation such as *Classi in rete* is introduced in a scholastic context, it is important to consider the propensity for change of teachers, to analyse the impact of the innovation introduced.

The «propensity for change by small school teachers» can be identified with reference to the concept of readiness for change, defined by Armenakis (1993) as related to the beliefs, attitudes and intentions of members of the organization with respect to the need for change and the organization's ability to successfully make such changes.

This study aims to implement the *Classi in rete* model in a network of 12 Italian small schools, to work with classrooms as Knowledge Building communities and to analyse the propensity for change by small school teachers involved in the project.

## Method

### 2.1 Participants

The participants at the beginning of the project were 12 schools, 31 teachers and 11 'digital animators'. At the end they were 7 schools and 21 teachers from primary (N=14) and first level of secondary school (N=7), (M=1, Age: mean= 50, SD=6,6; years of teaching: mean=17,1, SD=8,95), 5 of them are 'digital animators'.

### 2.2 Context

The path of the project recalls MOOC-Eds (Clark, 2014; Kleiman et al., 2015) space were digital animators and teachers able to think about the model, to identify application contexts and themes on which to build twinning between different schools and classes. In particular, the project was supported by two online environments: Knowledge Forum (KF) and Webex.

KF is an online environment developed to support the production of knowledge (Scardamalia, 2004). KF provides specific spaces for discursive interaction called 'view'. In this spaces the members of a KB community can share their ideas, questions, and problems of understanding using notes, that is to say written messages. They can also build ideas onto other member' ideas/notes or answer questions posted by the other members using the build-on function. Views, notes, and build-ons are stored on KF, allowing the researchers/teachers to have access to, and analyse subsequently members' discourses.

In this space teachers were invited to reflect about the point of strength and weaknesses of the activity, and possibilities to ameliorate, during the development of the project Also the students of the classrooms involved used KF to develop their KB activity.

Webex is an online environment supporting videoconferences, based then on synchronous communication, used in the project to support periodical virtual meetings among the classrooms involved in the same macro working groups (presented below).

The teachers were trained through Webex meetings with experts focused on the theoretical model and the online environments (Webex and KF) and aimed to share the projects realised by teachers and to improve them. The project was implemented in 4 phases:

- Phase 1. Start of 'online classroom' experimentation – March 2021
- Phase 2. Progress of the 'online classrooms' experimentation – April 2021
- Phase 3. Conclusion of the 'online classrooms' experimentation – May 2021
- Phase 4. Follow up (October / November 2021)

During the path 4 macro working groups have been created on topics capable of making primary and secondary first degree work vertically:

- And then we went out to see the Stars again
- The Squares: the places of the heart
- About our story... let's talk about our countries
- Stories of ordinary (IN) DIFFERENCE)

The teachers, thanks to the work space in the KF, were able to think about the *Classi in rete* model, to identify application contexts and themes on which to build twinning between different schools and classes. Through the synchronous comparison spaces The teachers had the opportunity to meet with INDIRE Researchers, the IUL group, and Researchers from Quebec.

### *2.3 Measures*

The propensity for changes was measured at a quantitative level through the MESI (Motivation, Emotion, Strategy and Teaching) questionnaires (Moè et al., 2010). MESI provide 9 scales that detect the following dimensions:

1. job satisfaction
2. praxes

3. positive emotions as teacher
4. negative emotions as teacher
5. positive emotions while teaching
6. negative emotions while teaching
7. strategies
8. self-efficacy
9. incrementality

Each scale consists of items asking to indicate the degree of agreement on statements or the frequency of use (in the case of the praxes and strategies), or the frequency of experience (in the case of emotions) in a Likert scale at 5 (scales 2-7), 7 (scale 1) or 9 points (scales 8 and 9). The questionnaire was administered before and at the end of the activity.

The dimensions of MESI questionnaires were explored in a focus group (with 4 teachers involved). Another focus group will be realized in July.

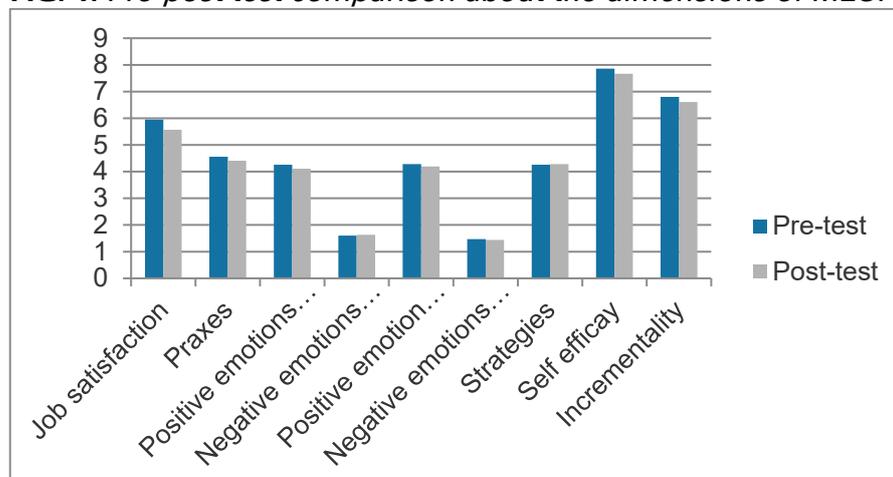
#### 2.4 Data Analysis

For each dimension of the MESI the mean value was calculated and the data were analyzed by comparing pre and post tests through paired samples t tests. Only for the dimensions with significant statistical differences, a pre-post test comparison by means of paired sample t-tests for each item was carried out. As regards the focus groups, the content analysis of the transcripts was carried out.

## Results

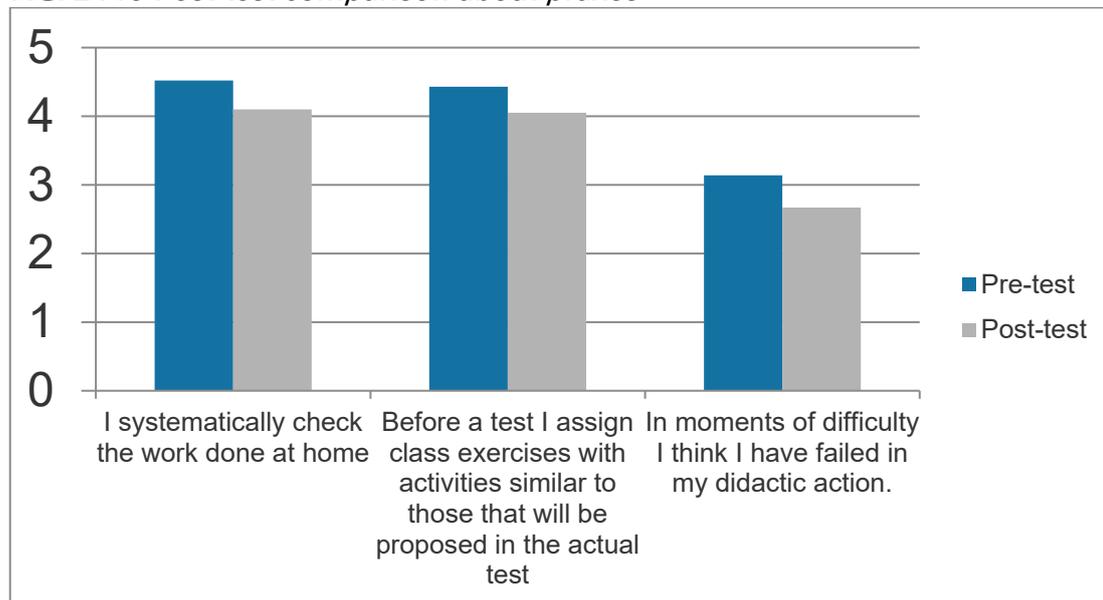
The results about the different dimensions of the MESI are showed in Fig. 1. A statistical significant difference emerged from the analysis about praxes  $t(20) = 2.89, p < .01$

**FIG. 1.** Pre-post test comparison about the dimensions of MESI



The pre-post test comparison for each item of the praxes dimension is showed in Fig. 2.

**FIG. 2** Pre-Post-test comparison about praxes



As showed in Fig. 2, statistical significant differences emerged with reference to the following items: «I systematically check the work done at home ( $t(20) = 2,42, p < .05$ ), «Before a test I assign class exercises with activity similar to those that will be proposed in the actual test» ( $t(20) = 2,96, p < .01$ )» «In moments of difficulty I think I have failed in my didactic action» ( $t(20) = 2,22, p < .05$ )

The main results of the first focus group we have carried out- the second focus group will be done in July- are presented using the words of the teachers.

As far as satisfaction about teacher's role is concerned, you can see that the teachers on the one hand attribute this satisfaction to the values present in the small school: «Working in small schools gives you this: working in a family, in an environment that still has values, where families rely on school», on the other hand to the fact that in the small school it is easier to experiment «It's beautiful, since the small school is a laboratory».

When it comes to emotions, teachers show many positive emotions such as pride, wonder and happiness. «I was happy with the involvement and motivation of children. I was proud of how they managed to move between classes with such different ages without being afraid. I was very proud». While negative emotions are mainly related to technological problems, «anger when the platform didn't work», and organizational problems, «At the end, when we had to reschedule the meetings, that was just the moment when I thought «I can't do it»». Thanks to this project, the teachers were encouraged to reflect and modify some teaching strategies and practices. «Thanks to this experience, I realized that I have the bad habit of oversimplifying and that the reworking phase

has too little importance for me. I realized that I should leave more space for students, and I should make them more responsible». The teachers appreciated the use of the KF «It seems excellent to me using the KF as a tool, to allow children to be more authentic even in the formulation of their own hypotheses».

The teachers felt that they were playing their role well when they saw the students, all the students, actively and enthusiastically participate in the project. And when they saw that the students' autonomy and proactivity increased «the absolute autonomy and this space in which they feel free, the fact that there is no teacher and no evaluation».

The teachers believe that training is fundamental to their work and have greatly appreciated the *Classi in rete* training path. Concerning replicability, teachers think the main obstacle to spreading this model is being able to make colleagues understand its usefulness. And in particular the teachers underline the usefulness of this model for small schools that often present environmental obstacles.

## Conclusion

The aim of the present study was to implement the *Classi in rete* model in a network of 12 Italian small schools, to work with classrooms as KB communities and to analyse the propensity for change by small school teachers involved in the project in order to analyse the impact of the innovation introduced. Considering the results emerged from the analyses of MESI questionnaire we can highlight three relevant aspects.

First of all, the reduction of the frequency of the check of the work done at home can indicate the overcoming of separation between activity at school and at home. The collaborative investigation activity carried out, indeed, may have led to a rethinking of the work structure that typically focus the activity in the classroom on explaining a new topic and the activity at home of carrying out a study activity on the topic. The collaborative investigation activity may have become pervasive in the two moments (at school and at home), as expected by the KB principle 'Pervasive Knowledge Building' (Scardamalia, Bereiter, 2010) thus leading to rethink the functional distinction between them. Furthermore, the use of KF may have created the opportunity for teachers to continuously monitor the activity itself.

Furthermore, with reference to the reduction of the frequency of the praxis focused on the tests management («Before a test I assign class exercises with activity similar to those that will be proposed in the actual test»), it is possible that the project activity has activated a reflection to rethink assessment that must take into account not only individual learning but also the collaborative KB activity. As indicated by Zhu and Kim (2017) assessment in the KB perspective is, indeed, a complex activity involving both the individual and the community level with a wide range of tools, that can consider activity monitoring tools, social network

tools, discourse level analysis and meta-discourse level analysis. Also the teachers of the present project, adopting a KB perspective, can have considered that is not possible to create artificially class exercises in preparation of a final test: assessment of individual knowledge gains and skills development realized through a KB activity demand a focus on the products created by the students during their activity where knowledge and skills are incorporated.

Finally with reference to the change in the reaction to moment of failure, the collaborative dimension between teachers introduced by the project could have favored the development of a sense of community (Rovai et al., 2004)., supporting a new practice in which difficulties are not interpreted as individual failure at the didactic level but as a challenge to be faced at the teacher community level.

Results emerging from the focus group seems to confirm that the teachers perceive that they are part of a community, in their small school, with common values and positive relationships with families. Reflections and changes about strategies and practices seems to be oriented to recognize more responsibility to the students in their activity, and this choice, combined with the possibility to use KF in a freeway, can have promoted more students' autonomy observed by the teachers.

Concerning repeatability, the use of *Classi in rete* is linked to the integration of this model in the school as a pervasive and non-episodic way of working.

New directions of inquiry can be represented by the possibility to analyse the impact of the *Classi in rete* project considering the propensity for change both from the teachers' and the students' point of view.

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**LEARNING WITH NEW TECHNOLOGIES, EQUALITY, AND INCLUSION**