

WORKING PAPER

INAPP WP n. 89

Hybrids: beyond the in presence and distance learning categories for a new school in Italy

Saverio Lovergine

Daniele Barca



Hybrids: beyond the in presence and distance learning categories for a new school in Italy

Saverio Lovergine

Istituto nazionale per l'analisi delle politiche pubbliche (INAPP), Roma
s.lovergine@inapp.org

Daniele Barca

Istituto Comprensivo 3 di Modena, Dirigente scolastico, Modena
daniele.barca@ic3modena.edu.it

GIUGNO 2022

The opinions expressed here reflect only the authors' views and not their institutions'. The INAPP is not responsible for any use that can be made of the present results. The other usual disclaimers apply.

CONTENTS: 1. Introduction and review of the literature. – 2. The time of the transformational phenomenon; 2.1 The four 'cantons' and hybridization. – 3. What path for a new school; 3.1 The school curriculum; 3.2 Class; 3.3 Classroom; 3.4 Time – 4. Conclusions. – References

INAPP – Istituto nazionale per l'analisi delle politiche pubbliche

Corso d'Italia 33
00198 Roma, Italia

Tel. +39 06854471
Email: urp@inapp.org

www.inapp.org

ABSTRACT

Hybrids: beyond the in presence and distance learning categories for a new school in Italy

In the contemporary debate on education modernization strategies, innovation is one of the privileged ways to reform and improve the education systems of each country. Since 2020, in which the COVID-19 pandemic began, the debate on innovation and teaching has accelerated, bringing about transformations to the organizational-teaching model of the Italian school. The opportunities offered by ICT, new digital technologies and digital languages, are affecting the educational proposal and learning. In particular, in the context of the debate of dichotomy of teaching in presence or distance, to the advantage of the hybrid (blended), for the purpose of a high learning result, satisfied students and high school status completion rates. In the light of international literature and some experiences, this work intends to reflect on the consequences of the relationship between digital technologies, teaching and learning in Italian schools. Specifically, in the context of the evolution of the relationship between innovation and teaching, the paper contributes to the debate of ideas on school diverging from practice that aim to break “cultural coherence and fixity”. In the model proposed in this paper, the challenge of the sustainability of the school system in the next years will be closely linked to the construction of organic proposals, which the authors define as a ‘cantons’: class, classroom, time, and school curriculum.

KEYWORDS: distance learning, education systems, educational technology, rethinking school and education, school

JEL CODES: A2, I2

DOI: 10.53223/InappWP_2022-89

Cite as:

Lovergine S., Barca D. (2022), *Hybrids: beyond the in presence and distance learning categories for a new school in Italy*, Inapp Working Paper n.89, Roma, Inapp

1. Introduction and review of the literature

The school is of paramount importance for the well-being of each country as it plays a key role about in promoting growth, knowledge, social development and inclusion, but also in the critical function and socialization of student, in order that they become healthy individuals and active citizens.

In the process of modernization of education, innovation is one of the privileged ways to reform and improve education systems. Today's digital society require schools rethink organizational-teaching model. The necessary renewal of teaching methods and school practices must take into account the attitudes and behaviours towards technologies of the new generations of students, the digital natives (Prensky 2001; Ferri 2011, 2009). This innovative process has to avoid running into forms of technological determinism and deepening how digital technologies contribute to the processes of emancipation, autonomy and equity in schools (Means 2018).

The process of digital transformation in schools confirms the potential, but also the criticalities, of a transition that calls into question the traditional educational setting and the role of the main actors in the schools. Therefore,

rethinking education in the digital age should become a central issue for policy makers for two reasons. First, only education can form a skilled workforce that is prepared for future jobs and a changing labour market. Rethinking education in the digital age constitutes a prerequisite for Europe's future global competitiveness. Second, only education can provide the preconditions for the social inclusion and equal participation of European citizens in a digitalised democracy. Rethinking education in the digital age therefore matters for safeguarding European values such as equality, democracy and the rule of law (European Parliamentary Research Service 2020, 1).

Then, rethinking education will require a disruption of the entire education and training system, as well as a re-literacy of students and adults, to make them increasingly compatible with this technological progress. Even more important will be the relationship between the education system and the corporate world (Lovergine and Pelleri 2019).

In this direction, in recent decades, international organizations have offered insight of thought and considerations to define an Open education path: "Open technologies allow everyone to learn, anywhere, at any time, on any device, with the support of anyone" (European Commission 2013, 3).

As well summarized by Giancola *et al.* (2019) educational and organizational innovation based on new technologies becomes the key:

- allowing education and training systems to "keep pace with the digital society and economy" (European Commission 2013);
- implementing educational processes that are effective and inclusive, improve educational outcomes (OECD 2016);
- creating skilled labour force, promote more employment, and contribute to the development of citizenship skills for all people (UNESCO 2017).

In Italy, this path has been promoted and rethought through the initiatives of the *Piano Nazionale Scuola Digitale* (MIUR 2015), the guidelines of the Italian Ministry of Education, University and Research which defined the overall innovation strategy of the Italian school, in order to of a new

positioning of its educational system in the digital age. The NDSP was the fundamental pillar of *La Buona Scuola* (Law n. 107/2015), the operational vision of the Italian government for the innovation in the school system and the opportunities for digital education.

These documents are to be reviewed in light of what happened at the beginning of 2020.

The COVID-19 pandemic has created the largest disruption of education systems in history, affecting nearly 1.6 billion learners in more than 190 countries and all continents. Closures of schools and other learning spaces have impacted 94 per cent of the world's student population, up to 99 per cent in low and lower-middle income countries (United Nations 2020, 2).

The pandemic has prompted several countries to explore new models of education management. In this new scenario, in which priorities have been changed, a process of multiplication of technologies has been triggered, a combination of traditional ones and new digital technologies.

In Italy, the former Minister Azzolina has set up a committee of wise men, chaired by the current Minister Bianchi, to formulate a series of ideas and proposals useful for school management during the pandemic, so-called DAD (Distance Learning, in asynchronous modality). This working group also had the task of drawing up development guidelines for the future of the Italian education system with a broader view: school-building programs, use of digital technologies, training and recruitment of teachers, evaluation system and so on.

In general, the present work intends to carry out a reflection on how digital transformation is able to support and enhance learning processes in the school, keeping in mind the politics of education at the same time (Selwyn and Facer 2013).

In fact, the reflection is moving in two directions: one, on political, cultural, economic and ethical of the digital revolution in education; and the other, on “the relationship between new digital technologies and school curricular, pedagogical and evaluative features of the school form typical of industrial societies and its spatial and temporal articulations” (Giancola *et al.* 2019, 464).

Specifically, the authors intend to start from the second one, for analysing one of the fundamental aspects on which the public debate has been expressed most, namely in presence, distance or hybrid learning (blended).

Literature has dealt with this problem to define which of these teaching ‘formats’ – in presence, distance, or hybrid, achieves the highest learning outcome, of satisfied students and high school status completion rates (Bernard *et al.* 2014; Chigeza and Halbert 2014; Israel 2015; Northey *et al.* 2015; Southard *et al.* 2015; González-Gómez *et al.* 2016; Ryan *et al.* 2016).

Although there is no complete agreement among researchers on the definition, or precise meaning, about the term ‘hybrid’ or ‘blended learning’ (Bernard *et al.* 2014; Chigeza and Halbert 2014), an agreement has been found on the meaning of the distinctions about the three formats.

In literature, the “in presence” format is characterized as traditional (didactic format involving a physical classroom and the synchronous physical presence of all the participants) in relation to the other two which represent the most recent and innovative interventions (Chigeza and Halbert 2014; Adams *et al.* 2015; Pellas and Kazandis 2015; González-Gómez *et al.* 2016).

Instead, the “distance learning” format is characterized by the absence of a physical classroom replaced by the possibilities offered by digital technologies (learning management systems or virtual

learning environments, such as Teams etc.) that allow a learning out of time, place and cadence (Bernard *et al.* 2014; Chigeza and Halbert 2014; Northey *et al.* 2015; Israel 2015; Potter 2015).

The “hybrid or blended learning” format (they are used interchangeably, Ryan *et al.* 2016) arises from the combination of the previous two formats (Graham 2013; Bernard *et al.* 2014). This format is often analysed as an effective counterpart of the other two learning formats (Pellas and Kazandis 2015; González-Gómez *et al.* 2016), or both as an example of “well integrated format of the other two” (Israel 2015), or of “Format that combines the advantages of both of the other two” (Adams *et al.* 2015). This format, in the literature, is defined on based the time: “not less than 50 percent of the total time dedicated to the format in presence” (Bernard *et al.* 2014).

Literature has also dealt with the problem which of these teaching ‘formats’ – in presence, distance, or hybrid – achieves the highest learning outcome, of satisfied students and of high school stats completion rates (Bernard *et al.* 2014; Chigeza and Halbert 2014; Israel 2015; Northey *et al.* 2015; Southard *et al.* 2015; González-Gómez *et al.* 2016; Ryan *et al.* 2016).

According to the scholars, the hybrid format leads to slightly better results than students who follow the one in presence learning (Israel 2015; Northey *et al.* 2015; Southard *et al.* 2015; González-Gómez *et al.* 2016; Ryan *et al.* 2016), due to the opportunity to study independently and participation in student-centered asynchronous collaborative learning activities supported by digital technologies. Contrary results were found in the comparative studies in the university setting by Adams *et al.* (2015), due to a lack of interaction with the material and for the home isolation of microbiology students; and by Powers *et al.* (2016) for the lowest grades obtained in the psychology course.

That said, in the next paragraphs, after a brief introduction on concept of hybrid learning, the authors will be presenting their proposal useful to tackle the challenge of the sustainability of the school system in the next years. It will pass through the consistency of the choices made on the elements, which the authors define as a ‘cantons’: class, classroom, time, and school curriculum.

2. The time of the transformational phenomenon

Since 2020, the year in which the COVID-19 pandemic began, the debate on schools has focused in particular on the in presence or distance learning dichotomy. The concept of distance was not invented by the pandemic; on the contrary, many of the productive and relational activities were already taking place at a distance, so much which in some sectors little or nothing has changed.

During pandemic phase, the use of distance learning, the increased risk of dispersion, the ‘exhaustion’ of interpersonal relationships via web, have highlighted two aspects that the school should take into account. The first, in the short and medium term, is understood as a transformational phenomenon on several levels (health, cultural, environmental, technological), for which there will be a before and an after. The second is a difficulty of cultural understanding: all the small and large universes that revolve around the school are dominated by hybridization.

What is happening to the school in this period mirrors what happens to Persephone-Core in the book by Vecchioni (2020), who finds the solution to his story in a hybrid life. A new life, given by the emergence of events, that allows the world to thrive. Someone, like the wise grandmother Rea, will have to open our eyes and show that the dimensions that already revolve around the school today are hybrid. This is the greatest lesson of the pandemic period.

Hybrid is learning, between the reproduction of the transmissive passivity and the activation of students' energies. Hybrid is the relationship, this seeing each other but online, being in the classroom but at a distance. Hybrid is autonomy, between strengthening and limiting, between kids who lacked the context to give their best and others who gave their best at home. Hybrid are the new skills required of teachers, not only the digital ones but also the relational ones: the empathy to be created by being behind a screen. Hybrid is participation, including complete disappearances of students, phone calls to keep the ties alive, the need to see each other also to tell each other how you are. Hybrid is also the attitude of families, between an increase in participation and the difficulties related to custody needs that have never before emerged as now. Hybrid is the coexistence of real and digital that the exaltation of presence (not all presence is redeeming at school otherwise we would not have stories of failures) clouded from a cultural point of view even before it was operational.

In school, it is not enough to understand the methodological differences between learning in presence, distance or hybrid, evident in the literature on teaching, but not yet penetrated into the depths of the rituality of the school. The epidemic has made the ONLIFE (Floridi 2019) evident even at school, a dimension of thought, rather than a technological one. The Internet has turned fifty and its hybridization in teaching practices are still seen today as incomprehensible, if not distant one.

2.1 The four 'cantons' and hybridization

The concept of hybridization must relate to the cornerstones of school in the learning presence, defined in this work as 'cantons' (Barca and Profumo 2020): class, classroom, time, and school curriculum. The pandemic has hybridized all of them, as was already the case in those dimensions of the school, diverging from the practice in Italy, which aim to break the "cultural coherence and fixity" of the relationship between the four cantons above.

In the Italian school experiences, the concept of hybridization is already present, thanks to autonomous initiatives by boarding school in which deliberately intervened on one or more of these variables, which, in turn, have consequences on others. The most widespread of these interventions was in schools that have created disciplinary classrooms, different aggregations of class groups, hourly compaction. Interventions that highlights how the modification of a 'canton' inevitably involves the modification of the others in a cascade, such as, for example, changing the class groups meant intervening on the environments and sometimes on the timetables (e.g. *Scuola senza zaino*¹ and *Scuole DADA*²).

The return to school in September 2020 offered solutions that could inevitably have an impact on the first three cantons; the classroom in its structure and in its management (distancing, sanitization, shifts etc.), the composition of the class (the unit-class dismembered), the times (decrease in the number of hours, alternating presence-distance, shifts etc.). Reshaping the three aspects means doing it coherently without impact of the fourth, the school curriculum (e.g. the school in other spaces/outdoor learning such as museums, farms, parks etc.).

For those who have not dwelled on the sad experiences of sequence of explanations in video or written and oral verification of contents, in this daily experience of distance learning, for the first time,

¹ <<https://www.scuolasenzazaino.org/>>.

² <<https://www.scuoledada.it/>>.

the learnings have approached people's lives. The pandemic period has shown a hypothesis of a school close to reality, to nature, which goes beyond the disciplines, because building a hydroponic greenhouse or making bread at home and telling about it or discovering its history or provenance requires narration and notions of mathematics, physics, science, geography, history etc. As proposed in *The green and the blue* (Floridi 2020): the future of ethics, knowledge, even politics is all in this marriage between digital and nature. Therefore, even the dichotomy between in presence or in distance learning is small, if not useless, compared to the potential between “green and blue”, on which to build a school curriculum.

In the opinion of the writers, this challenge has not yet been met. The certainty of the return of the first cycle and the uncertainty of the return of the secondary school, still underway in the first months of 2021, have polarized the attention of schools towards a first cycle in the presence with an integrated digital teaching with a wealth of experience greater than at the first wave; and a totally online secondary one that led to protests and the exaltation of the presence. A missed opportunity for change in favour of a further exaltation of the presence, almost a nostalgia for the *ancien régime*. The idea of an education system that also includes hybrid learning is changing the rules of the game. Below, the authors will be presenting their proposal sustainability of the school system in the next years, which will pass through the consistency of the choices made on the four cantons: class, classroom, time, and school curriculum.

3. What path for a new school

3.1 *The school curriculum*

The schools that in recent years have reshaped their teaching by creating a new relationship between the aforementioned four cantons have generally always started with the restructuring of the spaces. Starting by idea that every pedagogical thought has its physical, material and concrete implications with the learning space (Weyland 2019).

A first consideration to be made is the vertical differentiation by cycles with respect to the prospect of limited presence and hybridization with online. From 3 to 14 years of age, the use of internet and devices is directly proportional to the age and autonomy of the student: more autonomous you are, the greater the online proposal could grow, understood not only as the automation of learning or technology, but as a space creativity, asynchronous interdisciplinary projects, synchronous laboratory activities. From the age of 14 onwards, autonomy takes over and, at the same time, the social skills of the children. Creativity, organization and in-depth analysis of contents can also become an experience of orientation to life and future study and work choices for students. Some proposals divided by classes are below.

The kindergarten – The experiences of Nordic kindergartens could be proposed to work on ateliers for small groups, also taking advantage of common spaces to create activity corners.

The first three classes of the primary – By type of teaching/learning, they are those that would most strongly require the presence and a minimum percentage of online activities. Having smaller class groups, as hypothesized for social distancing, could even improve personalization and an attention to basic learning in the presence. The current experiences in DAD classes outline interventions aimed at

creating routines and relationships, rather than real video lessons, as well as ‘challenges’, reality tasks, manipulations, ‘art attacks’. Such learning could be supported and community created by creating special webinar channels (in addition to the RAI offer) with readings, stories, personalized accompaniments aimed at groups smaller than the morning ones; o dispatch more laboratory or exploratory of education or a foreign language online in a balanced way. A real space for creativity and the involvement of talents and personal passions could be created.

From the fourth primary to the third, lower secondary school – By type of skills and content, a single cycle from 9 to 14 years could be achieved (especially in comprehensive schools). The sources of reflection and remodelling are already present in the indications, in the *Guidelines for the certification of competences*, in the vertical curricula for the competences of the various schools. It comes to thinking about integrated programming, in which presence/distance learning are complementary. A design that would avoid some redundancies of content that afflict even the most active comprehensive on the side of the school curriculum for skills.

Second grade secondary school – The distinction between the first two years and the final three years is crucial for building new learning processes. In fact, the overcoming of the boundaries of the disciplines in the two-year period is already widely foreseen (as well as widely forgotten) since 2007 by the cultural axes, perhaps still today the most complete attempt to develop students' skills. Methods such as the flip classroom³, the debate, the critical construction of videos, can play an important role, as a link between life and learning. The final three-year period, on the other hand, which is decisive for personal choices and very close to autonomous work or university study experiences, should be played on a strong idea of project by learning and service learning, as happens in central Europe or, in Italy, in very innovative experiences (H-Farm⁴ and Liceo Steam⁵). A balance between presence and distance learning, transmission of the teacher and individual or small group re-elaboration, use of storytelling, artificial intelligence (data management and rationalization of processes) and digital technologies, all integrated with fundamental knowledge, through an alternation periods of project work and ordinary teaching.

3.2 Class

As mentioned, by changing the school curriculum, the constitution of the classes inevitably changes as well, and consequently, also the evaluation. Self-assessment, favoured by distance learning, is more consistent with legislation (Legislative Decree n. 62/2017) than with teaching practice.

It is a different path and model of school, which in the context of the autonomy of the Institutes, in which groups replace the class understood as born in the same year remains as a formal aggregate, focused on the skills to be acquired, and the classrooms are transformed into specialized laboratory spaces for each teacher⁶. A new idea of class as an aggregation, in a more functional sense for individualization, open classes, for groups of skills, and more inclusive, also to encourage recovery and

³ <<https://bit.ly/3Mgip73>>.

⁴ <<https://bit.ly/3a8q1uK>>.

⁵ <<https://liceosteam.it>>

⁶ Alemannenschule Wutoschingen <<https://bit.ly/38WNezT>>.

enhancements. The section, the class could take on different connotations directing towards portfolios, profiles and school personal curricula, starting from 9 years of age.

3.3 Classroom

Continuous sanitation and lower numbers of students will also affect the use of the rooms and the overall organization in the future. Surely, the setting of the disciplinary/laboratory classrooms, already present in some schools, could favour teaching more focused on skills. It also becomes an opportunity to rethink the workstations, bringing the school closer to home and vice versa (The home as a place of learning, the school as a home).

As in distance learning, the home will be part of their classroom, so, it is possible to reconstruct personal 'corners' or distributions of desks that do not isolate but constitute natural aggregations for working in groups. It could also be an opportunity to use large spaces (lobbies, lecture halls, etc.) with small groups to do widespread learning in space. Taking advantage of September and October, as well as of April, May and June, we could also integrate outdoor learning experiences already existing in Italy, even with the construction of gazebos, seats, etc.

3.4 Time

With a view to outdoor learning, the timetables could also change according to the season, as some schools do to compact the timetables based on the four-month period. Shifts, rotations, relationship between times in presence and at a distance, management of the number of hours, are all themes that at the same time constitute a starting point and an arrival point. Each class features a variety of times and ways of learning. Practices for autonomous learning and tutoring, for example, can offer multiple answers to the different characteristics of students and provide them with the opportunity to reflect on their own path. Teenagers are often alone struggling with challenging homework. Self-employment and tutoring allow supporting them, to accompany the transition towards complete autonomy, providing times and spaces of freedom and containment and the possibility of expressing oneself with respect to needs, inclinations and passions. Evidence-based scientific research has proven the positive effect of peer tutoring on student learning. Both figures obtain significant and demonstrable improvements, especially if the peer tutoring is accompanied by the facilitation of the teacher, who provides constant feedback and helps set learning objectives and monitor results.

4. Conclusions

School is a living and intelligent organism. The challenge of the sustainability of the system in the next years will pass through the consistency of the choices made on the four cantons taken into consideration. You can start from wherever you want, but the effectiveness of the solution will be closely linked to the construction of organic proposals on the class, classroom, time, and school curriculum.

It is a hybrid model in which the single student could access knowledge in presence learning, in synchrony (he is at home and can follow the lessons, perhaps in a group context with his classmates

who would be communication mediators), in asynchronous (can develop the activities of the synchronous in an extension or deepening of learning). The student of any age learns, not digitally: he learns 'like mangroves'; it learns and grows in the fresh water of presence, but also in the salt water of the internet.

This hybrid model has the following six consequences.

- 1) The extension of e-learning activities would constitute the true open school, always in operation, the home-base of learning that continues in homes but also in the city and why not, when we can, in school environments.
- 2) Different figures, typical of e-learning, such as the tutor, should be added to the path. It could be the same teachers or other trained to work remotely. Fundamental figures because they would be the human and relational glue of the two presence/distance processes.
- 3) Hybridization requires significant and weekly planning activities for teams and class councils, which today, however, are not provided for in secondary school.
- 4) It will be necessary a personal equipment of a device. There are secondary schools that already make it fall within the annual or three-year spending ceilings. Not all, however, are equipped for the management of massive purchases and/or subsidized loans for families. A system action during the adoption phase would be desirable in which a slight increase in the spending ceiling would allow all families to have a sort of bonus for the purchase of a personal device. Of course, the institution should provide the tool to those who need it on loan for use upon presentation of ISEE and final redemption. There remains the problem of the home connection, which, however, in my opinion, would require more system intervention.
- 5) The platform becomes the space for the aggregation of contents, both editorial and self-produced, of the teacher or students, a virtual place of continuity between the face-to-face lesson and the remote activity/project, where the integrated video lesson is only one of the moments of the journey, to which accompaniment meetings and verification of asynchronous activities are preferable.
- 6) Experiences such as web-tv and web-radio, more than a repository of documents, can be the tool to create common multimedia contents for all the classes of the school but also to favour community actions, to replace the physical agora or the typical community meeting opportunities of the open school.

References

- Adams A.E.M., Randall S., Traustadóttir T. (2015), A Tale of Two Sections: An Experiment to Compare the Effectiveness of a Hybrid versus a Traditional Lecture Format, *Introductory Microbiology, CBE - Life Sciences Education*, 14, pp.1-8
- Barca D., Profumo F. (2020), Innovare la didattica per una scuola indisciplinata, in Campione M., Contu M., *Liberare la scuola. Vent'anni di scuole Autonome*, Bologna, Il Mulino, pp.325-342
- Bernard M.B., Borokhovski E., Schmid R.F., Tamim R.M., Abrami P.C. (2014), A meta-analysis of blended learning and technology use in higher education: from the general to the applied, *Journal of Computing in Higher Education*, 26, n.1, pp.87-122
- Chigeza P., Halbert K. (2014), Navigating E-Learning and Blended Learning for Pre-service Teachers: Redesigning for Engagement, Access and Efficiency, *Australian Journal of Teacher Education*, 39, n.11, pp.133–146
- European Commission (2013), *Opening up Education: Innovative teaching and learning for all through new technologies and open educational resources*, COM(2013), 654
- European Parliamentary Research Service (2020), *Rethinking education in the digital age*, Bruxelles
- Ferri P. (2009), I nativi digitali, una specie in via di apparizione, *Education 2.0*, 28/05/2009 <<https://bit.ly/3OoDY6C>>
- Ferri P. (2011), Nativi digitali puri e nativi digitali spuri, *Education 2.0*, 04/03/2011 <<https://bit.ly/3zOdzuT>>
- Floridi L. (2020), *Il verde e il blu. Idee ingenue per migliorare la politica*, Terni, Cortina Raffaello
- Giancola O., Grimaldi E., Romito M. (2019), La digitalizzazione della scuola. Temi, teorie e metodi di ricerca, *Scuola democratica*, 3, pp.461-479
- González-Gómez D., Jeong J.S., Rodríguez D.A., Cañada-Cañada F. (2016), Performance and Perception in the Flipped Learning Model: An Initial Approach to Evaluate the Effectiveness of a New Teaching Methodology in a General Science Classroom, *Journal of Science and Education Technology*, 25, 3, pp.450-459
- Graham C.R. (2013), Emerging practice and research in blended learning, in Moore M.G. (Eds.), *Handbook of distance education* (3rd ed.), New York, NY: Routledge, pp.333–350
- Israel M.J. (2015), Effectiveness of Integrating MOOCs in Traditional Classrooms for Undergraduate Students, *International Review of Research in Open and Distributed Learning*, 16, 5, pp.102-118
- Lovergine S., Pelleri A. (2019), *Quale futuro per il lavoro in un mondo digitalizzato: Analisi della letteratura sugli effetti delle nuove tecnologie e della robotica sull'occupazione*, INAPP Paper n.3, Roma, Inapp
- Means A.J. (2018), *Learning to Save the Future: Rethinking Education and Work in an Era of Digital Capitalism*, London, Routledge
- MIUR (2015), Piano Nazionale Scuola Digitale
- Northey G., Bucic T., Chylinski M., Govind R. (2015), Increasing Student Engagement Using Asynchronous Learning, *Journal of Marketing Education*, 37, 3, pp.171-180
- OECD (2016), *Trends Shaping Education 2016*, Paris, OECD Publishing
- Pellas N., Kazandis I. (2015), On the value of Second Life for students' engagement in blended and online courses: A comparative study from the Higher Education in Greece, *Education and Information Technologies*, 20, 3, pp.445-466

- Potter J. (2015), Applying a hybrid model: Can it enhance student-learning outcomes?, *Journal of Instructional Pedagogies*, 17, n.11, pp.1-11
- Powers K.L., Brooks P.J., Galazyn M. (2016), Testing the Efficacy of MyPsychLab to Replace Traditional Instruction in a Hybrid Course, *Psychology Learning & Teaching*, 15, n.1, pp.6-30
- Prensky M. (2001), Digital Natives, Digital Immigrants, Part 1, *On The Horizon*, 9, pp.3-6
- Ryan S., Kaufman J., Greenhouse J., Joel She R., Shi J. (2016), The Effectiveness of Blended Online Learning Courses at the Community College Level, *Community College Journal of Research and Practice*, 40, n.4, pp.285-298
- Selwyn N., Facer K. (2013), Introduction: The need for a politics of education and technology, in Selwyn N., Facer K. (Eds.), *The politics of education and technology: Conflicts, controversies and connections*, Palgrave MacMillan, pp.21-38
- Southard S., Meddaugh J., France-Harris A. (2015), Can SPOC (self-paced online course) live long and prosper? A comparison study of a new species of online course delivery, *Online Journal of Distance Learning Administration*, 18, n.2, pp.8
- UNESCO (2017), *Education for Sustainable Development Goals: Learning Objectives*, Paris
- United Nations (2020), *Policy Brief: Education during COVID-19 and beyond*, August
- Vecchioni R. (2020), *Lezioni di volo e di atterraggio*, Torino, Einaudi
- Weiland B. (2019), New challenges for the school of the future, between pedagogy and architecture, *Scuola democratica*, 4 <<https://bit.ly/3z3i44D>>

