Revista Latinoamericana de Tecnología Educativa, 16(2)
http://dx.medra.org/10.17398/1695-288X.16.2.97

RELATEC
Revista Latinoamericana de Tecnología Educativa

ARTÍCULO / ARTICLE

Between tradition and innovation: the use of textbooks and didactic digital contents in classrooms

Entre la tradición y la innovación: el uso de libros de texto y contenidos didácticos digitales en las aulas

Alessandra Anichini, Laura Parigi y Stefania Chipa

Recibido: 27 Octubre 2017
Aceptado: 1 Diciembre 2017

Dirección autors:

Istituto Nazionale di Documentazione, Innovazione e Ricerca Educativa (INDIRE). Via Michelangelo Buonarroti, 10 – 50122 - Florencia - Italia

E-mail / ORCID

a.anichini@indire.it

https://orcid.org/0000-0002-3319-1689

l.parigi@indire.it

https://orcid.org/0000-0003-2801-5928

s.chipa@indire.it

https://orcid.org/0000-0001-5587-3632

Resumen: Since 2013, the Italian Minister of Education promoted the use of digital or mixed paper-digital texts in the classroom by means of legislative act (Lex 128/2013). Since then, adoption of the textbook is not mandatory in our country: Italian schools, according to their autonomy, can choose to adopt teaching materials from publishers, Open Educational Resources, or auto-produced texts. The law legitimates the experience of some Italian schools that are innovating the use of textbooks and are involved in a process of auto-production of content (textbooks or DDC, Didactic Digital Content). The article attempts to describe the work of these schools within a network of practice named «Avanguardie Educative». It intends to analyse teachers beliefs and attitudes upon «studying», «textbooks» and «digital texts», to capture innovative aspects, but also to look at difficulties and obstacles along the path of innovation, not always so clear and well defined.

Palabras clave: Textbook, Auto-Production, Didactic Digital Content, Digital Text, Digital Skills.

Abstract: El Ministerio de Educación de Italia ha promovido, desde 2013, el uso de textos digitales o mixtos (impresos-digitales) en el aula por medio de una ley (Lex 128/2013). Desde entonces, la adopción del libro de texto no es obligatoria en nuestro país: las escuelas italianas, según su autonomía, pueden utilizar materiales didácticos de editorales, recursos educativos abiertos o textos de elaboración propia. La ley da legitimidad a las experiencias de algunas centros educativos italianos que están innovando en el uso de los libros de texto y están implicadas en un proceso de auto-producción de contenidos (libros de texto o CDD, Contenidos Didácticos Digitales). Este artículo describe el trabaj de estos centros educativos dentro de una comunidad de práctica denominada «Avanguardie Educative». Se analizan las creencias y actitudes de los profesores sobre «estudio», «libro de texto» y «textos digitales» para obtener aspectos innovadores y también para observar las dificultades y obstáculos durante el proceso de innovación, no siempre bien estudiado.

Keywords: Libro de texto, Auto-producción, Contenido Didáctico Digital, Texto digital, Competencias digitales.

1. Introducción

In this contribution we report the early results of a three year research project on the auto-production of textbooks and digital educational content in Italian primary and secondary schools. This research is aimed to investigate the pedagogic approach behind different practices involving teachers and students in the creation of educational content. These practices range from the creation of content that integrates the school textbook to «alternative adoption» meaning the authoring of independent textbooks that entirely replace publisher texts.

This research is set in a more general background of legislative interventions to adequate Italian schools curriculum and practice to the demands of knowledge society. In the last decade, the Ministy of Education introduced a curriculum reform both for primary and secondary education[1], invested public funds to equip schools digital technology and provided school headmasters with a higher autonomy according to Law n.107, named as «La buona scuola» (The Good School), to support the emergence of new models of schooling with a bottom-up approach.

With specific reference to school textbooks, starting from the school year 2014-2015, their adoption is not mandatory (see note note MIUR No. 2581 of 9/04/2014); adoption is optional and, if carried out, it has to be digital or mixed. Schools can choose not only content from publishers, but also open content (Open Educational Resources), content acquired on the Web, self-produced content.

1.1. Avanguardie educative: a bottom up approach to school innovation

Within this scenario, a group of significant innovation experiences have been developed within Avanguardie Educative, a network of about 600 Italian schools. The network was founded in 2014 by 22 schools (leading schools) in cooperation with INDIRE, a public research institute for educational research, with the common purpose in order to rethink the Italian school model, still strongly classroom-lecture-activity-based and constrained in its rigid organization of time-schedule. Avanguardie Educative is also based on the idea that school innovation spreads and takes roots more effectively if the proposal emerges directly by the parties concerned (Laici, Orlandini, 2016). As a consequence, the network is aimed at favouring the 'emergence' of innovative practices and their dissemination at a national level.

In this scenario, INDIRE and the 22 leading schools joint their efforts to design a process to support this bottom-up approach to innovation. At first, they identified a set shared values for quality education2 and three directions of inquiry: Time, Space and Didactic, that are properly «school time organization», «learning environment» and «innovative teaching practices». The results of this early work has been summarized in a Manifesto that work as reference to frame innovative school practices.

During the year 2014, the 22 leader schools were involved in a series of on site observations conducted by INDIRE researchers with the purpose to identify and validate a first set of innovative practices worth of dissemination. The practices emerged from the observation were subsequently grouped in innovation Ideas

[1] In 2007, the Minister of Education released the Indicazioni Nazionali per il curriculum (National Guidelines for curriculum) a document that set of learning targets and raccomendations to practice a flexibile curriculum in primary and junior secondary schoo. .A similar approach was applied in 2010, when the MOE published national indications for secondary education and vocational training.

including already formalized methods and techniques, adapted to the Italian schooling context, as for example Flipped Classroom (Bennet et al., 2012) or TEAL (Technology Enabled Active Learning) (Dory et al. 2003), but also practices that are particularly transformative for the Italian context such as Disciplinary Labs or «Integration DDC/Textbook». The term Idea should not be intended here in its literary sense, but more as a label used to cluster together different innovative practices with strong similarities about learning strategies, methodology and pedagogic approach.

In the following years the first group of Ideas has been implemented with other practices. Schools within and outside the Movement can submit new innovation Ideas to be added to «Avanguardie Educative» gallery. A panel of selected researchers and teachers from the leader schools periodically evaluate the submissions according to an evaluation protocol, with the aim to identify new innovative practices and provide them with a defined processing path.

1.2. The research and dissemination of innovation «ideas»

When a new pratice is accepted as an innovation Idea in Avanguardie Educative, expert teachers are invited to contribute to a documentation, a guideline for teachers that would like to implement the same practice in their schools. The writing of the Idea's Guideline is intended as collaborative research (Desgagné, 2001) between researchers and teachers. Each Idea corresponds, in fact, to a research group whose task was to define the Idea itself, describe cases, providing a basis for supporting theory, as well as identifying any variants.

Teachers are involved in a reflective practice process to define a descriptive model that renders explicit the teachers practical knowledge (Cochran-Smith, 2008) about a set of similar practices and connected innovation purposes. All the Guidelines must produce a clear definition of the Idea, the pedagogy behind the practice and at least one case study of implementation to allow other schools to replicate (or rather interpret) the practice in their own schools.

Despite this common structure, the research protocol on the Idea may vary according to different practices. The Guidelines are conceived as an ongoing document, that has to be implemented every year, according to the refinement or the revision of the practices and the development of the research. They also work as a reference for tranining and coaching activities directed to schools and teachers that are willing to adopt the innovation Idea. The 'adopter schools' participate in a community of practice within which are provided training sessions and ample space for sharing materials and tools. The aim is to activate a support system among schools in a modality of 'mutual contamination'. This work takes place online, in a dedicated environment that provides for the use of video-conferences, meetings, forums, sources and materials implemented by schools.

1.3. Matching top down and bottom up innovation: the auto-production of textbooks

One of the innovation Ideas in Avanguardie Educative is dedicated to the topic of textbook adoption and auto-production («CDD/Libri di testo», where CDD is for «Contenuti Didattici Digitali» or Didactic Digital Content). This Idea was included in the gallery as the leader schools and INDIRE shared the opinion that publisher textbooks too often play the role of an «hidden curriculum», contributing to a strong persistence of the lecture centered model of schooling.

The alternative adoption of textbooks was also considered of great importance due to a series of legislative initiatives that have been implemented in Italy since 2013, the year in which a review of textbook adoption policies was launched. Starting from the school year 2014-2015, the adoption of the textbook is not mandatory (see note note MIUR No. 2581 of 9/04/2014); adoption is optional and, if carried out, it has to be digital or mixed. Schools can choose not only content from publishers, but also open content (Open Educational Resources), content acquired on the Web, self-produced content.

In the note mentioned above, the Ministry provides schools with instructions on how to adopt textbooks for the 2014/2015 school year and, given the significant innovations introduced, it provides a summary of the entire regulatory framework that schools need to follow. The note refers to the function of the Collegium of Teachers in the choice of textbooks (Article 6, paragraph 1, Law No 128/2013). It is, in fact, the responsibility of the Collegium to deliberate the adoption of textbooks or alternative tools, in line with the POF (Piano dell'Offerta Formativa, Educational Plan), with the school grade and with the spending limit set for each class of course.

Finally, the information on the possibility for schools to produce digital contents, such as integration or replacement of the textbook (Article 6 (1), Law No 128/2013), points out that

> "during school year 2014-2015, [...] schools can develop digital teaching materials for specific disciplines to be used as textbooks and teaching tools for reference discipline; each product is checked by a supervisor teacher who guarantees, with the help of other teachers, the quality of the work, in collaboration with the students of their classes. The teaching work is registered with a license that allows the sharing and free distribution. It is subsequently sent, by the end of the school year, to the Ministry of Education, University and Research and made available to all schools, also using pre-existing digital platforms produced by national school networks and pilot projects of the Digital School National School Plan of the Ministry of Education, University and Research for the Action Digital School Publishing".

Regarding the auto-production of digital teaching materials, specific guidelines are contained in the Annex to Decree No. 781 of 27/09/2013 which sets out a number of important issues. First of all, the relationship between the teacher's activity and the national guidelines for the curriculum (Indicazioni nazionali) via mediation of the textbook: the book has the task of "offering a reference path to educational work, according to the curriculum, thus contributing and ensuring - while fully respecting the autonomy of teachers - the appropriate level of uniformity and standardization of learning paths and learning objectives". Secondly, the theme of «auctoritas» (authority) of the text, linked to the idea of quality: the book must offer "an authoritative, validated exhibition (both authoritative and editorial)". Finally, the question of representation of knowledge: "the fundamental characteristic of the "book form" is related to the ability to organize complex content in a narrative and argumentative structure which therefore does not hide but rather declares and enhances the presence of the voice of the 'author' or 'authors', unitary, organic".

Recently, the topic of «Didactic Digital Content» is treated in a specific chapter of the National Plan of Digital School (PNSD - http://www.istruzione.it/scuola_digitale/allegati/Materiali/pnsd-layout-30.10-WEB.pdf), a programmatic document in support of Law No 107/2015 aimed to introduce

profound innovations in Italian schools. The document refers to the production and diffusion of knowledge, as well as to «digital creativity».

Despite this, a few years after the rules in question, the situation of adoptions in the schools don't show any substantial changes: many schools are adopting both digital and paper textbooks, but it's difficult to establish to what degree digital texts are actually used. On the other hand in many schools a new interest in the auto-production of didactic materials is spreading.

2. Method

During the process of observation and discussion that took place among the Avanguardie Educative leader school, INDIRE indentified 9 schools practicing the auto-production of educational content with different approaches and involved all of them in a research process aimed to:

1) Describe the different alternative adoption practices.
2) Investigate the pedagogic approach behind auto-production.
3) Investigate the model of authorship behind the auto-production of educational content and textbooks.

The research process has involved 4 INDIRE researchers and 17 teachers, representing a wider number of colleagues practicing auto-production in their schools. Among the 9 schools selected, 5 were primary and junior secondary schools, 4 senior secondary schools including vocational education. In the following paragraphs we report the methodology and the main outcomes emerging from this research from 2015 to 2017.

2.1. Literature review

INDIRE researchers engaged a review of scientific literature considering the phenomenon of auto-production from two different prespectives: 1) the Italian pedagogic tradition in the last 60 years 2) the international scenario.

The reviews was intended to frame the pratices of partecipating teachers into a diachronic and synchronic background and to focus the main dimensions to investigate with teachers within a reflective practice process in the following phase.

The literature review pointed out that textbooks is still a pillar of the model of schooling, a powerful tool that structures both curriculum and teachers' practice (Choppin, 2008), but it has also been the object of strong criticism by the supporters of an active pedagogy as it limits students learning to a mnemonic and ripetive process (Pettini, 1974). According to some authors (Hutchinson and Torres, 1994) the idea of the textbook working as an «hidden curriculum» can constitute a barrier to the innovation of school practice. Criticism is also directed to the quality of publisher textbooks: rethorics and learning activities are often considered too far from students' language and life experience and supportive of a conservative representation of culture (Eco, 1972). INDIRE researchers' focused on this criticism as a starting point to discuss the motivation for auto-production of teachers involved in the research.

The literature review also pointed out the role of digital technology in the «remediation» (Drechsler, M. 2011) of school textbook, than UNESCO identified as key process to innovate school (see F. Richaudeau (1979), Conception et production des manuels scolaires. Paris: UNESCO.) As digital technology seems to enable both the

spread of auto-production and a more general exploration of textual organization and format, INDIRE researchers intended to investigate this aspect with teachers.

2.2. Investigating pedagogy and patterns of textbook auto-production

Teachers were involved in a reflective pratice process to help them explicit not only procedures and practical advices for adopters, but also the pedagogic vision behind the practice. To do this, INDIRE researchers set an individual interview and series of face to face and online discussions sessions in which teachers were invited to share a narrative presentation of their experience to the research community (Clandinin, 2007 Mortari 2007, Mortari 2010).

Both the interview and the sessions were recorded and subsequently analysed by INDIRE researchers (Mayring, 2014) to understand which were the recurrent elements. Trascription were analysed according to two main sets of category:

- Practice: cointaing aspects related the authoring process, students involvement, classroom practice, integration with other auto-produced or publisher educational content.
- Pedagogy: containing aspects related to motivation for authoring, values and beliefs on learning and study practice, textbook function, digital technology.

The result of this analisys - providing a general description of the alternative adoption idea and its «variants» - were presented in focus group sessions to be validated with teachers.

2.3. Teachers as author of textbooks

In the second phase of our research we wanted to investigate if auto-production was a significant practice to overcome the «hidden curriculum» that literature claimed to be related to traditional publisher textbooks. To do this, we decided to understand how the authorship educational content affects the role of teachers in curriculum design and if it is connected to an active attitude of a teacher toward content knowledge representation.

This investigation was performed through questionnaire, administered online, structured in four open ended sections: a narration of the authoring experience, a reflection on the organization of curricular content, constraints and possibilities in the authoring practice. Questionnaire answers, almost 80 items, were analysed with a content analysis procedure (Mayring, 2014): 50% of those answers were from experiences of auto-production by teachers (see cluster number 1), 29% from schools that adopt publisher textbooks and production supplementary content (see cluster number 3), and 21% from experiences of collaboration between students and teachers (see cluster number 2). Answers were categorized according to four main functions of the textbooks as identified by Alain Choppin (2003):

- referential: permits the establishment of a relationship between the daily teaching activity in the classrooms and the national curriculum, among the work of the teacher, students' tasks and the curriculum topics;
- instrumental: the book is conceived as the fundamental teacher tool, more useful for teaching than for learning;

- ideological and cultural: the book is seen as a diffusor of values, viewpoints, methodological approaches, even beyond the author's intentions;
- documentary: indicates the textbook as a collector of documents, of primary sources of knowledge, which, in addition to the interpretive synthesis of the voice of the author, provides the students with the basis for the construction of personal learning routes (Anichini 2015).

3. Results

3.1. Three different clusters of alternative adoption

In Italy, for many years, there have been some significant examples of schools that have been experimenting auto-produced textbooks. Such a phenomenon that has its origin in our national tradition and, with the revival of the methodology of Célestin Freinet started to spread from the sixties to the eighties (promoted by the MCE movement), is still ever present, particularly in Italian primary schools. At the moment, this kind of tradition has been revived and reinterpreted by Avanguardie Educative's schools, with the introduction of some fundamental changes.

The adoption practices carried out in these schools proved to be very different. Some schools chose not to adopt textbooks proposed by publishing houses, but, rather, produce their own. Others placed emphasis on familiarising students with the activity of composition of singular parts of texts, thus encouraging creativity, without eliminating traditional adopted texts.

These practises, analysed by researches, were summarized into three fundamental categories:

1) *Adoption of textbooks produced by teachers.* One the most important models is the «Book in Progress» activity promoted by ITI Majorana of Brindisi (http://www.bookinprogress.org/), which for years has been coordinating and promoting the work of a large group of teachers committed to the production of teaching manuals to adopt in their own classrooms. «Book in Progress» acts according to the law of scholastic autonomy (Law No. 59/1997 - DPR 275/1999) to promote teacher professional development and the students' personalised learning curricula. The activity of the Network is widespread throughout the country and very operational. The motivation behind the rejection of textbooks offered by publishers lies in the evaluation of the texts themselves, often considered inadequate to students' needs, far away from the context of real school life. The Book in Progress experience is not unique: in France, many disciplinary groups of teachers try to produce their own manuals (Bruillard, E., Villemonteix F., 2011); in Asturias, since 1994, the Grupo Eleuterio Quintanilla has promoted a general reflection on didactic practices and on the need to integrate existing, unreadable and unattractive texts for students with self-produced materials (Castiello, 2015); in Brazil, the experience of the group of Landless Workers' Movement that produced country-specific books is documented by a group of researchers (Braga García, 2015). In some cases the contribution of teachers consists of the experimentation and evaluation of contextualized materials produced by research groups, proposed as 'open content' that allows teachers to adapt it to their classrooms needs (ie «Ulla Elemental project», promoted in Galicia) (Rodriguez Rodriguez, J., García García, I., 2015).

2) *Adoption of digital teaching resources produced by teachers and students.* The experience has been carried out by an institute of the province of Piacenza, which has launched the proposal to adopt digital resources self-produced by teachers with the collaboration of students, limited to certain curriculum disciplines (only Music and Geography for the first year and also Italian for the second), to contain the spending ceiling in accordance with the law. (The Libr@ project of IC Cadeo and Pontenure is the reference model[2]. In this case teachers consider shared writing as an important educational opportunity. Behind auto-production lies the idea of the book becoming a «learning laboratory». The aim is to engage students in a process of active construction of knowledge, which seeks to create a cultural product as a pretext to enable in-depth learning paths (Freinet, 1964). Teachers who choose this kind of practice claim that auto-production supports and promotes teamwork, encourages discussion and planning, thus providing a dynamic environment for cognitive and social growth of students. These beliefs have been sustained by a series of studies that consider the "writing" as a "social practice and a constructive cognitive process" since the 1990s (Flower and Higgins, 1991). This practice has been in use for a few decades in some Italian schools, according the approach of the Educational Cooperation Movement (MCE), and it is present in other countries, as evidenced by the Brazilian experience documented by Braga and Schmidt, related to the production of a history manual with classes (Braga García, T. M., Schmidt, M. A., 2015).

3) *Self-production of integrative digital content.* This is a more cautious line in many schools where, while retaining the manuals of traditional publishers, it does not however renounce the production of digital content with the class, regarding particular aspects of the curriculum (disciplinary or interdisciplinary). This kind of activity is now very widespread in many schools, carried out by individual teachers, almost 'handcrafted', rather than as system activity provided by the school curriculum (Piano dell'Offerta Formativa, Educational Plan). This practice is also bound to the develpment of students' digital literacy. Partecipating in writing process of a digital educational content, students can refine the «digital competence» indicated as fundamental by European Commission and defined as a set of skills that include «the ability to search, collect and process information and use it in a critical and systematic way, assessing relevance and distinguishing the real from the virtual while recognising the links. Individuals should have skills to use tools to produce, present and understand complex information and the ability to access, search and use internet-based services. Individuals should also be able use IST to support critical thinking, creativity, and innovation» - Recommendation of the european parliament and of Council, (2006/962/EC). The students can also reflect on the main features of a kind of writing proposed also by OCSE-Pisa document (PISA 2012). Before measuring student reading skills, both on paper and digital media, the OCSE Pisa has defined what must be intended with «digital text». In doing so, OCSE experts identified three features that indicate the passage from the one to the other support:

   - From linear arrangement to networking and hyperlinking.
   - From illustrated text to multimedia and augmented reality.
   - From authored texts to online discussion and social networks.

[2] http://www.istitutocomprensivocadeo.it/progetti/progetti-tecnologici/progetto-libr

3.2. Alternative adoption pedagogy: shared views of teachers

These different clusters still have common qualities emerged during the focus group sessions. Teachers considered auto-production as a means for facilitating student learning and study practice. Most of the participating teachers agreed that published textbooks were inadequate for their students, distant from their actual needs and learning styles. They mostly complained about the language used, exercises and content organization.

Auto-produced content was also a resource to modify this organization, selecting different content, adding topics of interest. Teachers who engaged students in auto-production shared these motivations but also added a different perspective as they considered didactic digital content as a documentation of the learning process, a resource for student reflection and metacognition by means of collaborative writing. Finally, all teachers agreed that auto-production was connected to digital technology and with a common interest for digital writing (Anichini, 2014), which allows a different representation of knowledge.

The analysis of the different experiences of auto-production of digital contents carried out by innovative schools in our national territory has allowed us to discover that each practice presents specific characteristics and involves different actions with a more or less burdensome commitment and a different impact on the organization, but it includes some common elements:

- A shared idea of 'textbook and studying'.
- A shared idea of digital text and writing process.
- A shared idea of authentic tasks.

Even if many teachers involved in the research still considering it as a sort of «Linus' blanket» as someone said, textbook has often been seen as too much of a constraint by those who conceive teaching as a creative act, and learning as an act of seeking answers and questions. Its limits are related to vagueness and distance from the context of use. Other times, they turn out to possess an inadequate use of language, often specialistic and far from the modes of student communication; or the topics are too 'weightily' presented on the page.

According to the authors of the «Avanguardie Educative» Guidelines, the textbook has to be a sort of «canvas» that guides class activity and has to be populated by contents bound to the particular context of the school. The kind of textbook prefigured by «Integration DDC/Textbooks» group is like an 'unfinished book', an 'open book', very close to a good example of a digital one. In this perspective they consider digital technology a resource environment, which allows a constant review of study practices. According the teachers' opinion the digital textbooks proposed by publishers are not yet ready to guarantee real innovation, as they are not able to decisively and positively influence the general renewal of didactics. In particular, publishers seem to have not yet managed to reflect upon the fundamental features of new texts, digital texts:

1) the close relationship between reading (understood in the broadest sense of the term) and writing, such as the ability to intervene on a given text or even rewrite the contents, by contributing, moving and adding elements;
2) the custom with new languages, with a set of complex expressive forms that integrate alphabetical text, images and video;

3) the potentially "collective" uses of the text, through social reading and writing sharing practices that the digital support can make habitual.

The experience of the schools in our national territory, which are experimenting the production of new texts, is a very important activity aimed at finding the most appropriate solutions to students' needs and learning. It is an opportunity to reflect on how digital support potential can really help to improve the school, especially from a student perspective. For these teachers «studying» means first of all "rewriting knowledge", with an active investment by every single student, but also and above all within a working community represented by the class

Furthermore, designing and producing some "pages" of a hypothetical study text means that students are confronted with a range of skills that involve information retrieval, understanding and interpretation of collected data, formulating hypotheses and concepts, formalization of them and their representation in the form considered to be more appropriate to their transfer. It also means experimenting new forms of writing. In this sense, the richness offered by digital support, while still integrating paper support, is very useful, especially for the opportunities it offers for elaborating and creating content. Teachers also sustain the importance of some specific behaviour bound to the new text writing practice that implies collaboration among students and teachers, as well as the use of innovative procedures, didactic tools and languages. This kind of writing is not individual nor spontaneous; it necessitates an important design phase and requires a shared effort for its negotiation; it is social, complex, rich in expression and communication.

Approaching this activity presupposes defining objectives and aims, data gathering, analysis, design, some knowledge about layout and editing, all shared among different actors. It means penetrating behind the «theatre curtain» of textbooks (both paper and digital) in order to understand the underlying structures. This means becoming a good interpreter of such texts in a speculative game where the interpretation and writing are two faces of the same coin. It means also, for students, being in possession of contents, tools, study methods in order to overcome the traditional learning «by heart method» and being able to ask the text questions. It allows students to be «good craftsmen of knowledge».

The production of digital content (or textbook) represents the opportunity to adjust the curriculum according to specific needs of a particular context, that is to adapt the national curriculum to the 'emerging curriculum', which is deeply bound to the demands and characteristics of the class. The custom of using DDC production allows the marginal themes of the curriculum to be addressed. These are not always covered by textbooks, but are, in some way, related to the direct experiences of students. For example many practises of auto-production are based on local history curriculum, and they afford themes that are not present in traditional history manual. The production of DDC is also a good solution to allow students to express their ideas about their reality, reestablishing a more authentic relationship with the world.

3.3. The authorship of textbooks and educational content as curriculum design practice

In relation to the authorship practice of the teachers, analysed through the four functions theorized by Choppin, results pointed out that globally the «ideological function» was the most common.

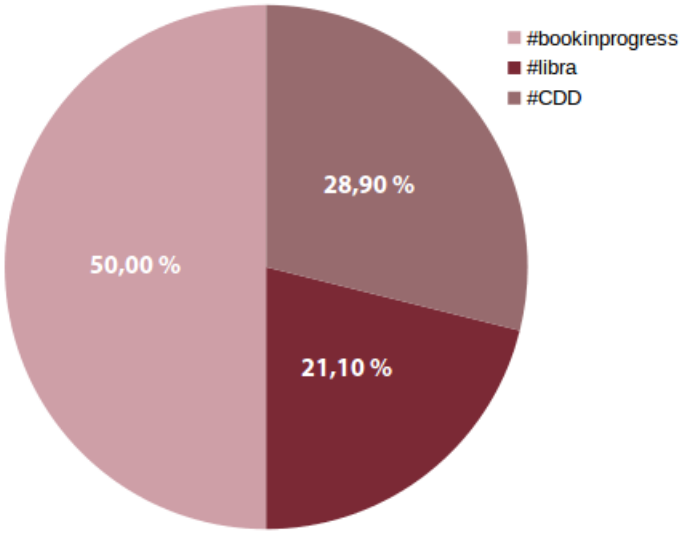

Figure 1. The distribution of the four textbook functions according to Choppin categories.

Some differences can be found at the level of different clusters. The ideological functions prevail widely for auto-production carried out by teachers (86.4%), while supplemental production of educational content is related to a wider persistence of the reference function (see fig. 2 and 3).

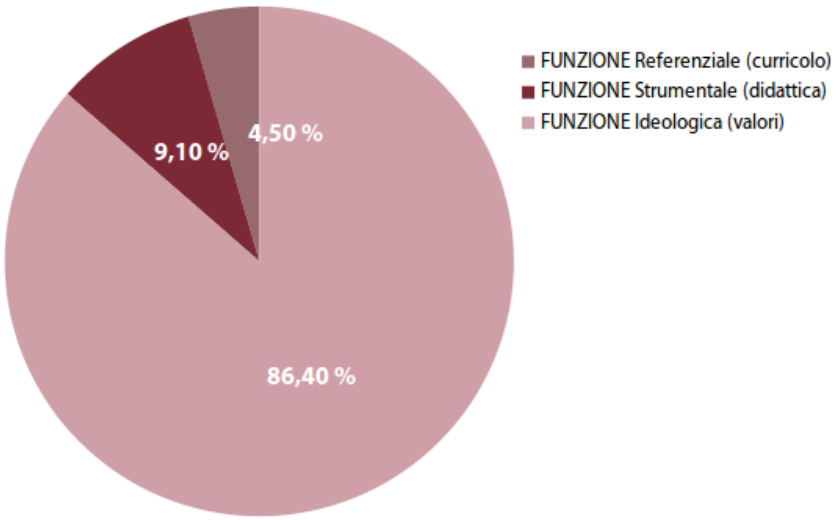

Figure 2. Functions for the self-produced practice in a distributed network of teachers cluster.

In the cluster of auto-production practices engaging students, the ideological function is balanced by the documentary function, coherently with the purposes stated by teachers in the brainstorming.

The global result seems to show that the authoring educational content is often a resource for gaining autonomy in the representation of content knowledge. In other words, it seems that auto-production is a way «for tailoring» the curriculum, beyond the more standardized approach of publishers' textbooks.

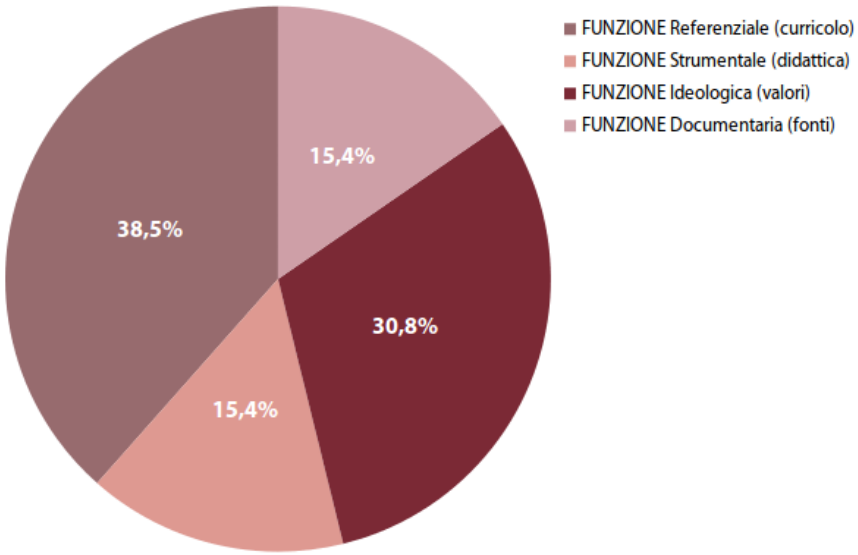

Figure 3. Functions for the self-production of additional educational digital content cluster.

This is particularly interesting if we consider that in Italy, especially in primary and lower secondary schools, there isn't a national curriculum per se. Each school, in its autonomy stated by the law (Law No. 59/1997), is responsible for the curriculum design according to a set of National Guidelines (Indicazioni nazionali per il curriculum, 2012) that fix common learning goals. As a matter of fact, the adoption of publisher textbooks often put a strong constraint upon this autonomy, as they work as a hidden programme, a 'curriculum de facto' in teacher practices. As a consequence, auto-production may be a resource for innovation as an enabling practice for a full application of school autonomy.

Questionnaire analysis, as well as some in-depth interviews conducted later with some of the teachers of the 9 schools involved, finally allowed us to define further contact lines between individual experiences and to identify some common elements in the different practices.

4. Conclusion

The research carried out by the «DDC/Textbook» Group has allowed us to describe the most innovative practices of auto-production of textbooks conducted our national territory and to formalize some key concepts that can help schools to orient their work. For the first time we have classified some different clusters of alternative textbook adoption in our country, describing practices as variants («varianti») of a same idea. Furthermore, research has provided a range of reflections related to:

- The functions attributed to the textbook by the teachers and, related to this, the convictions that motivate them to opt for the alternative adoption and the auto-production of textbook or of didactic digital contents.
- The teachers' beliefs about «studying» and «text» that represent the basis of their innovative didactic practices, and are strictly bound to their conception of teaching.

- The teachers' awareness of the emergence of new forms of textuality, that implies new ways of reading and writing, deeply linked to digital supports. They had the opportunity to reflect on the necessary integration of different forms of textuality and on the quality of these texts.

This work is only the first step in an ongoing investigation and it intends to proceed to further explore the relationship between the innovative practices of the use of the textbook and a new concept of curriculum that many schools are developing, in accordance with didactic and administrative autonomy. In particular we are going to investigate the relationship between the auto-production of DDC and both the 'emergent curriculum' (that means a revision of the curriculum according to students beliefs) and the 'contextual curriculum' (that means a revision of the curriculum in line with some specific aspects of the context in which the school is located). It means trying to explain what exactly teachers intend when they sustain that DDC writing represents the opportunity «to go in depth» in the curriculum.

Furthermore we are convinced that now an in-depth study in the disciplinary dimension of the auto-production of DDC is fundamental: this would represent an other direction of research, very useful to intercept different practices according to different epistemological aspects of subjects.

Finally, this research, which has been considering teachers as actors of innovation, intends to involve also students in the next steps; with the intention of getting feedback, also from them, about the use of the textbook and the production of digital didactic content.

5. Acknowledgments

We thank the schools: IC «Baccio da Montelupo» - Montelupo Fiorentino (FI); IC «Bruno da Osimo» - Ancona; IC di Cadeo e Pontenure - Roveleto di Cadeo (PC); IC «San Giorgio di Mantova» - Mantova; IC «Giannuario Solari» - Loreto (AN); IISS «Ettore Majorana» - Brindisi; ISI «Sandro Pertini» - Lucca; ITE «Enrico Tosi» - Busto Arsizio (VA); IISS «Carlo Emilio Gadda» - Fornovo di Taro (PR); IC «Baccio da Montelupo» - Montelupo Fiorentino (FI); IC «Bruno da Osimo» - Ancona; IC di Cadeo e Pontenure - Roveleto di Cadeo (PC); IC «San Giorgio di Mantova» - Mantova; IC «Giannuario Solari» - Loreto (AN); IISS «Ettore Majorana» - Brindisi; ISI «Sandro Pertini» - Lucca; ITE «Enrico Tosi» - Busto Arsizio (VA); IISS «Carlo Emilio Gadda» - Fornovo di Taro (PR).

6. References

Anichini, A., Chipa, S., Parigi, L. (2016) *Auto-produced Textbooks: Different Approaches From The Analysis Of The Experience Of Innovative Italian Schools*, EDULEARN 16 Proceedings, pp. 5029-5036.

Anichini, A., Bucciarelli, I., Chipa, S., Morani, R., Parigi, L., Taddeo, G. et al. (a cura di), (2016) *Avanguardie educative. Linee guida per l'implementazione dell'idea «Integrazione CDD/Libri di testo»*, Indire, Firenze.

Anichini, A. (2014). *Digital writing. Nel laboratorio di scrittura*. Rimini: Maggioli Editore.

Anichini, A. (2015). *Riscritture digitali e libri di testo*. Form@ re-Open Journal per la formazione in rete, 15(1), 73-86.

Bennett, B., Spencer, D., Bergmann, J., Cockrum, T., Musallam, R., Sams, A. (2012). *The flipped class manifes*t. The Daily Riff.

Braga Garcia, T. M. (2015). *Textbook production from a local, national and international point of view*. In Jesus Rodriguez Rodriguez, Mike Horsley, Susanne V. Knudsen, 10th International Conference on Textbooks and Educational Media, IARTEM.

Braga Garcia, T. M., Schmidt, M. A. (2015). *The Cultural Experience as a reference to the production of textbooks by teachers and children.* In J. Rodriguez Rodriguez, M. Horsley, S. V. Knudsen, 10th International Conference on Textbooks and Educational Media, IARTEM.

Bruillard, E., Villemonteix F. (2011). *Les communautés en ligne d'enseignants, nouveaux modes d'organisation et de production.* Mercredis de Créteil. Université Paris VIII.

Castiello, C. (2015). *Libros de texto y materiales alternativos: La experiencia del grupo Eleuterio Quintanilla*. In J. Rodriguez Rodriguez, M. Horsley, S. V. Knudsen, 10th *Internationl Conference on Textbooks and Educational Media*, IARTEM.

Choppin, A. (1992). *Le manuels scolaires : histoire et actualité*. Paris: Hachette Éducation.

Choppin, A. (2003). *Former les enseignants au choix et à l'utilisation de leurs manuels: histoire et actualité*. In B. Germain, I. Le Guay & R. Nadine (eds.), Le Manuel de lecture au CP: réflexions, analyses et critères de choix (pp. 12-16). Paris: ScéREn, Savoir Livre

Choppin, A. (2008). *Le manuel scolaire, une fausse évidence historique*. Revue d'histoire de l'éducation, INRP, n° 117, 19 juin 2008.

Cochran-Smith, M., Feiman-Nemser, S., McIntyre, D. J., & Demers, K. E. (Eds.). (2008). *Handbook of research on teacher education: Enduring questions in changing contexts*. London: Routledge.

Desgagné, S., Bednarz, N., Lebuis, P., Poirier, L., & Couture, C. (2001). *L'approche collaborative de recherche en éducation: un rapport nouveau à établir entre recherche et formation*. Revue des sciences de l'éducation, 27(1), 33-64.

Dori, Y. J., Belcher, J., Bessette, M., Danziger, M., McKinney, A., & Hult, E. (2003). *Technology for active learning*. Materials Today, 6(12), 44-49.

Drechsler, M. (2011). *Manuels scolaires et albums augmentés: Enjeux et perspectives pour une pédagogie du 21e siècle*. Les Éditions Numeriklivres.

Eco, U., Bonazzi, M. (1972). *Introduzione a I pampini bugiardi. Indagine sui libri al di sopra di ogni sospetto: I testi delle scuole elementari*. Rimini: Guaraldi.

Freinet C., (1964). *Plus de manuels scolaires! Plus de leçons*! «L'éducateur», November 1964

F. Richaudeau (1979), *Conception et production des manuels scolaires*. Paris: UNESCO.

Hutchinson, T., Torres, E. (1994). *The Textbook as Agent of Change,* ELT Journal n. 48/4, 1994, pp. 315-328

Laici, C., & Orlandini, L. (2016). «*Avanguardie Educative»: paths of innovation for schools*. Research on Education and Media, 8(1), 53-61.

Mayring, P. (2014), *Qualitative content analysis: theoretical foundation, basic procedures and software solution*. Klagenfurt. URL: http://nbn-resolving.de/urn:nbn:de:0168-ssoar-395173_

Moeglin, P. (2010). *Les industries éducatives, Que sais-je?,* Paris: PUF

Mortari, L. (Ed.). (2010). *Dire la pratica: la cultura del fare scuola*. Milano: Bruno Mondadori.

O. E. C. D. (2012). *Assessment and analytical framework: Mathematics, reading, science, problem solving and financial literacy*. 2013-2-21].http://www.oecd.org/pisa/pisaproducts/pisa2012draftframeworks-mathematicsproblemsolvingandfinancialliteracy.htm

Pettini A. et al. (1974), *Il libro di testo nella didattica moderna.* Firenze: La Nuova Italia.

Rivoltella, P. C. (2013). *L'agire didattico: manuale per l'insegnante*. Brescia: La Scuola.

Rodriguez Rodriguez, J., Garcia Garcia, I. (2015). *The Electaal Elemental Education Project*. In J. Rodriguez Rodriguez, M. Horsley, S. V. Knudsen, 10th International Conference on Textbooks and Educational Media, IARTEM.

Roncaglia, G. (2016). *Ruolo ed evoluzione dei libri di testo.* In C. Reale (eds.). *Il libro al centro. Percorsi tra le discipline del libro in onore di Marco Santoro.* Napoli: Liguori.