France

Country Report on ICT in Education

Available http://www.eun.org

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2018

1. THE EDUCATION CONTEXT

1.1 Key educational challenges and priorities

From 2012 to mid-2017, the government took a series of measures concerning ICT in education.
In May 2015, after a national consultation, the former president of France announced the launching of the digital plan to generalize digital education.

More information at is available:

http://ecolenumerique.education.gouv.fr/

http://www.education.gouv.fr/cid79643/une-strategie-ambitieuse-pour-faire-entrer-l-ecole-dans-l-ere-du-numerique.html
The réseau d'éducation prioritaire are schools located in sensitive zones (the infamous banlieues).

The government's proposal is that, in such schools, the classes at the first two levels of primary education (CP & CE1) are to be divided into. So when, for instance, in a school, you had a CP class of 24 pupils, it will become two classes of 12 pupils each

Since September 2017, the government has announced a new plan called "l'école de la confiance" - Gaining confidence at school and in school. The Plan focuses on the following goals:

1. 100% of students master basic skills (reading, writing, math, social skills such as respect for others)
2. Divide the CP (1st year primary school) and CE1 (2nd year primary school) classes, so each will have half the amount of pupils. This will be done in priority education network- located in disadvantaged areas where
3. Mobilization for books and reading- reinforcement of pupils' reading skills by encouraging reading for leisure and learning
4. Reinforcement of school structure and opening school culture towards more inclusive education, placing schooling of students with disabilities as one of the top priorities.
5. Continuity and accessibility to quality educational services in rural areas and overseas territories
6. Flexibility and more autonomy given to schools and local education institutions in the organization of school time
7. Securing schools and school populations- making schools safer for teachers and pupils
8. Investing in early childhood education and care- mainly supporting language development in kindergartens with disadvantaged population.

9. Flexibility and enrichment of upper secondary education- providing a multiple educational paths for pupils and more open, autonomous and personalised support. Bilingual classes are re-established with teaching of Latin and Greek and more interdisciplinary approaches are being implemented.
10. Boost the number of secondary school- baccalaureate graduates
11. Invest in vocational education and training and boost the rate of success and graduation.
12. Develop the culture of evaluation
13. Provide more opportunities for teachers' professional development
14. Better support for students: schools to provide support in homework in order to increase course completion rate
15. Bring culture and arts at the heart of the school culture
16. Student welfare: provide adequate knowledge regarding pupils' health and invest in sports activities
17. Strengthen dialogue with parents
18. Open School to Europe and the world

More information at is available at: http://www.education.gouv.fr/cid119317/annee-scolaire-2017-2018-pour-l-ecole-de-la-confiance.html (in FR)

1.2.   Education Reforms

September 2016: the common base of knowledge skills and culture
The common core of knowledge skills and culture as implemented at the beginning of the new school year in September 2016: 5 domains have been redeveloped to teach students the best methods of acquiring the knowledge, skills, and culture of the Common Core. The areas range from Languages for Thinking and Communicating, Methods and Ways for Learning, Forming the Person and the Citizen, Natural Systems and Technical Systems, to Representations of the World and Human Activity.
2 key pillars concern digital citizenship: "Methods and Ways for Learning" and "Forming the Person and the Citizen".

More information at:

In English:

http://eduscol.education.fr/cid61050/the-common-core-of-knowledge-and-skills.html

In French:
http://www.education.gouv.fr/cid2770/le-socle-commun-de-connaissances-et-de-competences.html

In September 2016: implementation of the 2015 reform of lower secondary schools with new curricula took place, focusing on the following:

1. In the 2nd, 3rd and 4th year of lower secondary education, more time is dedicated to personalized support and small group sessions with an emphasis on interdisciplinary practices; this time represents 20% of in front of pupils of a teacher's time. (EPI = Practical Interdisciplinary Teaching)
2. An emphasis is put on the development of digital competences, not only the use of digital competences but also the acquisition of landmarks and critical thinking for a new digital culture
3. Media and information Literacy is integrated in all curricula
4. Coding
5. Learning a second language starts in the 2nd year of lower secondary education.

More information is available at (in FR):
http://eduscol.education.fr/cid87584/l-organisation-du-college.html

http://www.education.gouv.fr/cid88073/mieux-apprendre-pour-mieux-reussir-les-points-cles-du-college-2016.html#La_reforme_du_college_2016_en_une_infographie

2. DIGITAL EDUCATION POLICY

2.1. National/ regional digital education policies

In November 2017, a third call for proposals entitled "Digital lower secondary schools and pedagogical innovation" took place aiming at equipping all the students in their 1st and 2nd year of lower secondary school year with digital resources and IT equipment.

The "Collèges numériques" or "Digital Schools" project is a collaboration between the Ministry of National Education, local education and administrative authorities, the General Commission for Investment (CGI) and investment program for the future.

3800 digital schools have been equipped so far, they represents a total number of 122600 students.

The project has three main goals:

1. Show the practical benefits of digital technology for students, teachers and families;
2. Integrate digital technology into everyday life in the school and the educational community;
3. Promote the massive use of digital technology in all the disciplines for the academic success of all the students

The project is based on the following actions:

1. A commitment to provide equipment (e.g. high speed internet, tablets for students and interactive whiteboards for all classes);
2. A teaching team heavily involved in the use of digital technology;
3. A digital learning project shared within the school by several school members
4. A willingness to try new uses. It is based on the following guidance:
   - monitoring and assessment throughout the year and over time;
   - training for the teaching staff;
5. An assessment of benefits. The Directorate for strategic foresight and evaluation has launched evaluations to measure the impact using ICT in the classroom. Each local authority measures the impact of the digital within the calls for tenders procedure according to their needs and to the context.

For more information (in FR, EN, ES): http://eduscol.education.fr/cid72342/colleges-connectes.html

2.2.   Responsibilities

1. National level

At the Ministry level, la Direction du Numérique pour l'Education" (DNE) the Directorate of Digital technologies for Education is responsible for matters related to ICT. It aims at:

- Encouraging teaching practices using ICT;

- Developing school equipment;

- Creating networks;

- Teacher training;

- Helping creation, production and distribution of multimedia resources;

- Supporting the product and services industry

- Establishing partnerships and agreements with regional authorities and companies

- Preparing, giving a framework and implementing the guidelines for the development of ICT for educational purposes in schools.

2. Regional level

The "*academies*", regional structures of the Ministry of Education, are in charge of implementing national directives and policies. The regional education authority gives impetus to the development of Information and Communication Technology. It

coordinates the different levels of teaching and establishes partnerships with local and regional authorities, companies, other administrations and organizations.

The ICT advisor (DAN : Délégué académique numérique) oversees the actions related to ICT in regional education authorities and coordinates the various networks of people and partners involved in ICT, notably the network of subject leaders and the network of persons dedicated to primary education concerned with ICT. The ICT advisor is appointed by the representatives of the minister (recteurs).

There are 30 local education authorities in France and each local education authority" covers several territorial subdivisions (départements).

In France, primary schools (from age 2 to 11) are linked to the town council, whereas lower secondary schools (from age 11 to 15) depend on the territorial subdivisions and upper secondary schools (from age 15 to 18 plus some post-baccalaureate sections) come under the regional council's authority. Primary school buildings, equipment and digital services are funded by town councils. *Collèges* (lower secondary schools) and *lycées* (upper secondary schools) buildings and equipment are respectively funded by *the* territorial subdivisions (départements) and (territorial divisions (régions). As concerns digital services, the responsibilities are shared between local governing authorities and the central government.

More information is available at (in FR with some pages in EN):

http://eduscol.education.fr/cid57069/reseaux-et-interlocuteurs-du-premier-degre.html

http://eduscol.education.fr/cid57283/reseaux-et-interlocuteurs-du-second-degre.html

http://eduscol.education.fr/pid26435/enseigner-avec-le-numerique.html

2.3. Specific digital education initiatives

a. New learning spaces

The Archicl@sse project:
Within the framework of the digital plan for education (since May 2015), the dissemination of digital tools in schools and the desire to develop innovative pedagogical approaches question the possibilities of organizing differently the spaces within the school.

The Archicl@sse[1] project, initiated by the French Ministry of National Education, Higher Education and Research, aims to draw up guidelines that will enable school stakeholders to re-think school architecture to take account of technological innovations, infrastructure options, and new teaching strategies.
The project addresses two questions:

- For new schools, how can we combine active pedagogy integrating digital technology with intelligent school architecture and design?

- For older schools, how to teach in the 21st century, in classrooms and schools inherited from the 19th century?

Numerous examples of school renovation or new builds are emerging and demonstrate the need for an institutional framework for decisions on space design and utilization that meet the different usage needs (teachers, pupils, institutions, parents, administrative officers). With the classical rectangular format becoming unsuitable for mobile furniture, connected devices and collaborative work, rethinking school architecture becomes essential.
The website dedicated to the project (to be online at the beginning of 2018) should be able to meet these needs, identify the important questions that officials must address in relation to school creation or renovation, and recognize the importance of involving teachers and their pupils in a participative decision-making process.

Some high schools are developing their fablabs.

LAB CDC – caisse des dépôts

In 2016, the Deposit and Consignment Fund along with the Ministry of Education, Higher Education and Research and the Association of Mayors and representatives of inter- municipal cooperation in France, the council which gathers the French Departments and the French Régions launched a call for expressions of interests dedicated to the transformation of spaces in schools, (from nursery school to high school). The aim is to experiment with innovative arrangements of educational spaces adapted to pedagogical practices, new learning needs related to a digital society in the world of today and tomorrow and to draw from it good practices to disseminate.

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[1] http://eduscol.education.fr/cid84395/archicl@sse-impact-du-numerique-sur-l-architecture-des-ecoles-et-des-etablissements.html

Five projects were selected and supported over a period of 8 months. Innovative solutions were tested in-site in February 2017, in close collaboration with users and the educational community.

b. *Game based education*

In terms of serious games, the Ministry supports teachers, industrials and local authorities through two main actions:
- A portal «Apprendre avec le jeu numérique » (Digital Games for Learning) http://eduscol.education.fr/jeu-numerique/#/

This portal provides contextual elements to digital games practices and shows the industrials the indispensable to be taken into account during the production of serious games based products.

- A specific support to industrials for the industrial production of serious games (whether through a precise development framework or through a commission supporting the projects initiated spontaneously by industrials)

Parents and teachers are targeted so as to legitimate the pedagogical use of serious games, local authorities are targeted so that they can engage in the acquisition of those serious games.
Actions are implemented at national level, but the Regional Educational Authorities are entitled to have their own spaces (for example the « Académie de Montpellier »)

http://www.ac-montpellier.fr/cid89726/jeux-serieux-et-mondes-virtuels.html

https://jeuxnumeriques.ac-montpellier.fr/

France has an interdisciplinary approach of serious games and they concern all the subjects whether in lower secondary school or higher secondary school

c. *Implementation of computing, coding, computational thinking initiatives*

Coding is part of the curricula from level 1 to level 3 (ISCED= pupils aged 6 to 18) according to the different programs
It is not a specific subject in itself since France has an interdisciplinary approach.
The aim is to encourage problem solving, stimulate logical thinking, and develop key competences.

It is usually integrated in subjects such as Mathematics or Design and Technology in upper secondary education.

d. *Self- or peer assessment tools/frameworks*

The "B2I" : The Internet and Information Technology Proficiency Certificate

See section 3.1 « cadre de référence des compétences numériques »

e.   Tests (ICT or not ICT based)

Higher Schools for Teachers = ESP– (Ecole Supérieure du Professorat) were launched in 2013 and encourage young teachers to obtain a certification in digital competencies or support them in acquiring those competencies.

Some teachers' training institutes provide teachers with the possibility to take a certification in digital competencies (example: Regional Education Authority of Créteil - académie de Creteil); others support initial teachers in acquiring digital competencies (example: académie de Paris) in accordance with the "French Framework for Teachers and Teaching professions"

« Référentiel des compétences professionnelles des métiers du professorat et de l'éducation – 2013 »

France is part of the MENTEP project (**MENtoring Technology-Enhanced Pedagogy**) which addresses the need in Europe for teachers able to innovate using ICT in their classroom and for improved data on teachers' digital competence. Based on this premise, MENTEP investigates the potential of an online self-assessment tool to empower teachers to progress in their Technology-Enhanced Teaching (TET) competence at their own pace

2.4. Digital education priorities

Area	High priority	Medium priority	Low priority	Reference to policy action measure (if any)
A: Digital Competence Development				
Developing measures to support digital competence of **future teachers**	X			
Developing measures to support digital competence of **in service teachers**	X			
Developing measures to boost youth **employability and entrepreneurship**		X		
ICT for **accessibility** and **inclusion**: early school leavers, migrants, special educational needs etc.	X			
B: Curricula and Assessment				
Developing **digital competence/media literacy** of students	X			
Developing computer/programming skills/**computational thinking skills**	X			
Developing **key competences** [2]	X			
Developing **21st century skills** (critical thinking, problem solving, communication, collaboration, creativity and innovation)	X			
Assessing with ICT/ICT based exams			X	
C: System-wide innovation				
Developing measures to support **school leaders** in the integration of ICT	X			
Piloting and validating innovative uses of ICT	X			
Mainstreaming ICT in schools				
Monitor and research digital learning in schools				

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[2] See EC Key competences for lifelong learning: digital competence, math science technology, communication in mother tongue, communication in foreign languages, learning to learn, social and civic competences, sense of initiative and entrepreneurship, cultural awareness and expression. http://europa.eu/legislation_summaries/education_training_youth/lifelong_learning/c11090_en.htm

Learning analytics (using digital technologies and data to support learning)	X			
D: Mobile Devices				
Use of tablets	X			
Use of mobile phones		X		
Bring Your Own Device	X			
Cloud computing/services		X		
E: Use of digital learning resources				
Developing educational content repositories/metadata	X			
Supporting the development of open educational content and resources	X			
Supporting the development of educational content/resources provided by publishers	X			
Promoting teachers' use, creation and sharing of educational resources	X			
F: Learning environments				
Developing/adapting flexible learning spaces		X		
Linking formal, non-formal and informal learning using ICT		X		
Providing equitable access to ICT (infrastructure, devices and content)	X			
Providing a safe learning environment to students and teachers	X			

3. INTEGRATION OF DIGITAL TECHNOLOGIES IN THE CURRICULUM

3.1. Digital technology based assessment

The ASSR School Road Safety Certificate – Highway Code test) level 1 (age 14) and level 2 (age 16) is compulsory. Pupils take the exam on a computer with the ASSR software.

Furthermore, few science exams (biology and physics) and technological exams for the baccalaureate have to be taken on computers. *(Evaluation des Capacités Expérimentales-ECE- Assessment of Experimental capacities)*

3.2.   School improvement with ICT

ETIC (Enquête sur les Technologies de l'Information et de la Communication) is an annual national Survey on ICT. It is conducted in primary and secondary schools. It aims to provide indicators on equipment, infrastructure, human resources, digital services, safety, teacher training, and more. The indicators are used as following:

- to organize information about digital technologies in schools

- to analyze the evolution of the situation regarding digital technologies

- to compare ICT policies at different levels (regional, etc.)

- by the local authorities, when they need information before equipping schools.

 ETIC survey: http://eduscol.education.fr/cid56180/plan.html (in FR)

PROFETIC is a survey on the uses of digital technologies by teachers at secondary level: http://eduscol.education.fr/cid60867/l-enquete-profetic.htm (in FR)

3.3.   The curriculum framework

The general national curriculum framework in France is centralized. It is defined at central level and defined for study cycles (3 years for instance). Within the curriculum framework, teachers are relatively free to choose their own pedagogical approach.

More information available at:

http://eduscol.education.fr/cid101628/cycles-et-horaires.html (in FR)

3.4.   Digital technologies in the curriculum

- ICT is not taught as a separate subject. It is embedded in all subjects, at both primary and secondary levels.
- ICT is included in EMI (Education aux Medias et à l'Information -Education to Media and Information Literacy which integrates the notion of critical thinking).
- New optional subject called ISN (Informatique et Sciences du Numérique / IT and Digital Sciences)
- Education to Media and Information Literacy are now part of the curricula in lower secondary schools. All the disciplines and areas are concerned and must enable students to understand and use the media, tools and digital resources independently and in compliance with the law (protection and respect for privacy, intellectual property – controlling one's image - responsible behavior).

- Since September 2012 there has been a new optional subject called ISN for students following the science programme in their final year of higher secondary education (the subject is now available to students in their first year). Students

taking this subject study computer programming, e-safety, accessibility and algorithms in two class periods per week.

3.5.   Students' digital competence

Five competencies are currently required from students:

1. Information and data, which relates to information search and data processing and integrates media and information education issues.

2. Communication and collaboration, which deal with interactions and relates to the netiquette, content sharing.

3. Content creation, domain dedicated to the creation of digital content from the simplest to the most elaborate, including computer programs. It also addresses issues of network publication rights.

4. Protection and security. This area deals with everything from material safety to health and the environment as well as the protection of personal data.

5. A digital environment that deals with skills that enable an individual to enter a digital world and understand how it works.

3.6.   Assessment of digital competence

The "B2I" (**The Internet and Information Technology Proficiency Certificate)** created in 2001 is currently being updated.

It will be replaced and implemented in September 2018 from primary school to universities, by "**The Common Framework of Digital Skill**s" modeled on DIGCOMP. (The Framework for Developing and Understanding Digital Competence in Europe)

This new certification will be more in line with the 4th competence of our Common Core of Knowledge Skills and Culture – redefined in 2013, since it includes the notions of basic/ independent / proficient user in different domains replacing the acquired/ non acquired binary certification we used to have.

The French Ministry of Education insists on the transversal quality of digital skills and also on the need to give digital skills more visibility and to identify them more precisely in the French lifelong training program. So as to enhance the future employability and mobility of today's students.

PIX: for the current 2017-2018 school year, students and schools can evaluate their digital skills through accessing this online platform.

The platform aims to support the rise of the general level of knowledge and digital skills, thus preparing students to the digital transformation of our society and our economy.

PIX is free and open to students in their 7th year (ISCED), students in secondary education, university students, professionals of all kinds and to all citizens.

More information available at (in FR):

http://eduscol.education.fr/cid111189/cadre-de-reference-des-competences-numeriques-pour-l-ecole-et-le-college.html

https://pix.beta.gouv.fr/

http://eduscol.education.fr/philosophie/actualites/plateforme-pix

4. DIGITAL LEARNING RESOURCES AND SERVICES

4.1.   Digital content development

To encourage schools enter the digital age, the French Ministry of Education has created the **Central Department for Digital School** (DNE = Direction du numérique pour l'éducation- Directorate of digital Technologies for Education) which, among other things, supports the production of numerous digital resources and services.

The French government launched various digital plans for school since the 2000's, to support the development of digital resources and services, high level of digital reds and individual equipment.
The aim at stake is how to improve learning thanks to digital resources, from the adaptation of the school building to the learning process and interaction between pupils, teachers and parents.

For more information (in FR): http://www.education.gouv.fr/pid29064/ecole-numerique.html

Objectives: How to ensure the digital transition to all actors? How to ensure the availability of a diversified offer, adapted to the needs of the schools?
This "investment plan for the future" contains several e-education components.

CARMO: This document serves the state /communities by providing a framework for the development and implementation of mobile equipment projects that facilitate the access to digital learning resources. It should serve as a reference in mobility projects for education.

For more information (in FR): http://eduscol.education.fr/cid90992/carmo-cadre-de-reference-pour-l-acces-aux-ressources-pedagogiques-via-un-equipement-mobile.htm

The Ministry of Education encourages the production of public and private publications

and the various institutions are publishing digital resources for Educational purposes.

The existing resources during the 2017-2018 school year are as following:

1. *The portals of the Ministry:*

- The National Eduscol Portal of information and resources: Some resources are accessible from the National Eduscol Portal of information and resources. http://eduscol.education.fr/
- Prim à bord , the digital portal for primary schools
  http://eduscol.education.fr/primabord/
  for example, "English for schools" http://eduscol.education.fr/primabord/english-for-school or "Deutsch für schulen"
  http://eduscol.education.fr/primabord/deutsch-fur-schulen

For primary school education:
- **The PrimTICE portal** (complementary to the Prim à bord portal):

  The PrimTICE portal presents and advertises digital resources and pedagogical scenarios for primary education. It includes the content already available on the PrimTICE platform, together with a directory of several hundred teaching scenarios involving the use of ICT, from reception classes to Cycle 3 (the third stage of primary education in France):   http://primtice.education.fr/ (latest resources : production of a digital book and videos on tablets- a scenario on how to master your digital identity. For more information: http://primtice.education.fr

- **The Édu_Num newsletter**: Intended to accompany the digital strategy of the ministry, the Édu_Num newsletter is an information medium relating to actions and educational reflections integrating the digital in primary and secondary education.

- **The Edu'bases** (a database of pedagogical scenarios for secondary education): They are designed to support the implementation of pedagogical approaches that mobilize digital technology. Teachers can find, from a research in a given subject, descriptive sheets of teaching practices developed by teachers. These sheets point to the pages of the sites of the Regional Authorities where the documents are published.   More   information   available   at: http://eduscol.education.fr/cid114484/eduscol-the-portal-for-educational-professionals.html

- **The M@gistere platform** which offers a mutualized production of personalized distance education courses to lower and higher school teachers and education staff. It is also a platform with communities and co working spaces. Teachers can have access to a blended approach of distance learning and onsite learning.
  It is also possible to attend self-regulated, personal courses. More information available at: http://eduscol.education.fr/cid73451/m@gistere.html

- **Disciplinary portals**
  Disciplinary portals for secondary education with repositories of pedagogical scenarios written by teachers and for teachers and validated by inspectorates. More information available at: http://eduscol.education.fr/cid56924/tous-les-sites-disciplinaires.html

Detailed information in English on Éduscol available at:

http://eduscol.education.fr/cid114484/eduscol-the-portal-for-educational-professionals.html

- **An example of a National service of resources: The Eduthèque service**

Eduthèque is part of the digital plan. It is a web portal of resources in free access for teachers. It offers contents and services to teach and learn, to read, write and produce new documents in a digital way to facilitate the understanding and involvement of pupils as well as new/other teaching methods.
The French teachers who have registered on the portal have access to quality resources from the Scientific, Cultural and Professional Public Institutions (les EPSCP: Établissements Public à caractère Scientifique, Culturel et Professionnel)

The Ministry has partnered with some major French public institutions or corporations to develop very popular, free or for-purchase resources for teachers and sometimes for students.

It enables the use and re use of digital heritage in Education:

- BNF (Bibliothèque Nationale de France – National Library, state funded) has had an educational site for a long time, with "Texte-image", an image bank with copyright-free photos and scenarios.
- INA (Institut National de l'Audiovisuel, state funded) has designed "Jalons pour l'histoire du temps présent » (milestones for present time history), a series of multi-media resources and their teaching materials for history teachers
- Météofrance's (the state institute for weather research) education section contains animations in physics and chemistry developed specifically for teachers. They are freely accessible.
- BRGM (bureau de recherches géologiques et minières: the geology and mining research institute) (digital maps, catalogues and guides)
- IGN (Institut Géographique National : National Geographic Institute) (digital maps)
- Le site.tv (a consortium of the France 5 TV channel Canopé) is now integrated in the Eduthèque Portal and provides registered schools (teachers/librarians

and students) with a VOD service and corresponding teaching materials.

- On the occasion of the Europeana Year of Cultural Heritage (2018), Europeana offers for Eduthèque, a collection of resources translated into French from its collections, galleries and exhibitions belonging to European cultural institutions.These are images, texts, sounds and videos, largeley dowlable and free to use and reuse.

More information on the Eduthèque service at:
http://eduscol.education.fr/cid72338/edutheque.html,
http://www.edutheque.fr/utiliser/toutes-les-thematiques.html

2. *In local educational authorities;*

Local education authorities (30 in France) publish on their websites digital resources created by groups of teachers or inspectors. They are also mutualized on éduscol (on the Edu'bases = a database of pedagogical scenarios for secondary education) (Prim TICE for primary education) TRaAM (mutualized academic work)

- **Canopé** (Réseau de création et d'accompagnement pédagogique (teachers' resource center and learning support network) which provides teachers with digital resources,
  for example: "Les fondamentaux" (short videos on the basic learning skills)

https://www.reseau-canope.fr/lesfondamentaux/accueil.html

The ministry also relies on Canopé to develop, host and maintain sites and services such as:
- The e-sidoc portal:
  Public and school libraries showcase the work of publishers via the e-sidoc portal which presents all the publishers' resources in school vocabulary and does not require mastering the logic of the documentation process.

  https://www.reseau-canope.fr/notice/e-sidoc.html

- SIALLE: Service d'information et d'analyse des logiciels libres): it is a Free Software Information and Analysis Service that provides teachers with information on open educational software.

  http://www.reseau-canope.fr/sialle/

- Musique'Prim offers primary school teachers a secure access to a music catalogue and teaching material thanks to a partnership with TPLM (Tout Pour la Musique) an association of professionals in the music sector.
  https://www.reseau-canope.fr/musique-prim/accueil.html

- The viaeduc platform which is a social networking platform for teachers, school leaders and educational practitioners through which they can share knowledge and good practices, launch common projects, organize training or form working groups.

  https://www.reseau-canope.fr/actualites/actualite/viaeduc-le-nouveau-reseau-professionnel-des-enseignants.html

3. *Public institutions:*

Public institutions like CNIL (Commission Nationale de l'Informatique et des Libertés: The National Commission for Data protection and Liberties) or le Sénat (the French Senate) publish digital resources.

4. *The Ministry also relies on CNED and ONISEP for some resources*

CNED (Centre National d'Enseignement à Distance (National Center for Distance Learning) which caters to the needs of students unable to go to school produces an increasing number of digital resources)
http://www.cned.fr

ONISEP (National Office for Information on Education and the Professions) which has an online website; for example, "Parcours- Avenir"

http://www.onisep.fr/Equipes-educatives/Ressources-pedagogiques/PARCOURS-AVENIR

5. *Resources published by private publishers:*

Textbooks are produced commercially but the state provides the editors with the curricula and a frame of references.
The state offers a service of presentation and search of digital resources now with the MYRIAE portal. https://myriae.education.fr/

Regarding paper resources, the State does not publish any textbook on lists since it goes against the pedagogical freedom of teachers as stipulated in The Education Code.

The schools provide textbooks free of charge to students at compulsory school level. In primary school, town councils pay for the textbooks. While in junior school, the state pays for the textbooks and in high school, where the parents are supposed to pay for the textbooks, the local authorities usually pay instead of the parents.

At post-compulsory level textbooks are paid by the parents.

- The traditional textbook publishers offer a digital license that can be often associated with richly textured paper textbooks (Hachette et Editis, Belin, Magnard)

- Some new textbook publishers offer a free digital version coupled with paying low cost paper textbooks (Sésamath, Lelivrescolaire.fr)

- Publishers also use EPNs (Espaces Numériques Publics – Public Digital Centres) and school Cyberbases to present their resources inside and outside schools. They use the labs of the Canopé network too.

- Reference resource publishers: The Encyclopaedia Universalis and the publisher Robert offer online resources accessible to schools through digital licenses. (All the resources are purchased on a subscription basis from the school or institution, free of charge or for a fee.)

6. *A service from the Digital Plan For Education: BRNE*

French digital resources for schools (BRNE) are part of the large-scale French digital plan for education: it is thousands of Digital Contents and Services made available free of charge for teachers and their pupils from 9 to 15 years old. They are designed for educational purposes.
These resources have been designed to meet the needs of students with special needs (many subjects are covered at all levels concerned (see accessibility chapter)
They can be modified, they are largely downloadable and they are structured according to the curricula. They can be used on any device, to learn individually or in groups. Teachers subscribe and access the web platform with their professional email address. The objective is to teach and to learn. According to the teacher's pedagogical choices, these digital resources increase the learning possibilities for all pupils. (For example: Tralalère , Bayard, Educlever...)

More information at:

http://eduscol.education.fr/cid105596/banque-de-ressources-numeriques-pour-l-ecole-brnedu-cycles-3-et-4.html

http://ecolenumerique.education.gouv.fr/brne/

4.2   *Content sharing and creation*

Disciplinary portals for secondary education with repositories of pedagogical scenarios written by teachers and for teachers and validated by inspectorates.

More information available (in Fr) at: http://eduscol.education.fr/cid56924/tous-les-sites-disciplinaires.html

ScoLOMFR Enhancing the quality of the indexation of learning resources

ScoLOMFR has inherited from the LOM standard (Learning Object Metada) and the LOMFR (Learning Object Metadata in the French language) French norm. While it is an equivalent of the SupLOMFR project of the French higher education system, its objective is to describe learning resources for a younger public, namely the pupils of primary and secondary levels, in the French education system – Unesco ISCED 2011, levels 1, 2 et 3, from 6 to 18 of age –. It aims to create a set of stable references to help index available resources.

During the last 9 years the ScoLOMFR project has evolved and consequently has moved away from his formal status of a LOM's application profile. This fact is a direct consequence of the desire to answer more adequately users' needs, such as updates of the curricula, new teacher-librarians' practices, emerging technologies etc.

One of the Ministry's objectives is to support the growth of the school publishing sector. Training activities have been offered to both the private sector and major national cultural institutions.

Another important goal is to build a public service of digital tech for education: ScoLOMFR is one of the building blocks of the public service in question.

The Ministry for Education, Higher Education and Research has decided to be systematically involved in ISO and Afnor experts' groups of the Commission n°36, paving the way to a switch to MLR (Metadata for Learning Resources) norm and to a unification with SupLOMFR through a new project: NoDEfr.

ISO/IEC 19788 MLR (Metadata for Learning Resources) is an innovative multipart standard whose objective is the description of educational resources in a multilingual and multicultural context, technology neutral and taking into account the latest developments in terms of dissemination of open linked data.

http://eduscol.education.fr/cid57098/le-profil-d-application-scolomfr.html

4.3. Accessibility for learners with disabilities and social inclusion

Digital technologies are usually a relevant answer to the special needs of pupils with disabilities as it enables personalized access to contents. Thus, some current experiments tend to show the increase value of digital technologies with pupils with pervasive development disorders (among them autism) or pupils suffering from impaired cognitive functions. An example of experiment is the local project "ClisTab", implemented in 9 schools near Paris. It is a project using tablets a tablet at school and at home to pupils suffering from impaired cognitive functions.

Publishers respect the 2006 law concerning heavy disabilities such as mobility impairment; they pass their files to the BNF for adaptation by an association or editor agreed upon by a special committee led by the Ministry of Culture. Negotiations are currently underway to improve the 2006 law for pupils with DYS.

More information available (in Fr) at:
http://www.exception.handicap.culture.gouv.fr/liens.html

Investing for the future programme:

For other disabilities, like visual impairment, DYS impairment, autism, no quality resources are available or planned in the Program "investing for the future" but the Ministry works with specialized associations and supports the production of some resources for blind or deaf students at primary and secondary school level. The adaptation of existing resources has not been carried out by school publishers, but mainly by local medical associations. There are nevertheless start 'ups which offer resources to adapt or train like La Favie (Logiral), Learnenjoy (Educare), StreetLab (Visma vue), Aidodys.

As part of the future investment plan for the future, e education projects are currently in the development stage.

Provisions concerning accessibility have been included in the tender package. Some projects specifically concern pupils with disabilities to improve their education and learning (such as OpenLib, Eyeschool, CAPA, TagTice, Transition réussite).

More information available at: http://eduscol.education.fr/pid25656/numerique-et-handicap.html

The ministry encourages programs such as ORDYSLEXIE.
The ORDYSLEXIE IT solution significantly increases the autonomy of DYS in class.
It consists of a computer with touch pen, OneNote® Microsoft® software, and scanner.

https://rslnmag.fr/jeunesse/des-ordinateurs-pour-aider-les-enfants-dyslexiques-le-pari-de-denis-masson/

The ministry also encourages associations such as FUSO France that trains teachers in charge of DYS pupils within the class.

A2RNE:

Within the framework of the Accessibility and Adaptability of Digital Resources for Schools (Accessibilité et adaptabilité des ressources numériques pour l'École - A2RNE) ,the French Ministry of Education published recommendations to authors and publishers to help them produce digital resources accessible from the very first steps of their design

or embedding functionalities that meet the needs of students with disabilities, including students with Dys-type problems.

The A2RNE offers a simplified version of the required level which favors an easier implementation than the international and national standards versions (WCAG and RG2A) so as to encourage publishers to produce those resources that will be part of the French digital resources for schools (BRNE). The BRNE is part of the large-scale French digital plan for education that offers thousands of Digital Contents and Services, designed for educational purposes and are available free of charge for teachers and their pupils. Publishers are both audited and supported by the Ministry of Education to encourage them board the French digital resources for schools.

The French digital resources for schools will constitute in the future, the largest body of resources natively accessible to the School. They could gradually converge towards a more demanding A2RNE and conform to the French General accessibility framework for administrations (Référentiel général d'accessibilité des administrations -RG2A).

http://eduscol.education.fr/cid56843/ressources-numeriques-adaptees-soutenues-et-realisees.html

4.5.   *Learning Platforms*

1. *Access to Virtual Learning Environments*

Espaces Numériques de Travail -Digital Work Spaces are a priority for all schools. In France, a VLE includes a management system and pedagogical services. Digital content produced by teachers may be published online on VLEs or included in databases as pedagogic al scenarios. The measures cover primary and secondary levels and include the generalization of VLEs to enable parents to understand and follow their children's education. France aims to provide 100% of French teaching institutions with internet connections and to give all members of the educational community access to a virtual learning environment.

2. *ENT deployment policy:*

The French Ministry for National Education has been leading since 2003 an ENT deployment policy on the national level. Currently, the generalization concerns 8.4 % primary schools, 83 % lower secondary schools and 98.5 % upper secondary schools.

Within this framework of this ENT unifying policy, the Ministry is elaborating a master plan for ENT (called SDET in French) in order to guide the local actors and manufacturers through this global project. The latest version is the 6.0 that we need to develop in terms of interoperability. It's useful to point out that in France, the local authorities are in charge of equipment and IT facilities management; the state is in charge of both curriculums and teacher training, and of the input of VLEs and security.
The SDET is composed of a main document with an operational annex (and an implementation guide); it contributes to the relationship between the national institution

and the local authorities and provides a national coherent framework for the ENT projects.

The SDET offers:
• A set of functional, organizational and technical specifications to guide people in the formalization of functional requirements by the project leaders, to guide them in the realization or adaptation of products and services;
• Legal, regulative, security and privacy requirements.

The local authorities guarantee the ENT solutions they deploy in their schools; they refer to the SDET to elaborate the functional requirements of the call for tender. The manufacturers who want to win the market refer beforehand to the SDET.

The ENT can be defined as an integrated set of digital services which are organized, chosen and made available for the educational community of the school. Once identified, a single entry point allows users, to access to a group of personalized digital services. These services are secured areas. The ENT solution is organized around two sets of services:
•"Core" services which provide support to the application services (directory, identity and access management, presentation/personalization of services...), the back office ensures interoperability between services;
•Application services (textbook, media center, LMS, collaborative tools...).
The application services are provided by one of the internal components of the ENT solution or sustained by external modules of ENT (third services).
In terms of structure, we can find some ENT with different integration modes and levels, and others with variable levels of modularity; the ENT have to be interfaced with existing systems.

http://eduscol.education.fr/pid25718/espaces-numeriques-de-travail-ent.html

5. TEACHER EDUCATION FOR DIGITAL LEARNING

5.1.   Assessment Schemes

The C2I (certificat informatique et internet enseignant - the ITC certificate for teachers) is not compulsory but trainee teachers are provided with a few hours training depending on the Higher Schools for Teachers they belong to.

School leader support

Within the framework of the Digital Plan, The Directorate of Digital Technologies for Education has set up an experimental project aimed at designing a national steering tool destined to help school leaders develop the digital in schools: **OPINEE** (Outil de Pilotage du Numérique pour les Écoles et les Établissements). OPINEE has been designed as a

self-positioning device of the school according to seven domains (equipment-infrastructure-services- steering – training – uses and usage).
It will make it possible to set realistic objectives and to identify the levers to be used to achieve them. The report of these seven indicators will allow the production of synthetic elements that will help the steering locally, regionally and nationally and will help practices to evolve. It will generalize to lower and higher secondary school in December 2017 and to primary school in 2018.

5.3.   *Digital technologies in initial teacher education*

ICT in initial teacher education is compulsory. It is currently being reviewed for teacher training institutions (Écoles supérieures du professorat) that opened in September 2013.

5.4.   *ICT in in-service teacher education*

ICT-related in-service training is not compulsory but is encouraged.

M@gistere is a tutored and interactive in service training system designed for teachers of primary and secondary education, which complements the existing training offer. It takes a blended approach combining face-to-face and online training.

http://www.education.gouv.fr/cid72318/m@gistere-accompagner-la-formation-continue-des-enseignants.html

5.5   *Training the Teacher Trainers*

Each local education authority (académie) organises its training plan for teacher trainers. Teacher training being driven by the Ministry of Education.