17 France: Banks of educational digital resources

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General description

At the outset of school closures, the French government facilitated access to 17 banks of educational digital resources for school (BRNE) as one of the key elements to ensuring pedagogical continuity during the confinement period and afterwards. These banks of resources were developed by publishers and EdTech companies a few years prior to the COVID-19 pandemic as a result of a public tender. The BRNE provide teachers with learning activities for their pupils, but also the possibility to modify or create their own resources and to differentiate what they offer to pupils. The BRNE are portals that provide access to thousands of pages of content, tools for creation, and services for dissemination and interaction between teachers and students (discovery, training, revision, learning and assessment activities). They are all fully aligned with the French national curriculum in all disciplines and grades, and tagged accordingly to make them easily accessible. Throughout their deployment, the BRNE benefited from extensive support from the French *académies* (regional sub-divisions) in terms of teacher training and the dissemination of

information on teaching methods. The procurement phase allowed the ministry to develop strong relationships with the contractors, who developed a better understanding and competency around the ministry's requirements.

The contribution of the BRNE implementation in the face of the crisis lies in their rapid and massive expansion as soon as the lockdown was enacted in France – as part of a more comprehensive system of distance solutions for education continuity. Most notably, the BRNE were extended beyond their initial scope (primary and lower secondary) and targets (French public school teachers) thanks to a continuous dialogue and to the existing good relationships between the ministry and EdTech contract holders.

As soon as the decision was taken to close schools, BRNE holders were asked and unanimously agreed to extend access to all teachers who wished to use them. This allowed teachers to use all the digital tools available on the platforms, in particular the services to create pedagogical activities and to send them to pupils. Teachers were given access for both the age groups they were teaching and for the levels above and below these age groups.

In less than a fortnight, the government drastically simplified access for teachers, students and their families by disabling all authentication requirements (thus eliminating any personal data collection) to one of the banks of resources: the "Mescoursensolo.fr" platform. This more open model was then replicated to be used with other banks of resources to facilitate access to a large bank of existing educational resources during the crisis. This open access also allowed accessing the learning materials from all French-speaking countries, leading to significant usage in Africa.

Main problems addressed

The opening of the BRNE to a much larger audience thus mainly addressed five challenges arising from the school closures:

1. ***Providing quality digital resources designed for learning both face-to-face and at a distance to as many teachers, students and parents as possible (and as quickly as possible).*** Increasing the numbers of users was necessary to ensure pedagogical continuity and implied testing the robustness of the banks of resources, their respect for privacy policies and the quality of their content in relation to curriculum.

2. ***Facilitating open access to resources with no authentication required other than a simple link or alphanumeric code.*** It was important to ensure that stakeholders could easily access the banks of resources. Broadening the scope of the platform did not necessarily imply opening up all functionalities to everyone, which was not possible due to the expense of such interactivity. Rather, the challenge was to facilitate students' and parents' access to activities that enabled them to discover, revise or reinforce learning in school.

3. ***Making content available to students and families lacking computer equipment or Internet connections.*** This was achieved most notably via television lessons based on the resources of the BRNE through the Maison Lumni, which also broadcast other resources). This service required extending the broadcasting rights of the resources.

4. ***Making content available to French speakers internationally.*** The BRNE were initially designed to serve French national teachers who were required to connect using their professional ID. However, as the "mescoursensolo.fr" platform stopped requiring certification or authentication, the platform could be used everywhere in the French-speaking world either to address the common difficulties of pedagogical continuity or to offer solutions to more local challenges.

5. ***Ensuring that a large number of users can access the platforms simultaneously.*** The expansion of access induced a risk that servers would not accommodate all demands, as was the case for most other public and private services during the first two weeks that followed school

closures. The cloud solution that was used allowed for an automatic calibration of server use based on the very high initial demand.

Mobilising and developing resources

Resources were mobilised through collaboration between the ministry, education contractors and stakeholders, building on the past procurement of educational resources or on the already established extensive taxonomy of digital learning resources. While most of the resources were just mobilised, the main development related to the extension and modalities of access to the platforms to new audiences and possible uses.

On 27 March 2020, direct access to the digital resources banks was offered to all students (and their families) who wanted to practice and revise. Most importantly, no authentication was necessary and therefore no personal data were collected on the Tactileo platform. This large resource bank brought together several publishers (French FSL/FLE [school, middle school, high school], maths [10th grade and middle school], science and technology (SVT-PC, techno), German, Italian, Latin-Greek at all levels). Access to the digital resources through the school learning management systems was also extended so that teachers could access resources beyond the grades they teach.

Building on the success of this approach, the ministry amended the initial procurement contract to allow for the delivery of the (new) "Mescoursensolo.fr" platform, whose model had the particular merit of providing simplified access to students and their families even when teachers had not initially taken on the BRNE. This specific platform demonstrates the potential of the digital banks, notably for pupils with disabilities for whom the resources are adapted. The adaptations target students with a variety of special needs, from learning difficulties through to sensory and cognitive impairments. They ease students' autonomous learning, either by making the resources accessible (e.g. font type, font size, colours, contrasts, subtitles, oral instructions and activities, etc.) or by proposing alternative learning scenarios or activities more adapted to their needs (e.g. digital manipulations for students with dyspraxia). Aimed at boosting students' learning and self-efficacy by allowing them to learn faster, these adapted resources also support teachers in personalising their teaching to students with special needs. While already available before the pandemic, some teachers and students became aware of the existence of these inclusive resources only during the school closure.

The French network of Digital Education Advisers (DANE) offered widespread teacher digital training alongside the ministry. Continuous dialogue between stakeholders, existing good relationships and an already strong infrastructure with high-quality resources developed by publishers all fed the mobilisation and development of resources.

Fostering effective use and learning

Regional academies that took part in the BRNE development and qualification promptly promoted their use. In consequence, the BRNE have spread more widely than the resources curated by major cultural institutions via the eduthèque portal or those curated by industrial players via the Etincel platform.

Here also, the ministry was able to capitalise on previous actions (procurement contracts, co-ordination at the national level, collaboration with all stakeholders) to foster and accelerate the effective use of digital banks through webinars. In total, in the first few weeks after the school closure, more than 300 educational pathways in all disciplines were offered by teachers and trainers from various academies such as those of the Nancy-Metz academy, the Aix-Marseille academy or the examination reviews by the Créteil academy. (Academies are regional local authorities representing and implementing the ministry's policies in the field.)

Social networks, peer-to-peer sessions and distance meetings such as the [Ludoviales](#) have also increased the reach of information and training.

Despite the emergency measures taken during the lockdown period and the push for rapid solutions, the BRNE remained committed to their initial ambition of reshaping digital school practices around pedagogical innovations, security of services, cloud technologies, artificial intelligence and mobility to the benefit of teachers and students. In that regard, the BNRE have displayed a set of innovative specificities from the outset that makes their use easier for teachers and more effective for learning:

- digital contents can be modified, downloaded, and are functional offline and operational on any support (multi-OS, web-responsive)
- digital contents are mapped against the French national curriculum, with a level of granularity and a taxonomy that make resources easy to identify for teachers
- they represent the largest collection of interactive, accessible educational resources to support a more inclusive school (disability)
- as a nationally shared solution, they facilitate support and allow for harmonising training needs and delivery
- the Ministry of Education ensures that all digital solutions comply with France's General Data Protection Regulation
- the Ministry of Education supports the EdTech sector in structuring its pedagogical and technological offers, a collaboration that increases the EdTech skills both within the EdTech sector and within the ministry.

Implementation challenges

This solution entailed overcoming a number of implementation challenges.

Extending access beyond the scope covered by the original public contracts and initial intended beneficiaries. At the outset of the confinement period, the ministry requested in writing that the BRNE holders extend the scope of the banks of resources, one of its key policy actions along with TV broadcasting of courses. This administrative challenge required the mobilisation of the entire institutional chain – the ministry's Eduscol website, pedagogical inspection bodies and digital education advisers in the field. The promotion and enlargement of the BRNE allowed for rapid dissemination of the initiative to an extent that had never been seen before.

Ensuring compliance with data protection regulations. Conceived as early as 2017, the first 14 digital banks were designed to serve 245 000 teachers and 2.4 million students as a maximum user target. The COVID-19 crisis doubled the number of potential users with no removal of content, services or privacy rights. Indeed, at a time when the urgency of the crisis meant that some actors found it difficult to comply with the General Data Protection Regulation, the BRNE commitment to guarantee personal data protection was maintained. This involved the removal of authentication requirements, so that individual platforms no longer collect personal data.

Initial resistance to the open model. The successful and rapid deployment of the BRNE led to the propagation of the open model to other banks of resources. At first, however, the evolution towards the open "mescoursensolo.fr" model encountered very limited success with stakeholders. It was only after advertising the low development costs and promoting the new possibilities offered by open sessions that other BRNE stakeholders started to move this open-access agenda forward. Open access had initially not been planned as a user (and pedagogical) experience when establishing the BRNE.

Ensuring robust technical specifications. The BRNE had been included in schools' learning management systems for several years, but their enlargement involved ensuring permanent services and online-offline interactivity as well as robustness and ease of use.

Planning for a sustainable solution. The ministry can now envision – alone or with local authorities – proposing an ongoing pedagogical platform in primary and secondary education. This would be dependent on further development of the BRNE, on support in terms of training and communication as well as on the maturity of the platforms. To this effect, the ministry will issue new calls for tender in 2020-21 to provide additional educational content through the BRNE.

Monitoring success

The BRNE contractors indicate that they have seen a significant increase in the number of registrations and in the use of content and services during the school closures period (5-15 times more depending on the resource bank). Those numbers are corroborated by the frequency of visits measured on the students' and teachers' learning management systems (*espaces numériques de travail*) where the BRNE are deployed. Several hundred thousand users were recorded on the teachers' side, who, in turn, uploaded several thousand exercises, sessions and activities, with a peak in the first half of April. The metrics nevertheless remain heterogeneous due to the multiple access modalities, and they cannot capture the use of contents downloaded offline, nor account for reuse on Moodle platforms.

The most significant increase in use was recorded on 30 March 2020, as illustrated by the data presented by the Tactileo platform (excluding ENT). On that date, there were 120 000 teacher accounts created on Tactileo, exceeding the target of around 80 000 teachers for all subjects covered by the BRNE collections. In addition, Tactileo recorded 15 times more connections and over 100 times more sessions sent to students by teachers than before 14 March; and more than 1.4 million exercises performed by students, without any server load problems. Figure 17.1 shows the difference in the number of users between the 3 weeks before 9 March 2020 (in orange) and the 3 weeks after 9 March 2020 (in blue).

Figure 17.1. Number of users of Tactileo over time (11 February-9 March; 9 March-4 April)

In addition, the open access "mescoursensolo.fr" experienced as much server consumption during the confinement as the whole of BRNE and Tactileo Education together recorded between the start of the school year and the start of the confinement. The work on monitoring indicators is considered a priority and must be consolidated, even if not all digital resource banks target the same number of potential users. In particular, access to the BRNE is widely heterogeneous depending on school level. An online survey to provide monitoring feedback is planned, both to acquire a point of comparison with previous studies conducted in the summer of 2018 and to measure the interest shown by users in the BRNE.

Adaptability to new contexts

The BRNE could stand, along with the "My Class at Home" scheme from the National Centre of Distance Education (CNED), as a durable basis for education continuity proposed by France at the international level. The initiative would likely require the involvement of local actors to adapt the contents to different curricula and different cultural approaches to learning, but BRNE holders have already agreed to propose joint solutions, such as the Tactileo offer for Senegal.

Removing the authentication barrier has massively broadened the use of the BRNE. As a French professional teacher email address is not available, their content and services are available to anyone who speaks French and has access to the Internet, be it on a computer, tablet or mobile phone.

The BRNE are also listed in an online catalogue of all French public and private players in digital education that is being compiled. The idea is to propose a coherent and comprehensive offer that brings together all the educational actors of the French educational digital ecosystem through a tripartite alliance between public actors, private actors (EdTech companies) and non-governmental organisations (to facilitate access to the Internet). This last issue of Internet access is often problematic, especially in lower income countries, and that is where asynchronous Internet solutions such as Bibliothèques sans Frontières or the BRNE can play a crucial role to ensure education continuity.

Box 17.1. Key points to keep in mind for a successful adaptation

1. Define all the needs with teachers, trainers and managers to lay the foundation for the necessary content, tools and services, but also the methods for communication, training and support at both the national and regional levels.

2. Convene all the players in the educational digital ecosystem (content and service providers) for sourcing before drawing up public contracts. Maintain constant dialogue to build and maintain good relations with all stakeholders.

3. Once the call(s) for tender has (have) been published, involve the field players in the design of the proposed resources, encourage local training initiatives and publication of the paths for use, put these players in contact with the stakeholders for feedback, suggestions for development or adaptation.

4. Impose open and international standards for the largest possible interoperability and retroactivity of solutions, taking into account audiences with special needs and a good understanding of learning traces and the use of school data.

5. Map and tag the resources according to your national curriculum (or local curricula) by grade, discipline and topic to make the resources easily identifiable by stakeholders and provide a variety of resources for multiple use cases.

6. Convince resource providers to open publicly (at least part of) their solutions, to give both teachers and national education managers as well as students and their parents an understanding of the potential and reality of activities within a framework of school confidence.

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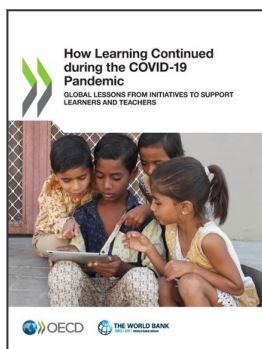
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