

Design Of A Bimodal Learning In Higher Education “Case Of The Higher School Of Education And Training In Berrechid”

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Abstract: The extension of the educational offer to higher education requires more premises, human resources and material resources. Something that is not covered by the existing infrastructure in a lot of educational structures in Morocco. Thus, our article proposes a reflection on a learning model that tries to overcome the deficit due to the increase in the number of students at the Higher School of Education and Training in Berrechid (ESEFB) in the academic year (2022-2023). It is about bimodal learning and the conditions that allow it to be implemented. The architecture of this model revolves around three systems: pedagogical, technological and organizational. These are available in collaborative classes, organized synchronously face-to-face and remotely. Ultimately, this contribution opens up avenues for the development of a process approach in the operationalization of bimodal education. Thus, it triggers a research project that will begin with the design of the model, its experimentation and its adoption to lead to its generalization.

Keywords: bimodal learning, collaborative class, distance education, pedagogical scenario.

I - Introduction

The reform has been and still is a source of new decisions that try to breathe new life into the university system. In Morocco, this reform, which affected the training offer of universities, was marked by a new architecture of education license courses with ambitious objectives in terms of staff by expanding the reception capacity of the establishments concerned. so that they reach a total workforce at the national level of more than 20,000 students¹. Such a visibly technical decision is made in a context where the infrastructure and the human and material resources do not follow. Thus, to honor the objectives set by this decision, it was necessary to set up an optimal scenario for the use of the premises on the establishment's site (maximum

rate of use of the rooms), or resort to the use of different courses by seeking to optimize the means available, control the number of students and ensure pedagogical compliance. Indeed, the fact of giving courses on different sites can be based on the institutionalization of distance education and take into consideration the nature of the public concerned, especially those of the first year concerned by the increase in numbers and those are in the midst of a high school-university transition. The solution explored would be, in my opinion, the use of bimodal learning. Thus, the following questions arise:

- What is bimodal learning?

- How to deploy it in the Higher School of Education and Training in Berrechid (ESEFB)?

- What are the prospects for such a practice?

As a result, the following research addresses four main axes:

- First, the bimodal learning concept: its definition and forms;

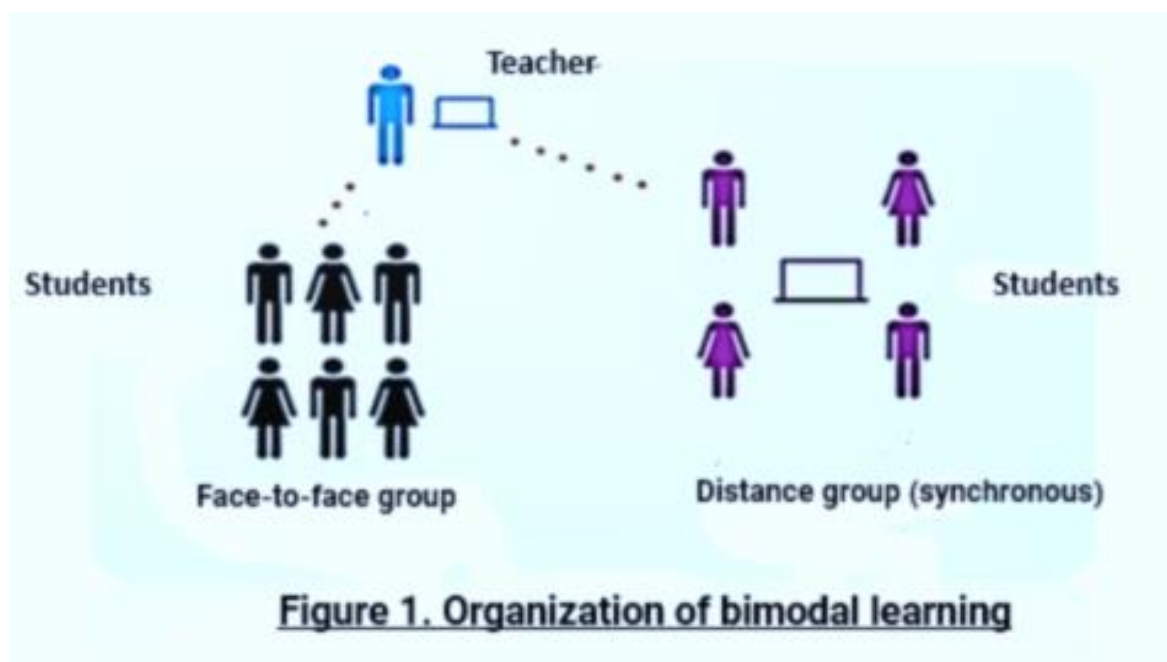
- Secondly, previous work done in this subject;

- Thirdly, bimodal learning architecture proposed for the Higher School of Education and Training in Berrechid (ESEFB);

- Fourthly, perspectives and recommendations for its establishment in the Moroccan university sphere.

II- Bimodal learning: Definition

Bimodal learning is the fact of giving lessons to a group of students in physical presence in class and at the same time to another group remotely by videoconference. In other words, bimodal learning simultaneously includes face-to-face and distance learning modes. This means that the teacher administers his course to students who are present in class and to others who are remote.



However, it is necessary to qualify the bimodal teaching compared to the comodal: In a bimodal training the teacher indicates to the students the modalities of participation in the course (face-to-face and/or synchronous at a distance or asynchronous); in a comodal training, students can choose, each week, whether they will attend the course synchronously (face-to-face or remotely) or whether they will carry out the activities in asynchronous mode. »²

To this end, the definition, which is very simple, contrasts with an absence of common terminology (Rael et al., 2020)³. There are many

concepts used for this type of teaching: hybrid, mixed, liquid teaching, etc.

This heterogeneity of concepts is characterized by the flexibility linked to this teaching and which governs face-to-face and distance education. In our case, the possible forms of its execution are: either a bimodal learning in the same site or a bimodal learning in different sites (geographically distant from the main class).

III- Previous work

The recent works that have been recorded around the theme of bimodal learning fall into two main categories:

- Before 2019 (before Covid-19), the work was based on synchronous learning using videoconferencing and the virtual world. At this level, we can mention the work done by:

- (Collin et al., 2016)⁴, which addresses the question of bimodality as the result of a movement of transmission of knowledge oscillating between face-to-face and remote;
- (Lakhal et al., 2017)⁵ emphasizes educational animation based on interaction and the collaborative class technique. In this case, the technological conditions have a support function in relation to the pedagogical practices providing synchronous courses, which require student support.

- After 2019 and with the pandemic that forced countries to close their territories, teaching was limited to face-to-face teaching to restricted groups and extended its remote services following health recommendations. Thus, information technology (IT) and the mastery of its techniques has become a mandatory condition for the exercise of the teaching profession:

- Beatty, B. J. (2019)⁶, believes that bimodal learning requires a cost for teachers and which is marked by the

commitment, adaptation and mastery of technology (IT) and for students in terms of equipment and material means without forgetting administrative support staff;

- Leijon, M. et Lundgren, B. (2019)⁷, have highlighted the difficulties encountered in the management of the multiple spaces divided between face-to-face and remote classes.

On this, our contribution tries to capitalize on previous work to reconcile between the technological conditions and between the provisions of the teachers in order to trigger a reflection on the establishment of bimodal classes in the Higher School of Education and Training. in Berrechid (ESEFB). Thus, this initial work is dedicated to the delimitation of the requirements of the main elements of bimodal learning and to test it on classes.

IV- Proposed bimodal learning architecture:

The objective of this proposal is to neutralize the impact of the effective effect of the students on the lessons by ensuring that the courses of the modules are presented by the module manager synchronously in face-to-face class and in distance class. and in the different classes in the other sites.

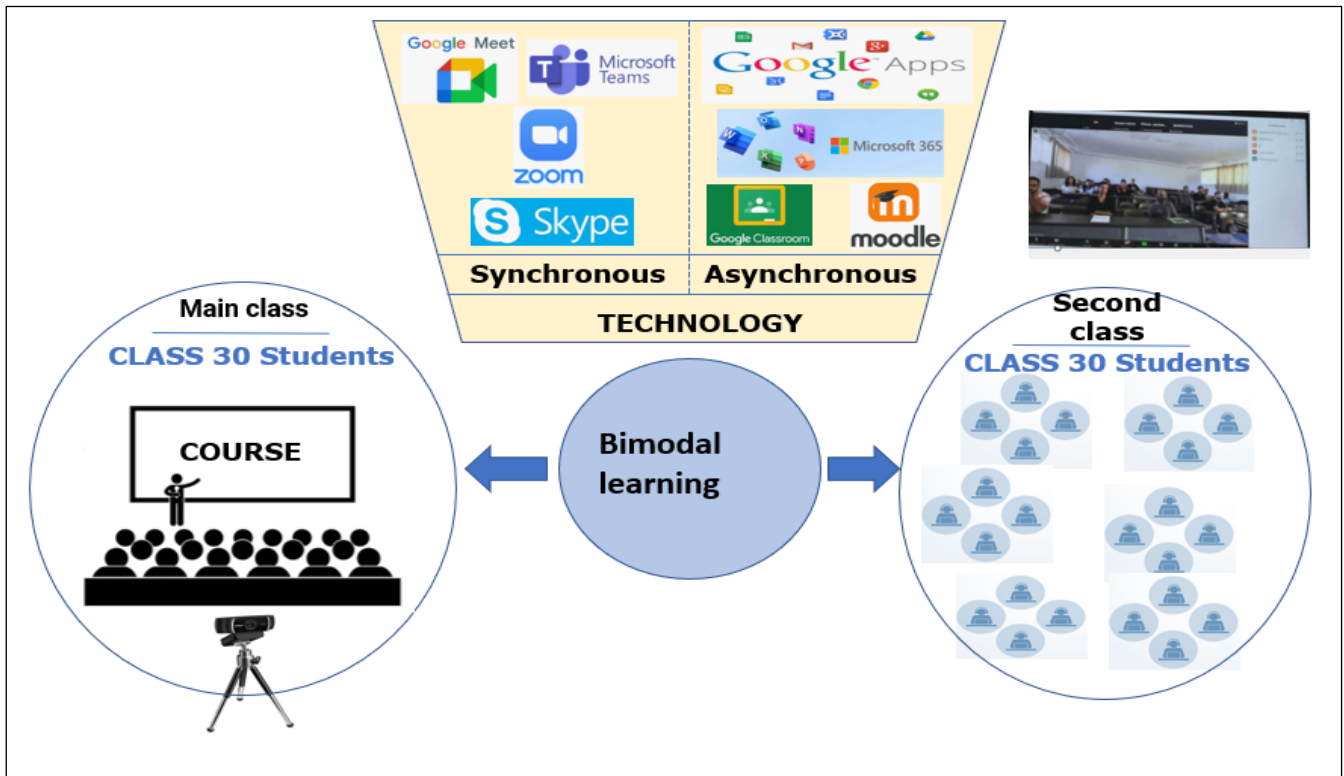


Figure 2. Distribution of classes on two different sites

The main class of the course requires the implementation of efficient and effective means on the pedagogical, technical and organizational levels. This is to lock the risks related to the

sharing of educational content, to the interactions between the remote group and the face-to-face group during the course and finally to the organization of the groups. Thus, the proposed solution revolves around the three main components of bimodal education as follows:

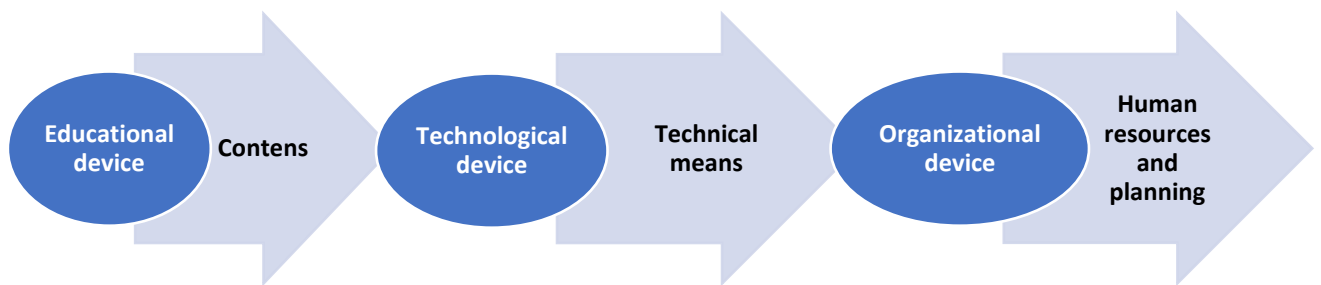


Figure 3. Bimodal learning process

The overall diagram of this proposal presents the macro processes⁸ of conducting a bimodal education and specifies the human, material and

organizational resources to be deployed in the process⁹.

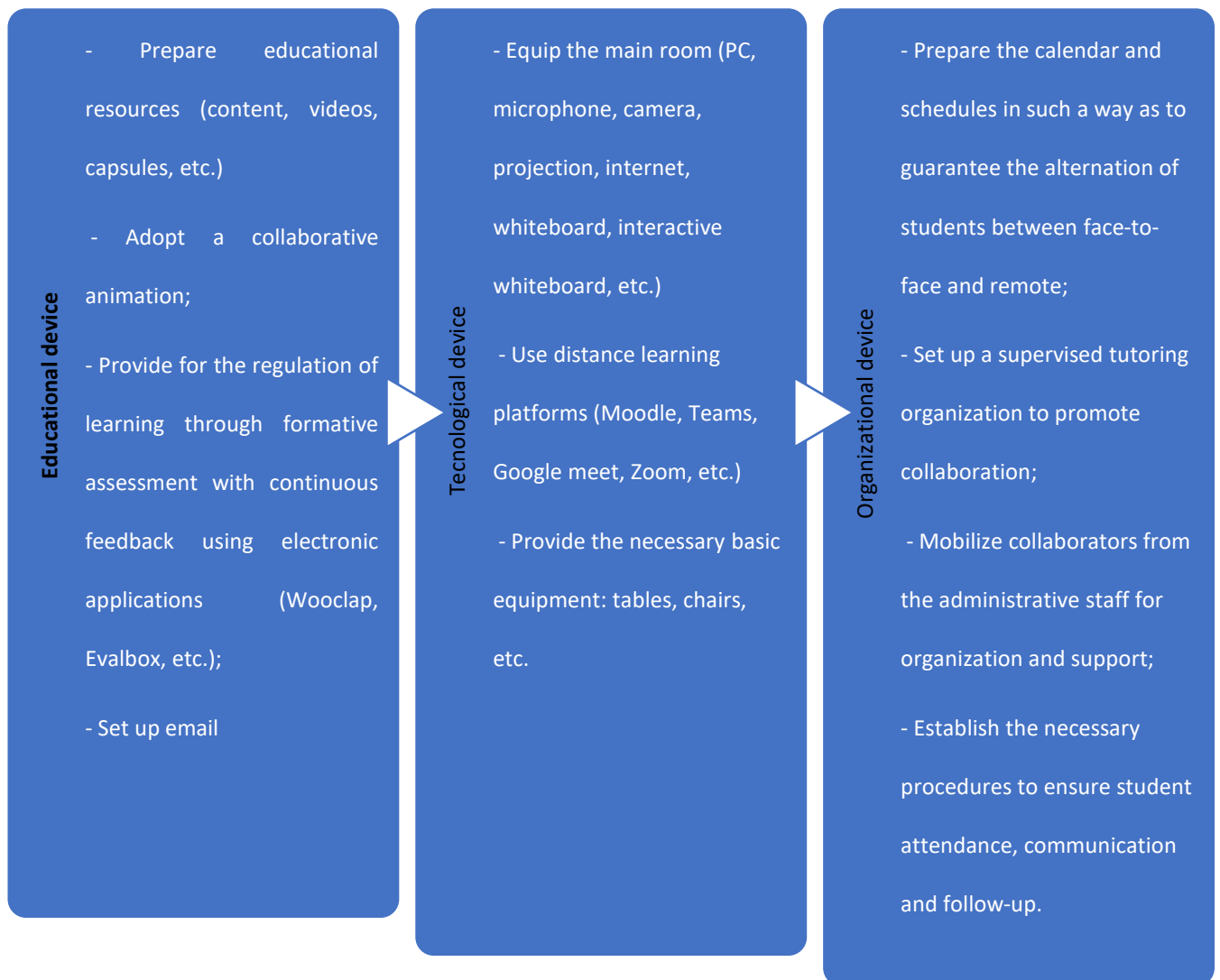


Figure 4. Deployment of the bimodal learning proposal

Indeed, the execution of our model is done through collaborative classes¹⁰ where the construction of learning results from digital interactions. The classroom becomes a place of mutual aid and pooling of knowledge¹¹.

Thus, students are part of a socio-constructivist learning¹². The role of the tutor is decisive in this model because he helps the students to appropriate the collaborative work and transmits the rules of conduct to them. The tutor therefore appears as a person ready to render service, to show benevolence towards others without it being necessary for him to possess particular formal titles¹³. This is why the

question of the organization of bimodal education requires the development of pedagogical scenarios¹⁴ and procedures that facilitate the management and regulation of learning. The pedagogical scenarios consist of the definition of the learning outcomes, the course of the pedagogical activities, the didactic materials used and the evaluations.

V- Conclusion and discussion

The optimization of resources is a concern that requires educational actors to rationalize the use of available resources. Thus, faced with the increase in the number of students and the limitation of resources at the Higher School of Education and

Training in Berrechid (ESEFB), the initiation of a reflection on the establishment of a bimodal education was an opportunity to overcome the deficit recorded in terms of infrastructure. Our contribution proposes a bimodal learning architecture that highlights the major processes of its implementation:

- **Pedagogical:** oriented towards lessons, learning and the logic of their implementation, the scripting of lessons constitutes a decisive step in this process;
- **Technological:** defines the necessary equipment;
- **Organizational:** concerns the execution of bimodal learning through learning planning, course facilitation, etc.

This proposal allowed the design of a bimodal learning. Further work can be triggered to experiment and evaluate the performance of this experiment. Nevertheless, it should be emphasized that a management of organizational change must be initiated to promote the emergence of digital education at the level of support staff.

Nevertheless, it should be emphasized that a management of organizational change must be initiated to promote the emergence of digital education at the level of support staff. The implementation of procedures allows students to adapt to this new mode of operation and gives them the possibility of appropriating an organization of which they are the object and the means. Thus, each

It will be done on 4 groups of students distributed as follows:

Level / class	S3	S5
Secondary education stream: French	30	15
Secondary education stream: SVT	30	15
Total	60	30

The experimentation process is focused on the production of internal bimodal learning documents to document the different tasks and activities, prepare the necessary technological

task and activity are formalized by a sheet which describes them and designates the various stakeholders.

Also, in view of previous work on the proposed solution, our project reconciles between the technology variable which was in great demand before 2019 and between the variable qualification, training and preparation of teachers to appropriate the skills necessary to pilot this type of project for education. This action aims to strengthen the autonomy of teachers so that they are the main actors in their courses and master the tools necessary for course scripting and online assessment. This will undoubtedly meet the needs felt by future generations towards digital technology in university and school culture.

VI- Perspectives of the bimodal learning project

The bimodal learning project has a sustainability objective as it tries to create an organizational change in the course exposure. This is why we have put in place a roadmap. The latter is composed of a series of field-oriented actions for the execution of the project and is divided into three main processes:

- Experimentation of our proposal;
- Validation of the project proposal and initiation of students to include it in their educational activities;
- Sharing the results of the project with the network of university education licensing institutions.

❶ Experimentation process

equipment and establish the procedures for organizing the courses on the following levels:

- Attendance management;

- Regulation of learning;
- Evaluation of learning.

② Validation and initiation process

Immediately after the experiment, an impact study will be set up to measure the yield and the level of performance of the model. The results will make it possible to initiate and multiply the qualification of students so that they are able to deploy the bimodal learning model in their future activities.

Project phase	Design	Experimentation	Validation	Generalization
Status	Done	Outstanding	-	-

Figure 5. Status of project processes

Thus, to succeed in the challenges of this project, it seems relevant to us to mobilize the necessary human and material resources. And then to propose the following recommendations:

- Set up a project team in the establishment to document it;
- Establish monitoring and reporting documents on the state of its progress;
- Produce documents for internal and external communication around the project.

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③ Project results sharing process

It is part of the transfer and exchange of good practices with a view to its generalization at the level of establishments within the university network providing undergraduate education training.

VII- Recommendations and support measures:

Finally, the progress of the project which presents as follows:

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