

## LANGUAGE POLICY DISTURBANCES, A DETERMINING FACTOR IN THE SHIFT TOWARDS LAW FACULTIES OVER SCIENCE EDUCATION

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### ABSTRACT

This research focuses on the study of the impact of educational language policy disruptions in Morocco, putting the light on the possible reasons that made students with baccalaureates in science fields change their academic orientation to study law in Arabic at universities. It is based on the results exploited from a defined questionnaire containing questions judged useful that could help us examine our subject from several perspectives, including teachers, university students of Law in Arabic classes and students at The High School of Technology as a higher institution providing scientific subjects. This research reveals a significant issue with Moroccan scientific education, resulting from a lack of clear language policy, decision-making improvisation, and lack of participatory democracy. The failure of Arabization projects, influenced by France's colonial past, has led to students abandoning science for law studies in Arabic, causing dissatisfaction and uncertainty. Ultimately, a clear linguistic planning policy in education is crucial for facilitating learning, ensuring consistency, and standardizing assessment methods and resources, ultimately leading to student success and development.

**Keywords:** students, teachers, language policy, education, science, law in Arabic.

### 1.0 INTRODUCTION

#### 1.1 Background and rationale:

Since 1979, the Moroccan government decided to Arabize science teaching at the primary and secondary levels of school. Nevertheless, he maintained teaching it in French on the level of higher school. This switch in language created great difficulties for both teachers who received their education in French and been required to teach in Arabic, and students who had to learn in French which they do not master. after adopting the project for nearly 40 years, the government chose to drop it without considering the potential consequences of that decision. However, before getting into the core of the issue, it is important to clarify the multifaceted meaning of "Arabization" and identify the various phases of this incomplete project.

Within the translation field, the term "Arabization" is used to refer to the process of translating an idea, a concept, or a message from its original language, into Arabic. In some dictionaries, "Arabization" describes a growing cultural influence on a non-Arab area that gradually transforms into a language that speaks Arabic and/or incorporates Arabic culture and identity (educolingo). Nevertheless, in the context of our study the term Arabization refers to the

introduction of Arabic education and the increased usage of Arabic where French was used before.

In this regard, it should be noted that Morocco was colonized by France and Spain. However, French colonialism was more influential. During the colonial period, France built modern schools, mobilized its country's teachers, and taught Moroccan students in the French language. According to Professor ENNAJI (2005) "The French colonisers made great efforts to dissociate Moroccan society from its indigenous languages and cultures" (P10).

After the independence in 1956, Morocco inherited an educational system which was heavily influenced by the French language and culture. This system was hybrid. On one hand, it preserves Standard Arabic in religious field and linguistic studies, but, on the other hand, science and mathematics were taught in the French language.

In 1958, the higher education council launched a reform project to start Arabizing school education in Morocco, leading to the adoption of the four educational policy principles in 1959: (Unification, Generalization, Moroccanization and Arabization).

In 1980, the first four years of primary school were fully Arabized. In the following years, the process of Arabization continued in the secondary levels of school until the baccalaureate. Unfortunately, no attempt has been made in this regard at the level of higher education where French has been maintained as a language of science teaching. After the adoption of the actual Moroccan constitution in 2011, Arabic and Amazigh are the two official languages in Morocco. This was stipulated by the fifth Article of the constitution that specifies that: "Arabic remains the official state language. The State works for the protection and development of the Arabic language, as well as the promotion of its use. Similarly, Amazigh is an official state language, as a common heritage for all Moroccans without exception" (Constitution, 2011).

Unfortunately, it was decided recently to bring foreign languages back into science education. This decision was explicitly stipulated in articles 2 and 31 of the framework-law 51.17(Framework law, 2019). Thus "Language rotation will be gradually adopted by teaching certain contents or units in one or several foreign languages".

In one of his interventions in parliament, the Ex Minister of higher education Driss Ouauouicha revealed that many students switch majors between high school and university, while 52% of students who obtain a baccalaureate in sciences and technologies, only 15% of them going to science colleges, which he considered a significant loss caused mainly by language. Secondary school Students learn in Arabic, and after the summer vacation they find themselves obligated to study in French (Magazine club de presse). According to some sources, two in three Moroccans fail to complete their education in public universities because they do not speak French (Arabi post, 2019). Other sources stressed that more than 40% of students who enter the university annually enrol in the Branch of Arabic Law, a large proportion of whom have a baccalaureate degree in science.

## 1.2 Statement of the problem:

For forty years, Morocco's language policy has known many disturbances resulting making elementary and high school education parts of an Arabization project. However, science

education in universities is still primarily conducted in French, being fully aware that comprehension and interaction are the cornerstones of knowledge acquisition, many students choose to go on law faculties even with good marks in science classes back to their high school, in order to avoid the nightmare of switching their education language to a one that they do not understand or accept, these contradictions and ambiguities in Moroccan language policies have significant effect on both educators and learners.

### 1.3 Research objectives

The purpose of this research is to focus on the problem of educational language policy disruptions in Morocco, it identifies the issues brought from the missed determination of making the Arabization project that Morocco adopted a complete success, and difficulties generated using a French technoelect that complicates the understanding of students and their interactivity at the university. In this research paper, the analysis concentrates on language of education policy which is primarily a branch of applied linguistics.

In the light of what precedes, we will attempt to examine the government's decisions regarding Arabization, the adopted solutions, the met issues by teachers, and students, the impact of switching between languages on the quality of science education in public school particularly, the ongoing reforms, the prospects, and the proposals.

the research hypotheses consist of the negative impact of switching between Arabic and foreign languages in science classes on students, teachers and on the quality of education, the need for reform of the education system through the Arabization of all cycles of science education, including higher education, or the return to francization or possible Anglicization and probably the adoption of the Moroccan dialect " Darija".

### 1.4 Research questions:

The aim of this study is to answer four crucial questions:

1. What are the reasons that made the Arabization project of science education fails in Morocco to switch back to French?
2. What is the impact of this change in languages on the quality of science education and on the encountered difficulties by students?
3. Are teachers and students affected by this unfinished Arabization project and the floating between languages, and do they prefer to continue it or to return to French as the language of teaching science subjects or probably opt for a drastic change to the English language as the language of science?
4. Is the non-mastery of the French language the cause that pushes scientific students to abandon their field to study other disciplines such as law in Arabic?

### 1.5 Organization of the study

This paper is divided into four chapters. The first one concentrates on the literature related to the floating between Arabization and foreign languages in science teaching. The second focuses on methodology followed to check the hypotheses of this research. The third chapter

is dedicated to the analysis of questionnaires. The fourth is about the discussion of research results. And the last one summarizes the whole study as a conclusion.

## **2.0 REVIEW OF THE LITERATURE**

### **2.1 Introduction**

Our study focuses on the Morocco's language policies disruptions in the field of science education. The literature on this dual language issue in science education has been the subject of several studies and research in different countries. In Morocco, an Institute of Studies and Research for Arabization has been existed for more than 60 years to conduct Arabic research and develop this language. Therefore, the concern regarding francization, Arabization, and the consequences of drifting across multiple languages in science education in Morocco has aroused the interest of several researchers in many ways. Our study focuses respectively on the different stages of the francization of science education, the Arabization project, and the subsequent return to a confusing system of linguistic floating in science education in Morocco and the parallel presentation of the literature relating to each stage.

### **2.2 Science education in Morocco: from Francization to Arabization**

#### **2.2.1 Process of Francization of science education.**

The educational system's legacy in Morocco is considered as one of the oldest and richest systems among the world. The earliest university in Morocco was built in the 9th century, which predates, those of Europe. According to the UNESCO, the university Al Qaraouiyyine of Fez is the oldest in the world this university focused educating on the fields of the Islamic Religion, legal sciences, Classical Arabic, grammar and linguistics, philosophy, astronomy, and mathematics. Internships were completed by multiple famous researchers in a various field, including the geographer Al-Idrisi, the doctor and philosopher Ibn Tofail, the traveller Ibn Batouta and the social scientist Ibn Khaldoun. Furthermore, thousands of students have frequented Koranic schools and Maderises in this university.

Before the French protectorate in Morocco, all regions of the kingdom had a religious-based education, it was called Muslim education (MEDDIKI & Ait Brik, 2011). In 1912, Morocco was colonized by France and Spain. However, French colonialism had more influence, at that time, France built modern schools, mobilized its country's teachers, and taught Moroccan students in the French language. Lyautey's objective was to train Moroccan students to form elite (Vermeren, 2011/1 (n° 39)) capable of serving France's interests and act as intermediaries between the French and the local population. In this regard, different types of schools have been established:

- The French cultural mission schools reserved for the children of the ruling classes who played the role of a link between the residence and the Makhzen.
- The free schools "Madaris Horra": proposed to renovate Arab education and revive the "Arab-Muslim" civilization. Schools were created throughout all the cities of Morocco. The used language was Arabic; and the teaching included a few hours of French.
- Vocational schools: used to train agricultural workers in the countryside.
- Traditional religious schools.

- Israelite schools and others (LHAIBA).

After independence in 1956, Morocco inherited an educational system which was heavily influenced by the French language and culture.

## 2.2.2 Arabization of science education in Morocco.

Following its independence, Morocco, like many other countries, particularly those in the Middle East and North Africa, was confronted with significant domestic issues, headed by nationalist militants who considered Arabic as the sole language that permits the unification of the Arab people. In addition to that, the circumstances were much more complicated in Morocco. Two currents were emerged: one militating for Arabization and the other for the recognition of the Amazigh language, in teaching at schools and in public administrations and other spheres, since it is essential on maintaining the national unity, choosing the national language is one of the most important issues to resolve. Thus, Government has long promoted Arabization as a nationalist platform.

Arabization was designed on the one hand, to unify Moroccans through a common language rooted in religious identity, and on the other hand, to cement unity, or at least solidarity, with the broader Arab world. Arab nationalists in Morocco perceived Arabization as a necessary process towards affirming Morocco's status as an Arab nation.

In its first constitution, which dates from 1962, as well as those of 1970 and 1972, Morocco enshrined the classical Arabic language as the official language of the country; however, French remained the language of school, administration, business and even communication in several spheres. The first attempt to Arabize the school dates to 1958, when the higher education council opened a reform project within the framework of the five-year plan. In 1959, the four principles of educational policy were crystallized: unification, Arabization, generalization, and Moroccanization.

After the first Arabization conference was held in Rabat, in April 1961, the year in which the "Permanent Arabization Coordination Office" was established, the second Higher Education Council was convened on October 18, 1962, and was chaired by the king Hassan II. This council worked on the project of the Ministry of National Education, which settled on gradual Arabization; He ended by emphasizing the demand to make the language of instruction in the Moroccan school - for all subjects - the Arabic language. This government's decision has come up against a major problem: the shortage of Arabic teachers, Many Egyptian and Saudi teachers were therefore imported and hired in a hurry to fill the gap, but at the same time they took advantage of it to transmit their Wahhabi values and Islamized education.

This situation of language education in Morocco reflects, as it was expressed by (Hannouchi, 2018), "a complex interplay between ethnic diversity/identities, political interests, and language ideologies and attitudes" (p.1).

In 1980, Arabization was completely adopted on the first four years of primary school. Subsequently, the Arabization of science education was extended to the high school. But this Arabization has affected particularly to public schools, while private schools have preserved a privileged place for the French language. This situation was in favour of the wealthy social

class who had the means to access it and adapt easily to science education at the university level. Nevertheless, students from public schools have a mediocre level in French, which discouraged them from pursuing science and technology studies at university and pushed them to do other disciplines in a language they mastered better than French, especially law studies in Arabic.

## **2.3 The preservation of French language in science instruction and the floating between different languages.**

### **2.3.1 Maintaining the French language in science instruction at the university.**

In the last 40 years ago, The Moroccan government decided, to Arabize science instruction. he oversaw the training and adaptation of teachers, as well as the change of study programs. But this Arabization policy was limited to primary, secondary, and high school. Nevertheless, at university, the government maintained French as a language of teaching and learning sciences.

In this context, both teachers and students find themselves in a complicated situation, knowing full well that learning knowledge is based on understanding and interactivity. While the French technoelect used in higher education is not accessible to students. Therefore, some teachers find themselves forced to use dialectal Arabic "Darija" for the explanation of some parts of the lessons to help students in their comprehension efforts, while other teachers categorically refuse to use a language other than French.

According to a study conducted by Messaoudi, (2016) , student comes to the university with a majority Level A1 (basic), but the required level is at least B1-B2 (Intermediate). The result is a difficult understanding of course content for students who do not even master the language common general.

### **2.3.2 The return to the francization and floating between different languages.**

After the decision of gradually adopting foreign languages in some contents or units as stipulated by the framework law 51.17 of 2019, In an interview with Hiba Press, OUDGHIRI (2019), an expert on Moroccan linguistics, said: "Arabization in Morocco has not failed, as the fallacious promotes. It was successful in primary and secondary school, and then it was deliberately suspended so as not to continue its success, and so that there would be a break with the university level that people rejected... The evidence is that there are so many engineers, doctors and other higher frameworks that succeed and graduate in all disciplines, and other numbers get their certificates in Morocco and then migrate to work in Europe and elsewhere every year, as the Minister of Education himself admits (600 engineers each year). (AKHBAR, 2019). Nevertheless, the Arabic language will be gradually replaced by French, although the law provided for a float between the two languages in science teaching.

In this regard, it should be noted that other authors and researchers propose other solutions. Fouad Laroui evoking in his book "The Moroccan Linguistic Drama" the problem of diglossia had proposed among the solutions to recognize the place of Darija in the life of Moroccans and grant it the status of official language (Laroui, 2011).



Lahlou and others suggested that at the stage Fundamental to the education system, disciplinary knowledge is co-constructed via a building language skill that suit him. It is in this orientation of reciprocity that it was proposed a description of activities and predispositions to be adopted for a more effective and better oriented teaching of French (LAHLOU, 2018).

## **3.0 RESEARCH METHODOLOGY**

### **3.1 Introduction**

There is no doubt that language switching from Arabic in primary, secondary and high school to French in college education has made teaching or learning sciences in Moroccan faculties a major issue, it is one of the main reasons why students rush towards law faculties that accepts Arabic education.

Being aware of this issue, some instant measures have been taken by school managers and teachers to guarantee a linguistic transition between the different cycles of study. Thus, in public schools, teachers do not use classical Arabic in science education, but often the Moroccan dialect and French to explain the lessons to students. Whereas, in some private schools' scientific subjects are taught separately both in the classical Arabic language and in the French language.

This delicate situation has favoured private schools students to the detriment of public schools ones, who generally have a modest level in the French language, this deficiency does not allow most of students to follow courses in higher education and turns into a factor of blockage and demotivation for them to continue studying sciences, and change their orientation because of that into disciplines where Arabic is the primary and official language of teaching, particularly law disciplines that attracts every year in Morocco significant numbers of students because of that.

Under these circumstances, students in private schools who receive strong instruction in the French language benefits from the situation in higher education and have more options when it comes to choosing the field of college studies. Furthermore, there is a high demand for people who master the French language in the Moroccan employment market. And, French is considered as sign of prestige and became the mother tongue of children from the high class in some big Moroccan cities such as Rabat, Casablanca, Kénitra, Marrakech and others, this gives those who are financially able to attend private schools that teach subjects in French a significant advantage than the majority of Moroccan students.

In order to explain and address the study topics, the choice was made on the quantitative method based on non-random sampling and a questionnaire comprising essentially multiple-choice questions as developed below.

### **3.2 Foundations of Research: Design and Sampling**

#### **3.2.1 The research design**

To answer the main research questions, the quantitative approach was chosen. We had to create a questionnaire that consists essentially of closed questions in the form of multiple choice for

High school science class's teachers, the High School of Technology of Salé students and the students registered in the branch of Law in Arabic language at the Faculty of Legal, Economic and Social Sciences of Salé. Three questionnaires were sent online to teachers and students concerning the languages used and preferred in scientific disciplines, the difficulties encountered relating to the floating between different languages and the suggested solutions.

### 3.2.2 The research sample

A non-random method was adopted for sampling in this study. Three different populations were chosen. Firstly, the population of teachers (411 respondents) of science subjects in High schools across the different regions of Morocco. Secondly, the population of science baccalaureate holders enrolled in the open access Faculty of Legal, Economic and Social Sciences of Salé to study law in Arabic (453 respondents). The third population is composed from students at the Higher School of Technology of Salé as a Limited access institution who pursue studies in purely scientific branches in French (230 respondents).

Reasoned choice sampling was adopted to answer the major questions that concern us in the context of this research. Volunteer teachers and students responded to the questionnaires online through "Google Forms".

## 3.3 Data Collection Instruments

### 3.3.1 Description of Questionnaires

Three questionnaires were distributed, the first questionnaire established in French was sent to teachers of science subjects in the various academies of the Kingdom. The second questionnaire addressed to the students at the High technology school of Salé established in French was sent to the students through the channel of social networks. The third questionnaire addressed to students holding a science baccalaureate enrolled at the Faculty of Legal, Economic and Social Sciences of Salé, drawn up in Arabic was sent to the students by the social media channel.

### 3.3.2 Data Collection Procedure

Data collection was carried out using automated questionnaires that were shared using the "Google Forms" application. The questionnaires were made using that application before sent by Email, WhatsApp, and Facebook. Participants were able to easily access and complete the questionnaires at their convenience. The use of this digital platform for data collection ensured a quick and efficient process, allowing for a larger sample size to be reached in a shorter amount of time. Results were automatically compiled and analysed in real-time, providing instant insights for the research project.

This method of data collection also allowed for a wider reach, as participants from different geographical locations were able to participate. The ease of accessibility and convenience of completing the questionnaires online likely contributed to a higher response rate. Additionally, the use of "Google Forms" helped to minimize errors in data entry and analysis, as responses were automatically recorded and organized. Overall, the use of technology in data collection proved to be a successful and efficient approach for this research project.



## 4.0 DATA ANALYSIS

This chapter will be reserved for presenting and analysing collected data from the science subjects' teachers across the Kingdom's academies, as well as obtained data from the students at the High technology school of Salé and the students at the Faculty of Legal, Economic and Social Sciences of Salé.

### 4.1 Presentation of the concerned establishments

#### 4.1.1 The Faculty of Legal, Economic and Social Sciences of Salé:

The FLESS of Salé opened its doors in 1999. It comprises 03 departments, Public Law, Private Law, Economics and Management. It offers 18 programs in different domains, among them there are public law, Private law, Banking professions, Insurance, Entrepreneurship, Business law, and other programs.

It has today more than 14845 students led by 97 research teachers and 71 executives and administrative staff.

#### 4.1.2 The High School of Technology of Salé:

The High School of Technology of Salé (HSTS) is a part of the Mohammed V University in Rabat. This institution opened its doors at the beginning of the 1993-1994 academic year. It is structured into four departments: Urban Engineering and Environment, Management Techniques, Industrial Maintenance, and IT. These departments provide 10 technical university degrees (DUT) programs and professional licences (LP) programs in initial training.

The HSTS has important infrastructures and mobilizes 84 permanent teachers, 96 Administrative staff, 1300 students in DUT and 120 students in LP. it provides education and training in the fields of Civil engineering, Computer network, administration, Construction and building, Energy, Electric engineering, Management, Big data, and Logistics.

### 4.2 Results of the students' questionnaires

#### 4.2.1 Characteristics of studied population:

Institution Element	Faculty of Legal, Economic and Social Sciences	High School of Technology
Number of reached students	<ul style="list-style-type: none"><li>• 453</li></ul>	<ul style="list-style-type: none"><li>• 230</li></ul>
Nature of classes	<ul style="list-style-type: none"><li>• Law in Arabic</li></ul>	<ul style="list-style-type: none"><li>• Science classes</li></ul>
Gender	<ul style="list-style-type: none"><li>• 59% Female</li><li>• 41% Male</li></ul>	<ul style="list-style-type: none"><li>• 57% Female</li><li>• 43% Male</li></ul>
High school nature	<ul style="list-style-type: none"><li>• 97% Public</li><li>• 03% Private</li></ul>	<ul style="list-style-type: none"><li>• 81% Public</li><li>• 19% Private</li></ul>

High school science classes language	<ul style="list-style-type: none"> <li>• 71% Arabic</li> <li>• 16% French</li> <li>• 12% Both</li> <li>• 01% Other languages</li> </ul>	<ul style="list-style-type: none"> <li>• 32% Arabic</li> <li>• 52% French</li> <li>• 16% Both</li> </ul>
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The questionnaire reached 453 students at the Faculty of Legal, Economic and Social Sciences of Salé, of whom 59% females and 41% were males. And 230 students at the Salé High School of Technology, who were 56% females and 43% were males. Most students on both institutions came from public high schools, nevertheless, while almost all students of FLESS (97%) came from public high schools, only 81% of them are in the HSTS.

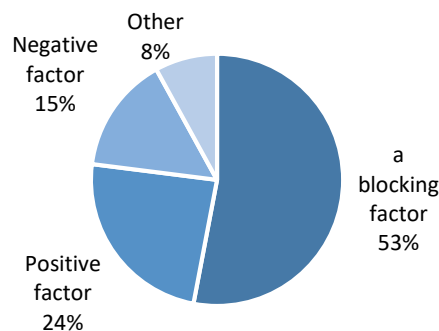
Regarding the scientific subjects in the secondary level, the majority of FLESS student (71%) said they had pursued studies of scientific subjects at the high school in Arabic, and 16% of them studied in French. this situation in reversed concerning HSTS student, the majority of its students (52%) declared studying scientific classes in French while only 32% of them studied in Arabic.

#### 4.2.2 Findings:

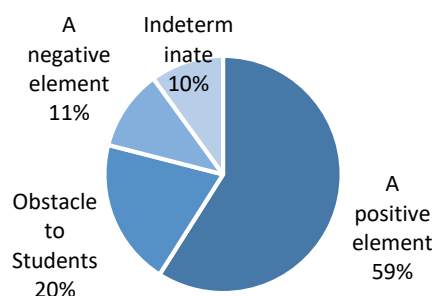
The exploited results of the questionnaires are like bellow.

**- Do you think that keeping French to teach scientific subjects in university education is a positive decision, negative decision, obstacle to the student, or other?**

**Figure 01: Opinions about the maintaining of French in University (FLESS)**



**Figure 02: Opinions about the maintaining of French in University (HSTS)**

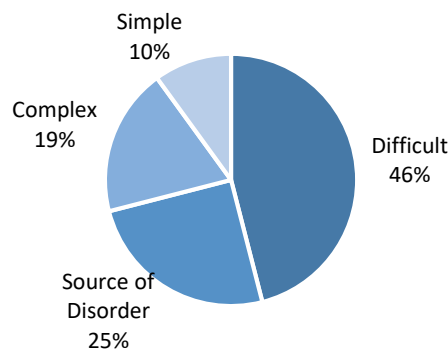


As shown by the upper figures, When students of both institutions are asked about their personal opinions of keeping French in teaching scientific subjects at the university, the opinions are completely at odds with one another; while 53% of FLESS students assumes that keeping it in university studies is a blocking factor for them, and only 24% of them consider it a positive factor against 15% of students that think it is a negative factor, HSTS student report the reverse to be true, Most of them (59%) believe that the maintaining of the French language in teaching at higher education institutions is a positive decision. while 31% of them consider it either as an obstacle in front of students or a negative element.

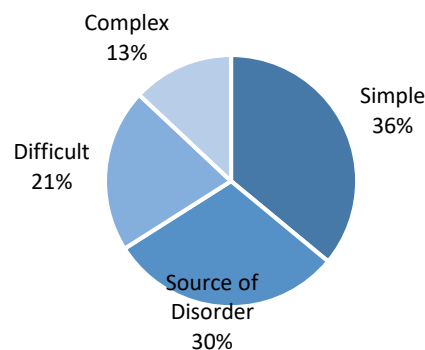
As a result, the majority of HSTS students supports the maintaining of French as the language of instruction of scientific subjects at university because a good part of them manage to adapt to the French language, while the majority of FLESS refuse that decision.

### - How do you evaluate the transition from Arabic to teaching scientific subjects in high school to French at the university?

**Figure 03: FLESS Students' evaluation of the transit Arabic to French**

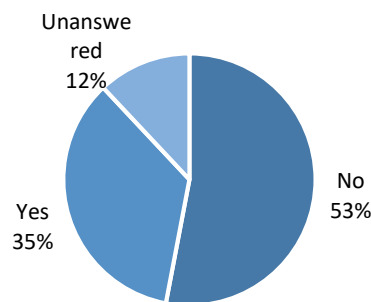


**Figure 04: HSTS Students' evaluation of the transit Arabic to French**

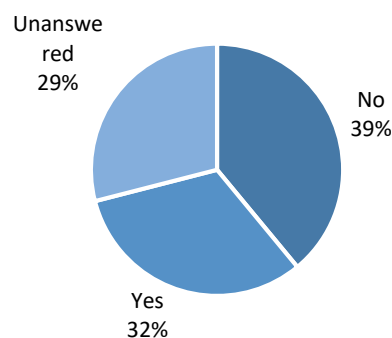


### - Do you regret learning scientific subjects in primary and secondary school in Arabic?

**Figure 05: FLESS Students' Feeling about studying science subjects in primary and secondary schools in Arabic**



**Figure 06: HSTS Students' Feeling about studying science subjects in primary and secondary school in Arabic**

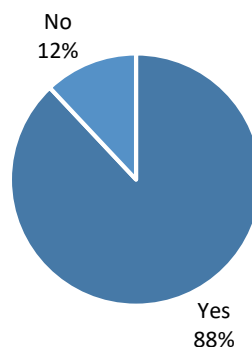


Although FLESS students' feelings about learning scientific subjects in primary and secondary school in Arabic were varied, most of them say that they do not regret it (53%).

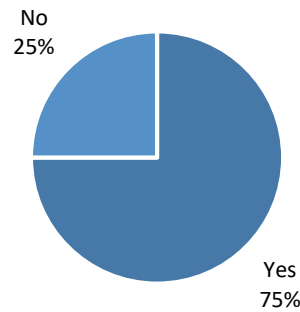
Of the students at HSTS, 39% do not regret that, 32% regret it, while the rest of student did not answer this question.

**- Are the language difficulties associated with not being able to speak French an obstacle to social and professional integration?**

**Figure 07: FLESS Students-Relationship between difficulties with French language and social and professional integration**



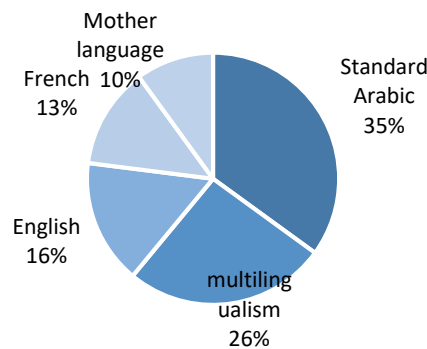
**Figure 08: HSTS Students-Relationship between difficulties with French language and social and professional integration**



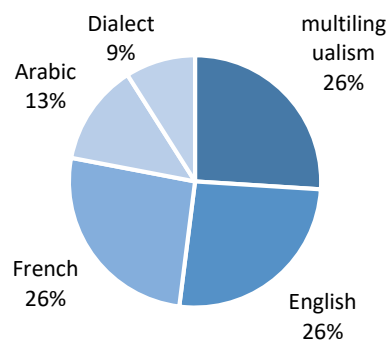
Both FLESS students and HTSS pointed out that language difficulties are a handicap for academic success as well as for social and professional integration with respectively 88% and 75%.

**- What is the best linguistic way to learn scientific subjects?**

**Figure 09: Suggested languages of teach science subjects (FLESS students)**

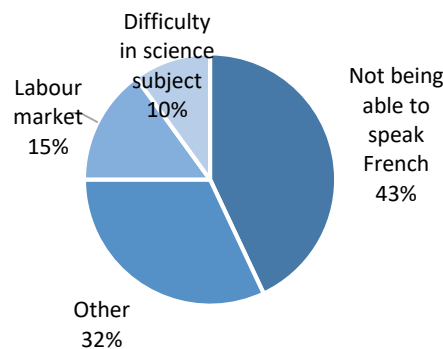


**Figure 10: Suggested languages of teach science subjects (HTSS students)**



**- What is the factor that led you to change course and choose the law in Arabic even though you have a baccalaureate degree in science?**

**Figure 11: factors that push student to abandon scientific field**



One other question was directed specifically to FLESS students to learn more about the reasons behind their decision to switch their academic orientation from science, in which they hold a baccalaureate degree to law in Arabic when registered at the university, the majority of them represented by 43% of students responded that their inability to speak French was the primary factor influencing their decision.

### 4.3 Findings of teachers' questionnaires

#### 4.3.1 Characteristics of studied population:

Element	Values	
Number of reached teachers	<ul style="list-style-type: none"> <li>411 Teachers</li> </ul>	
Age	<ul style="list-style-type: none"> <li>20 to 30 years 22%</li> <li>31 to 40 years 31%</li> </ul>	<ul style="list-style-type: none"> <li>41 to 50 years 20%</li> <li>Over 50 years 27%</li> </ul>
Nature of classes	<ul style="list-style-type: none"> <li>Science and Life 45%</li> <li>Mathematics 31 %</li> </ul>	<ul style="list-style-type: none"> <li>Physics and Chemistry 24 %</li> </ul>
Professional seniority	<ul style="list-style-type: none"> <li>Less than 05 years 23%</li> <li>06 to 10 years 17%</li> </ul>	<ul style="list-style-type: none"> <li>11 to 15 years 18%</li> <li>Over 15 years 42%</li> </ul>
Academic formation	<ul style="list-style-type: none"> <li>Deug (Baccalaureate+02) 08%</li> <li>Licence (bachelor) 54%</li> <li>Master 22%</li> </ul>	<ul style="list-style-type: none"> <li>Doctorate (PHD) %6</li> <li>Other 10%</li> </ul>
Language in which teachers studied	<ul style="list-style-type: none"> <li>French 66%</li> <li>Arabic 08%</li> </ul>	<ul style="list-style-type: none"> <li>Both 26%</li> </ul>

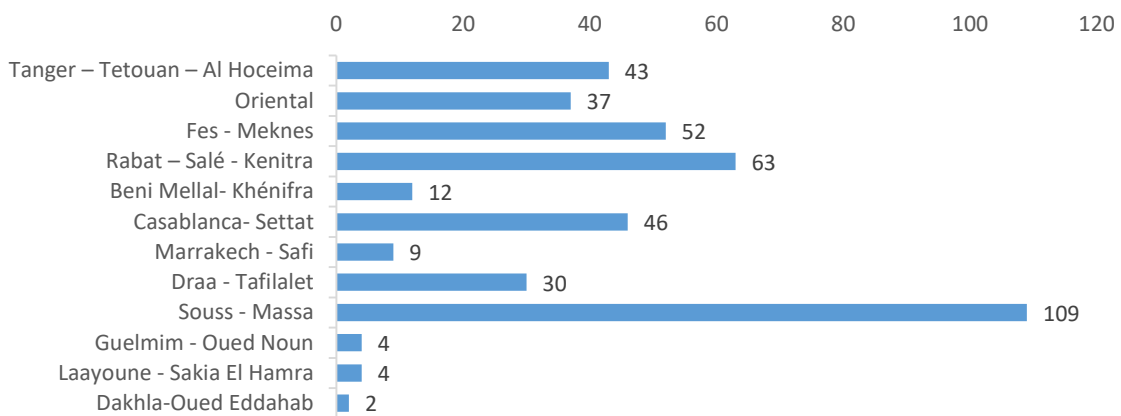
In this study, questionnaires were shared through social networks, friends, and colleagues to teachers of scientific subjects from the various academies of the Kingdom. They allowed us to collect the following data.



The questionnaire reached roughly 411 respondents. This number remains insufficient and unrepresentative. However, it should allow us to have some conclusions regarding their perceptions of the language used in the teaching of scientific subjects, difficulties encountered and the solutions they propose.

The following diagram shows numbers of teachers who responded to this questionnaire by regional academies of belonging.

Figure 12: Distribution of teachers by regional academies of belonging



Teachers from the regional academies of Souss Massa, Rabat-Sale Kenitra, Fes Meknes, Casablanca Settat, and Tanger Tetouan Al Hoceima, were the most numerous to answer the questionnaires.

4.3.2 Results

The analysis of the answers of the professors interviewed made it possible to obtain the following data for different questions:

Figure 13: Language used by teachers in teaching science subjects

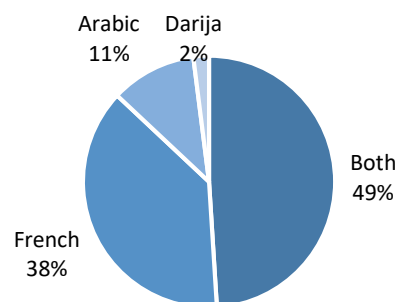
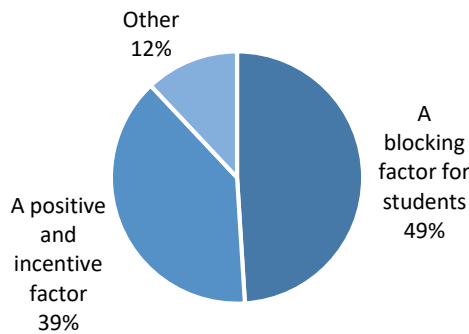


Figure 14: Teachers’ perceptions of the Arabization of science education.



Of science class’s teachers in high schools, 49% said that while interacting with students, they use both Arabic and French. 38% of them emphasized that they spoke solely French. and Only 11% of respondents, said that they spoke Arabic.

Approximately 94% of educators who responded to our questionnaire on whether they see flaws in students' oral and written French expression said that students struggle most with French technolect in class. On the other hand, just roughly 4% of respondents said they did not see any deficiencies.

According to 49% of respondents, instructors believe that the choice to Arabize scientific instruction is a barrier that keeps students from learning. Still, 39% see that choice as motivating and constructive.

Figure 15: Teachers’ perceptions of the Arabization of science education.

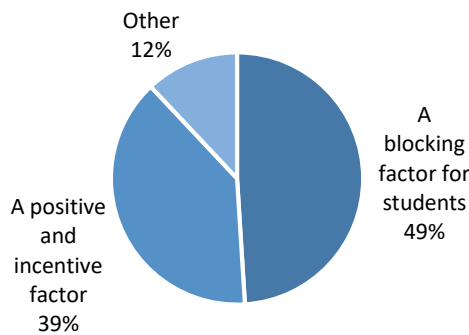
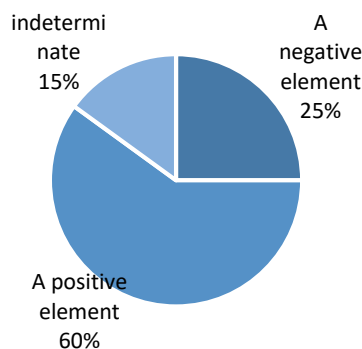
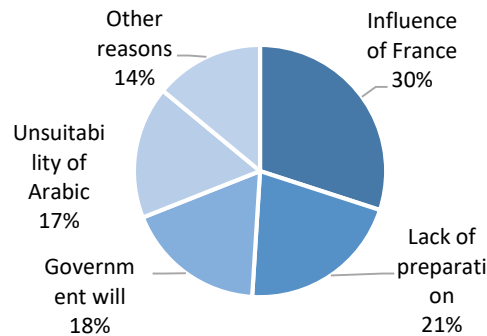


Figure 16: Teachers’ perceptions of the maintenance of French at university



According to 49% of respondents, instructors believe that the choice to Arabize scientific instruction is a barrier that keeps students from learning. Still, 39% see that choice as motivating and constructive. On other hands, and one of the questionnaire’s most unexpected findings is that most teachers, roughly 60% of them, thought it was a good thing that the university continued to use French while teaching scientific courses.

Figure 17: Causes of the failure of the Arabization project of education in Morocco



Among the concerns posed were the reasons for the collapse of Morocco's school system's Arabization initiative. 30% of the respondents blamed the project's failure on France's influence. 21% of the responses blamed a lack of preparation, while 17% pointed to the inappropriate use of Arabic as the reason for the failure. 18% of those surveyed blamed the government's decision for the project's failure.

Figure 18: Teachers’ perception of the Arabization project of the science teaching in the past.

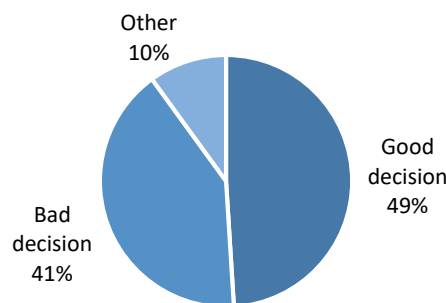
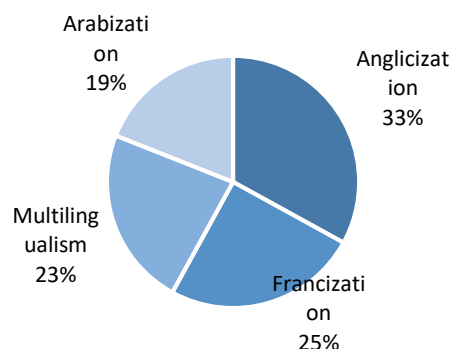


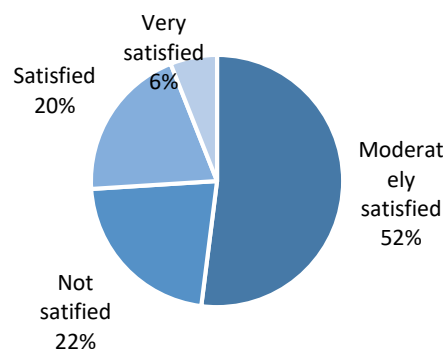
Figure 19: Language proposed by teachers for science subjects learning.



To the question “what do you think about the Arabization project of the science teaching in the past?”, the answers were as follows: 49% of the respondents estimated that it was a good decision while 41% of respondents thought it was a poor choice.

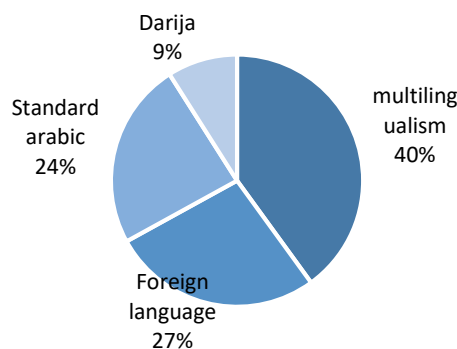
Regarding the terminology they recommend using to teach scientific classes, the teachers were questioned. 33% of them said they preferred the Anglicization. 25% of respondents supported francization, while 23% emphasized their preference for multilingualism. Regrettably, only 19% of them expressed a want for Arabization.

**Figure 20: Teachers’ perceptions concerning the measures decided in law 51-17**



The teachers were asked also about their satisfaction with the measures decided in the law 51-17. over 52% of teachers declared their moderate satisfaction; 20% were satisfied and 6% were very satisfied; however, 22% were unsatisfied.

**Figure 21: teachers’ suggested languages for science education**



Targeted teachers also received one open-ended question in addition to these. The question was, "What challenges do you have teaching science in the face of language disruptions brought on by political decisions, and what remedies do you suggest?"

There were four main challenges brought to light by the responses given; the first is the weak student performance as well as some teachers concerning their French Technolect, the second challenge is insufficient student involvement in the classroom, the third is communication issues, particularly with oral communication and difficulties in understanding, and the fourth challenge is the lost time translating from French to Arabic because students who were taught Arabic in school find it difficult to transition to the French language in high school.

Lastly, the suggested actions that were offered by teachers to improve the quality of education and surpass language challenges were the implementation of a solitary language and ensure its consistency in time, some participants are for the Anglicization of all levels in science education and some others are in favour of Multilingualism across all cycles.

## 5.0 DISCUSSION

This study initially intended to clarify certain questions in relation with the causes of the failure of the Moroccan Arabization project of science education and the impact of linguistic policy disruptions on students abandoning their science orientation in universities to rush to law faculties. It aimed also to identify what were the causes that push scientific students to do that. It was also an occasion to launch a serious reflection in order to address the challenges produced by the dilemma over which language to be adopted in the teaching sciences in Morocco.

Answers to the different questions posed and validation of some of the previously defined study hypotheses were made feasible by the collected data. The empirical findings further support the hypothesis that the shifting focus between Arabization and Foreign Languages in Science classes has an impact on teachers and students. Still, a few questionnaire findings are unexpected.

According to the obtained results, the vast majority of students in FLESSS and HSTS reported having studied science in Arabic throughout their high school years. Nearly every student attended a public school, and teachers attested to their poor proficiency in French. High school students who were taught Arabic in elementary school find it difficult to transition to French. They struggle in diverse ways to speak, write, engage in class, and comprehend. Some responses claim that teachers lose a significant amount of time translating.

Several researchers have already examined the issue of students' low level in French, such as Prof. Messaoudi, (2016). In the same vein, it should be mentioned that the majority of the students believe that the maintaining of the French language in teaching in higher education institutions is a source of disruption and considered as an obstacle for their studies and the main factor that led a good part of them to change the branch of study and choose the law in Arabic even though they have a baccalaureate's degree in science lies in their inability to speak in French.

Some of the students do not regret having pursued studies in science in secondary school in Arabic. However, they pointed out that language difficulties are a handicap for academic success as well as for social and professional integration. Surprisingly, they also suggest maintaining of foreign languages, multilingualism and particularly Anglicization as possible solutions to this issue. Besides, most of these students are for maintaining of the French language in teaching in higher education institutions and consider that a positive decision.

Teachers, on the other hand are also in favour of keeping French in high studies. They estimate that the past decision of Arabization was a bad decision and that it constitutes a blocking factor for students.

One of the most important and controversial conclusions drawn from this research is that teachers interact with students in both Arabic and French during classes, and some even use the Moroccan dialect "Darija". This method is in fact anti-pedagogical because it makes

students unable to master technoelect used in their field nor prepare their integration at university and professional activities.

This research also made it possible to focus on a major question, specifically, to see the causes of failure of the Moroccan Arabization project of education are this research revealed that among the causes there are the influence of France, which is a responsible of the failure of that project and the will of the Moroccan government. This result is terribly disappointing. At the time when people thought that Morocco is independent and that it preserves its sovereignty, the fact remains that the decisions taken by the power do not arouse the satisfaction of either the students or their teachers.

However, the research highlights some inconsistencies within students of FLESSS and HTSS. For instance, the majority of FLESSS' students estimated the maintaining of French at university as a blocking factor while the majority of HSTS' students judge it as a positive factor. The same observation was found concerning the solutions they proposed. The majority of FLESSS' students proposed the Arabization as the way to teach science subjects while the majority of HSTS' were in favour of foreign languages.

## **6.0 GENERAL CONCLUSION**

### **6.1 Summary of key findings**

The outcomes of the questionnaire show that there is a serious issue concerning the language or rather the languages which are used in the teaching of scientific subjects in Morocco. For students, the language has taken a demotivating or even disabling factor. This situation was the result of the lack of a constant clear language policy and rational planning, improvisation in decision-making, deficiency on participatory democracy and the absence of a long-term vision.

Every time a new language of instruction—or simply a switch between languages—is presented, both Students and teachers must adjust. These disturbances are not without effect. Teachers who have studied in one language are sometimes forced to teach in a new language that they do not master. Students are also required to make transition between different languages during their classes. The result is evident, It is the deterioration of the quality of education particularly in public school.

The main results of this study demonstrated that the effort of Arabizing scientific education was a failure and was mistrusted by both teachers and students, with detrimental effects. This research has shown that the impact of France as an old colonizer is one of the reasons for the failure of the Arabization project of education in Morocco. This observation denotes a certain incompleteness of the sovereignty of the State. The mixture of languages used in teaching and floating between different language policies have turned into a blocking factor in front of students and push an important part of them to abandon science field in order to pursue studies in law in Arabic language. And the dissatisfaction with the measures decided in the language policy, which is set without the involvement of professionals in the sector, portends a dark and uncertain future.

### **6.2 Recommendations and suggestions**

In the light of the above, it was considered useful to make the following suggestions with the hope that they would have an echo. First, it is necessary to involve professionals in the field on reflections and decisions. This would ensure that strategic choices and decisions are supported



by in-depth information and expertise. Second, the Government must consider the needs and expectations of teachers and students and take the necessary measures to satisfy them. This will lead to a more effective and successful education system overall. Third, to prevent disruptions brought on by frequent changes, the government must adopt a unified language for the teaching of scientific subjects at all study levels. This will not only provide consistency in the curriculum but also make it easier for students to understand complex scientific concepts. By ensuring that the language used in teaching science subjects remains constant, the government can help students build a strong foundation in these subjects from an early age. This stability will ultimately contribute to a more effective and successful education system, as students will be better equipped to excel in their studies and pursue careers in the field of science and regulate the orientation to law fields to leave it just for those who really want to do serious carrier on that domain not just because it is taught in Arabic.

To sum up, it is necessary to have a clear policy in linguistic planning in order to stabilize the language of teaching and to facilitate learning for students. This will create consistency and coherence in the education system, allowing students to fully grasp concepts without confusion. Additionally, a clear language policy will also help in standardizing assessment methods and resources. Overall, a well-thought-out language policy in education is crucial for the success and development of students in the long run.

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