

Le système français d'enseignement supérieur : aspects démographiques et économiques

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THE FRENCH HIGHER EDUCATIONAL SYSTEM :
DEMOGRAPHIC AND ECONOMIC ASPECTS

Synopsis

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SUMMARY

After one period of significant increase, the number of students of the French higher education stagnates. It should remain stable within the next few years because of the already known levels of fertility and the evolution of the enrolment role. The population distribution of the students shows a singularity of the French system, which is remarkable because a diversity of institutions act upon different missions. An economic approach makes it possible to evaluate the evolution of the Gross domestic product's part devoted to higher education. That proportion seems to be inadequate given the needs for the future.

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In every country, the economic and cultural future mainly depends on knowledge. That is particularly true for France. Indeed, it remains economically favored by agriculture and tourism, because it benefits from a soil that can be tilled for a large variety of crops, and an exceptional tourist patrimony. But the energy resources of the French subsoil are low and thus cannot ensure an economic future, whereas they may represent a considerable contribution for some countries of the Middle East, the Central Asia, as well as for Russia, some African countries or Norway.

Contrary to these countries, France cannot hope to benefit from a rent economy, characterized by nearly certain future resources because of significant energy reserves. Thus, the future place of France in the economy (currently the fourth one in regard of wealth) and in the culture (with arts and literature keeping worldwide famous) depends mainly on its human resources. The future French success thus hangs on future working population, on those who are prepared by the higher education, which has to transmit know-how, ways of acting and of developing.

That's why it is so meaningful to examine its higher educational system and its evolution. We will successively deal with two major points of view : demography and economics.

The end of the population growth

Let us first focus on the number of students in the French higher education. Its evolution has known a significant change since the 60's. In the 60's, 70's and 80's, an increasingly high growth of the number of students occurred: it grew from 0,309 million in the year 1960-1961 to nearly 2 million in 1992-1993 (figure 1), that is to say a multiplication higher than six (+629 %).

That increase can be explained by two factors. On the one hand, there was a rise in the number of 18-24 years old, who provide the students of higher education. At the end of 1960, there are in France 3,93 million people aging that much. They are 6,054 million at the end of 1992, that is to say an increase of 54 % (figure 2). The second factor is the growth of the enrolment rate in the higher education. It is evaluated by considering the number of students in comparison with the number of 18-24 year old. This ratio, expressed as a percentage, rose from 7,9 % in the year 1960-1961 to 32,1 % in the year 1992-1993 (figure 3).

That substantial rise in the number of students is thus due to the growth of the enrolment role in the higher education rather than the demographic growth of the generations considered. Since 1992-1993, the evolution has been fully different. The number of students has stopped growing. In 1995-1996, the maximum of 2,141 million students is reached, then the number of students remains each year between 2 millions and that highest level. That highest level is explained, like the previous forty years evolution, by two factors: on the one hand, there has been a fertility decline, which has led France to be under the population replacement since 1974. Therefore, there has been a decrease in the generations concerned by higher education.

On the other hand, the enrolment role in the higher education keeps growing, but its growth is much less important compared to the former decades. As a result, the positive effect of the enrolment role is cancelled by the negative impact of the demographic decline. According to these evolutions, what is the demography of higher education in the beginning of that new century? To better know that demography, we can exam two things : the repartition of the students according to structures' of the higher education in which they are registered, and the repartition of students according to scientific subjects'.

The diversity of the structures

First of all, we can notice a French peculiarity. The 80 Universities in France are only a part of the higher education : in 2000-2001, a little less of two thirds of the students are registered there, that is to say 61,1 % of them. These students are distributed according to three cycles' of the universities (figure 4), with a differentiated evolution. The number of the students of the first university cycle falls relatively, in particular because of the less important fertility occurring since the 70's. They were - 0,5 % in 2000-2001 against - 1 % in 1999-2000, and that lower decrease can be explained by two reasons.

On the one hand, the rate of success in the year 2000 to the baccalaureate reaches a record. On the other hand, there was in 2000-2001 a more significant admission of not graduated foreign students but owning equivalent degrees. In the second cycle of universities, the number of students varies a little, increasing slightly in 2000-2001 after having slightly decreased in 1999-2000. On the other hand, the number of students in the third cycle of universities (those who have gone during 4 years to university), increases regularly (+2,9 % in 1999-

2000 and +3,8 % in 2000-2001), because of the average lengthening of the education.

Beside two thirds of students registered in the three cycles of the universities, a third attend other institutions. A part of them, that is to say 20,4 % of the totality of the students are educated at three types of different structures (mainly of first cycle) : Sections of High-level technicians (11,3 % of the students), integrated into secondary schools; University Institutes of Technology (5,6 %), usually attached on an administrative level to the universities but having a significant autonomy; and Preparatory Classes for the competitive examination to the French « Grandes Ecoles » (leading French Business or Engineer schools) (3,5 %).

Moreover, 3,7 % of the students are registered in one of the 29 University Institutes of Training of the Teachers: those establishments with particular statute are in charge of the training of primary and secondary schools teachers. Lastly, a rather significant proportion of students, so 14,8 % of them, go to the « Grandes Ecoles ». Those do not have the statute of universities and their legal nature differs according to whether they depend or not exclusively on the State.

Twelve Institutes and external schools are under the supervision of the ministry for national education: the four national Institutes of applied sciences and three central Schools, 23 educational institutions with particular statute (like the College of France, the Institute of Political Studies of Paris, four higher Teacher training schools) and 38 public institutions, among them around 20 schools of engineers like the higher national School of electronics and of its applications to Cergy. Other establishments depend on non-under state control institutions, like the Chambers of Commerce, or are private.

All that is the result of a particular story of higher education in France. The French system has been characterized during a long time, de facto, by a specialization of the establishments. The Large schools and the higher education court developed, since the years 1960, aimed at the productive sector or, for some Leading schools, of employment in the higher administration or the nationalized companies, whose significant economic weight has, since, decreased with privatization. All that part of the formation thus led to professions relatively definite in advance, that is why it is called "vocational training".

The latter is distinguishable from academic education, which is a prerogative of the universities and mainly prepared to the work of teaching (letters and sciences), the entrance examinations to the public administration, and the liberal professions. Even if that is still true, things have changed since the 70's, due to the strong growth of the number of students in the universities and the creation of new university diplomas preparing for professions in the private productive sector.

On the one hand, usual teaching of the universities that was founded on academic subjects, has evolved with the setting of formations leading to professions other than teaching or the public administration. On the other hand, the universities created new vocational teaching, allowing to prepare for one particular economic activity.

The distribution by universities and subjects university.

The demographic analysis for the universities can be more accurate, first of all by considering their distribution in four demographic slices according to the number of their students. In the first, there are five universities having between more than 30 000 students and less than 40 000 (figure 5). In a second one, 28 universities have between 20 000 and 30 000 students. Except the University of Paris-Sorbonne, they are usually multi-field universities having known a strong increase of the number of students during the last decades, as did the University of Nice-Sophia-Antipolis, or major scientific universities.

Then 30 universities have between 10 000 and 20 000 students. Lastly, the 17 universities having less than 10 000 students are universities created rather recently, often specialized in literature and right, or universities unable to have too many students because of their geographical location. Disciplinary fields have different importance within the universities, (which gather, let us recall it, approximately two thirds of the students). Selected classification (figure 6) distinguishes eleven groups, from social sciences (17,7 % of the students) to Sciences and Techniques of the Physical and Sporting Activities (STAPS), which represents 3,4 % of the students.

A demographic characteristic is due to the sex ratio of the subjects. Whereas the feminization of the higher education is completed, since more than one student out of two is of female sex, it is very different according to sectors'.

The proportion of the female sex is stronger in the literary subjects, representing three quarters of the number of students in languages and arts, and two-thirds in social sciences. Health subjects are rather feminized. On the contrary, there are only one woman out of three students in sciences and structures of the matter, and one on five in sciences and technologies for the engineer.

Concerning the evolution, it is rather differentiated according to the cycles'. In 2000-2001, the number of students in the first cycle decreases in sciences of nature and of the life (-3,1 %) and in sciences and structures of the matter (-1,7 %). The only remarkable rise is relative to economic sciences (+5,1 %). In the second cycle, there is a rise in economic sciences (+7,7 %), medicine (+3,7 %), economic and social administration (+1,8 %) and odontology (+1,1 %). Excluding the STAPS, the other subjects are declining. In the third cycle, the number of students increases in all the subjects, excluding the sciences and structures of the matter.

The population projection

We can exam the future of higher education, as we know its population movement. Projections are regularly established for that purpose. They are based on generations being of an age to enter higher education, on the estimated results of the baccalaureate (end of secondary schools), and on the number of foreign students likely to study in France.

For the next few years, these projections foresee a stabilization of the number of students: there shall be 2,1 million students (figure 1) for the academic year 2009-2010, which is rather like the figures noticed since 1992-1993. Meanwhile, the annual variations should be tiny, mainly related to those of demography and to the success ratio to the baccalaureate. This expected stability results from three parameters. First of all, the demographic context is rather depressive, since the average number of births in the 80's is clearly lower than that of the years 1970. Then a new progression of the enrolment role should be from now on homeopathic. Lastly, the lengthening of the number of years of the higher education should carry on.

That lack in global quantitative changes should however result in a different distribution from the students. The selective teaching, may they be in the universities or other structures of higher education, seem increasingly privileged. Eventually, the future student population follows the demographic

logic. Those could change in a significant way only if the educational policy knew deep changes, like decisions founding a generalized selection in the first cycles of higher education. .

But, in France, the word "selection" is taboo, although the method is largely practiced in many teaching and even in a growing number of them. So official reports carefully avoid using it while resorting to the following formula: "quantitative regulation". Another assumption could result from a will of the French higher education to open itself more to foreign students who will be increasingly numerous seeking for formation, given world demography.

But these two assumptions, among others, suppose adapted budgets. The "quantitative regulation" requires per contra to be able to propose to the students a more efficient framework : more logistic means placed at the disposal, a wider range of possible teaching, more internationalized teachers. In the same way, France positioning itself as a reference in higher education for many too small or too young countries to offer to their students the complete range of higher education, should engage the specific investments. Thinking of these possibilities, which have financial consequences leads us to examine the current economic conditions.

The economic situation

The economic approach of the French higher education first appears simple since, the State assumes the decisions and the main part of the financing because of centralization. Thus we shall analyze the budget of the higher education within the budget of the ministry for education. It can be first studied by two ways. The first consists in considering the financial weight of the expenses of the higher education inside the expenses of the State's Budget. The data of the 90's highlight an increase in this percentage which remains nevertheless lower than 3 % (figure 7). That increase is really appreciable only in 1991-1992 when the growth of the number of the students is still significant. .

There has to be a second approach because the budget of the State can undergo variations related to political choices. It consists in (figure 7 also) calculating the ratio between the budget of the higher education and the Gross domestic product of France for the same period. Its conclusions are similar to those of the first approach. In 1992 and 1993, that proportion increases at the time of the demographic growth of the student population, then the rate remains

extraordinarily stable around 0,55 %. It results from these two approaches that France did not modify the amounts devoted to the investment in human capital via the budget of the higher education within the budget of the State during the 90's.

Nevertheless, the amounts devoted to the higher education do not come exclusively from the budget of the ministry for national education. Other ministries take part in it (figure 8). Local authorities, i.e. the communes, the departments and especially the regions also contribute to it, although they do not have any decision capacity on the matter. Lastly, the families assume registration fees and companies do finance higher education via *parafiscal* taxes. The contributions of these other initial payers increase the supplies of the higher education half as much again, bringing them to 0,80 % of the Gross Domestic Product.

That method makes it possible to evaluate the average expense per student. That one is very different according to followed studies. As for 2000 (figure 9) we can see that the student in university represents an expense half less than the student in Preparatory Class for the competitive examination to « Grandes Ecoles ». The three other possible ways spread out between the two extremes, in the following descending order: training of engineers, Sections of High-level technicians and University Institutes of Technology. The average expense is thus larger in the specialized or selective formations.

The economic analysis thus highlights the singularity of France. As the access to the universities for the graduates is free, whereas the other higher formations are selective *de facto*, that involves a high number of students in universities and undoubtedly explains a relatively weak average of expense per student. In the current system, the improvement of the university equipment of France thus faces an alternative: either increasing to a significant degree the expense devoted to higher education, or carrying on multiplying the selective teaching to devote to each one of them corresponding means with the needs for the formations. But what are these future needs? We shall answer that question by presenting some requirements for tomorrow.

The needs for the future

The stake for the French higher education does not consist any more in answering a quantitative problem, but qualitative questions in a world which

strongly evolves. The future economic needs for the higher education must make it possible to satisfy four requirements in particular: the higher education vocational formations, the increase in their international dimension, the growing recourse to new communication and information technologies, in particular to develop remote teaching, and finally the life-long education.

A whole part of the French higher education is in a fuzzy situation insofar as the diplomas obtained do not deliver a clear certification. One of the effects of this situation is that a minority, but considerable number of students, multiply diplomas without obvious complementarity and end up presenting resumes proving their capacity to be succeeded in academic examinations, but not allowing to know what they are really able to make. I advise these people, when they meet a possible employer, to present only the part of their diplomas likely to interest their interlocutor and to not mention the others. If they don't, they give the impression never to have been able to choose their objectives of formation clearly. If the French formula, consisting in numerous academic subjects and little teaching means, was satisfying, nothing else could be considered.

Unfortunately, higher education doesn't seem to be profitable to the market employment situation. France keeps on having one of the highest rates of unemployment, among about thirty Member States of the Organization of Co-operation and the Economic Development (OECD), even during the time when the job offers are significant. In fact the French economy has difficulty in finding the people corresponding to the qualifications needed, because the need of a higher education in close connection with professional realities seems too often forgotten. In the future, the higher education must thus increase the formations with an explicit purpose, seeking to make the students able to fill definite and evolutionary roles.

That includes, of course, the need for a formation integrating the way of developing, that is to say the capacity to evolve in time and space, to be capable of occupational mobility. The need for more vocational teaching represents a higher training cost, therefore of investment in more significant human capital. As a consequence, it means a lower unemployment, a greater efficiency and satisfaction of people. The initial additional investment is thus quickly made profitable. Second requirement, the French higher education must increase its international dimension. Although France exists in Europe and in the world by

its economy, its culture, its history, France preserves a rather hexagonal higher education. The place of the language teaching must be considerably increased there. The proportion of students having made a part of their higher education abroad shall be much ahead of 0,4 %. The necessary steps that have been taken in Europe to harmonize diplomas have to be intensified.

Third requirement, the equipment and formation with new communication and information technologies. I will especially insist upon the advantage of these tools to develop remote teaching, which is strongly linked with new technologies, all the more so that technical difficulties are gradually overcome, in particular the slowness of reception of the image. Even if there will always be teachers and students in the same places, an increase in the proportion of the times of formation organized according to a remote mode can be imagined. Consequently, the higher education will worldwide more and more be in a logic of internationalization of the teaching techniques making more intense offers without borders.

The French higher education has today "captive customers", and we have applied this reasoning to examine the population projection for the years 2000. It could be, which is already the case with the margin, in competition with virtual universities. In order to cope with this challenge, it is necessary at best to be able to join remote teaching with one or of the periods of real teaching meetings, in a pleasant and cultural framework if that's possible, which France can offer. Significant investments in multimedia teaching are necessary, more especially as they can be payed off by the initial formation and by continuous training.

However the needs for formation throughout the life are increasing, and that is the fourth requirement. The ways to satisfy them are in particular the development of the remotely tools for teaching we already talked about. Besides, they will result in making less relevant the border between initial formation and continuous training. Nevertheless, the specificity of the continuous training undoubtedly lies in its asynchronous mode, in so far as the person chooses in the possibilities of her timetable the periods devoted to the formation. The student of continuous training can be more autonomous, but it is an autonomy guided by the trainer who adapts consequently his teaching missions.

We have pointed out four needs for the future of higher education and it underlines the need for increasing the budgets and mainly the investments. In the years 1990, the French State has managed to maintain the credits granted to the higher education by calling upon the resources of the local authorities, and more particularly the regions, without questioning the extremely centralized organization of the French system of the higher education. This palliative method is not sufficient. The own resources of the French higher education must be increased. That supposes on the one hand rules of autonomy making it possible to develop them and to use them without excessive constraints of assignment or procedures. .

On the other hand, it is imperative to better mobilize the economic world by taxation rules treating the financial contributions of the companies with the higher education like investments.

The future of the French higher education takes place in a stagnant national demographic context, but in a general environment characterized by increasing requirements in initial and life-long education. Its future needs significant structural changes in order to reach an efficiency and a level of competitiveness requiring increased investments.

Those investments are justified as much by the cultural than by the applied purpose of the higher education. By developing more teaching of vocational training, while opening more with international, by increasing the practice of remote teaching, while being directed towards teaching throughout the life, the higher education can better contribute to learn the dialogue between the professions, the cultures, and the generations.

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