PERFORMANCE INDICATORS OF UPPER SECONDARY SCHOOLS (IVAL)

FROM INTERNAL MANAGEMENT TO THE GENERAL PUBLIC

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In France, the valued-added indicators for lycées (IVAL) measure the ability of secondary schools to support their pupils until they obtain the baccalaureate (A-level). Since 1993, the Ministry of Education's Department of Evaluation, Forward Studies and Performance (DEPP) disseminate results in this area to the general public. In addition to the examination pass rate alone, the 'added values' associated with the raw indicators facilitate comparisons between heterogeneous schools, by taking account of educational and socio-economic disparities between schools. Since the creation of the IVALs, the methodological principles remained unchanged but the method has evolved, adapting to institutional challenges and available data. Although sophisticated, it has been chosen in such a way as to be understandable to the general public.
The release of the indicators is a media event that also contributes to their informed dissemination. The media, which used to produce rankings based solely on the gross success rate, are now moving more towards plural approaches. As a result of this pedagogy, the philosophy of the IVALs is becoming better and better understood, both within the Ministry and externally. Although institutional players are already using them for steering purposes, this should be even more the case in the future, with a view to the overall evaluation of secondary schools

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In the era of open data, the dissemination of indicators to the general public seems to be a matter of course. However, this choice was far from being so obvious a few decades ago. When they were first created, the “added-value” indicators for secondary schools (IVAL) were only a tool for internal management, but their role was quickly expanded with the aim of shedding light on the public debate. This "transparency operation" raised several questions. What indicators should be disseminated? By what means? What calculation method should be used? How to avoid misinterpretation? The statistician is potentially faced with the risk that journalists will misuse the data he or she produces. He or she must therefore constantly arbitrate between the statistical relevance of the indicators disseminated and their ease of understanding by a non-initiated public. Calculating several indicators to go beyond a monolithic vision of a lycée's performance, taking into account social disparities between schools, or proposing relevant reading grids, are all elements that have accompanied the implementation of IVAL.

THE PERFORMANCE OF UPPER SECONDARY SCHOOLS, A QUESTION THAT RUNS THROUGH SOCIETY

In 1981, Le Monde de l'éducation made a big impression by publishing the first ranking of upper secondary schools (lycées), based solely on the gross success rate for the baccalauréat (upper secondary school leaving certificate). The issue was a best-seller and the exercise was repeated every year. When it was created in 1987 within the Ministry of Education, the Directorate of Evaluation and Forecasting (DEP)1 took up the subject and calculated performance indicators for each French upper lycée2. From the outset, these indicators were not limited to gross rates, but took into account inequalities in recruitment between lycées. At this stage, these data were sent only to school heads, for internal management purposes within the Ministry.

But everything changes in 1993, when L'Express manages to obtain an incomplete list of indicators. The newspaper extracted some of the data and entitled its March issue: "The Ministry of Education's secret ranking". The Ministry then gave the following reply: "Contrary to what you indicate, these indicators are not secret, since they were distributed a year ago to each head of académie3 [...], so that he could make them available to lycées heads and use them as tools for leadership and management. [...] The indicators that you have published, retained alone, truncate and distort the reality of each school. [...] The fact that you managed to obtain them and that you distributed them shows to what extent, to our regret, you have not grasped what should be the evaluation and steering tools, necessary in any case, for upper secondary schools.

THE ORIGIN OF IVALs: A TRANSPARENCY APPROACH

The ministry then took the lead. The following year, the DEP published the first version of the value-added indicators for lycées (IVAL), obtained from the results of the 1993 baccalaureate session. The aim was to contrast journalistic 'sensationalism' with the transparency of a scientific approach (Buisson-Fenet, 2019). The indicators provided by the DEP were taken up in June 1994 by several newspapers, including L'Express, which began its article with 'Finie la politique du silence!'. The weekly newspaper then indicated that it had received numerous letters from from headmasters complaining about its previous ranking, which did not take sufficient account of the context. L’Express makes amends by stating: "The success rate for the baccalaureate [...] must be compared with the expected success rate, i.e. the result that the school should obtain, taking into account the age of the pupils and their social origin. This data, calculated by computer, makes it possible to discover the added value - positive or negative - of the lycée”.

[1] Today Directorate of Evaluation, Forecasting and Performance Monitoring (DEPP).
[2] "Claude Thélot [director from 1990 to 1997] can be credited with the introduction of mass diagnostic evaluations, the development of performance indicators for high schools, and the enrichment of publications and the debate on the school [...]" (Cytermann, 2005).
[3] Main administrative district of the ministries in charge of school and higher education.

Although the indicators were not disseminated to the general public in a smooth and linear manner, this did not prevent them from becoming a permanent feature of the media landscape. In the following years, most daily and weekly newspapers followed suit, competing each other with catchy headlines: "The best lycées are not the ones you think they are" (Le Nouvel Observateur, 1997), "The truth about good and bad lycées" (L'Express, 1998), "Upper secondary schools: the perverse effects of the league table. They are based on reductive indicators." (Libération, 1999), etc.

Much has been achieved since 1993. The many reforms concerning the organisation of lycées have never called into question the existence of the baccalauréat, a central element of evaluation in their performance ***(Box 1)***. But in the 27 years of its existence, the nature, scope and method of calculation of the IVAL have been subject to constant change.

Box 1. Secondary education in France

Secondary education is provided in lower secondary schools, then in upper secondary schools.

Pupils are on average 11 years old when they leave school to enter lower secondary schools. They stay there for four years, at the end of which they take the Diplôme National du Brevet (DNB) exam, which certifies their acquisition of general knowledge.

Every year, 800,000 pupils take the brevet. Three quarters of them go on to general and technological upper secondary schools, and one quarter to vocational upper secondary schools.

At the end of three years in theses schools (seconde, première, terminale), theyfinally take the baccalaureate diploma, which marks the end of their secondary education. There are three types of baccalaureate:

- General Baccalaureate, where the new "speciality courses", introduced in 2019, now replace the traditional literary, economic and social, and scientific series.
- Technological baccalaureate: seven series, including "Sciences and technologies of management and administration" (STMG), "Sciences and technologies of industry and sustainable development" (STI2D), etc.
- Vocational Baccalaureate: numerous series, grouped for the purposes of the IVAL into ten "fields of specialisation" ("Mechanics, electricity, electronics", "Communication and information", "Personal services", etc.).

Some schools, known as "polyvalent", take in both general and technological students and vocational students. In the IVALs, these two tracks are then treated separately.

In the 2019 session of the baccalaureate, 390,000 candidates took part in the general route, 156,000 in the technological route and 209,000 in the vocational route.

WHICH INDICATORS, FOR WHICH USE?

Three indicators are used to measure the capacity of secondary schools (lycées) to support their students up to the baccalaureate, the starting point for each of them being a gross or observed rate:

- The first is the success rate for the baccalaureate. The success rate is the ratio of the number of students in the lycée who passed the examination to the number of students who sat for it. It is a traditional, well-known and easily established indicator.
- The access rate measures the probability of a student obtaining the baccalaureate at the end of a course of study completed entirely in the lycée, even if he or she has repeated a year. The access rate from seconde to baccalauréat is the product of three intermediate rates: from seconde to première, from première to terminale and from terminale to baccalauréat.
- Finally, the third indicator concerns the distinction rate at the baccalaureate, whether it is an ”Assez bien” (first level of distinction), “Bien” (second level of distinction) or “Très bien” (first class Honours).

In order to compare lycées, it is necessary to take into account the characteristics of the students they receive and their educational offer: if a high school has a high value for an indicator, is it due to the fact that it has

received students with a very good academic level, or to the fact that it has been able to develop in them, throughout their schooling, the knowledge and work methods that have enabled them to succeed?

For each observed rate, an expected or predicted rate is calculated. These rates correspond to the average rates for high schools with students of identical characteristics.
The **added value** of an indicator is the difference between the observed rate and the expected rate. It evaluates the school's own contribution, given the initial profile of its students ***(Figure 1)***.

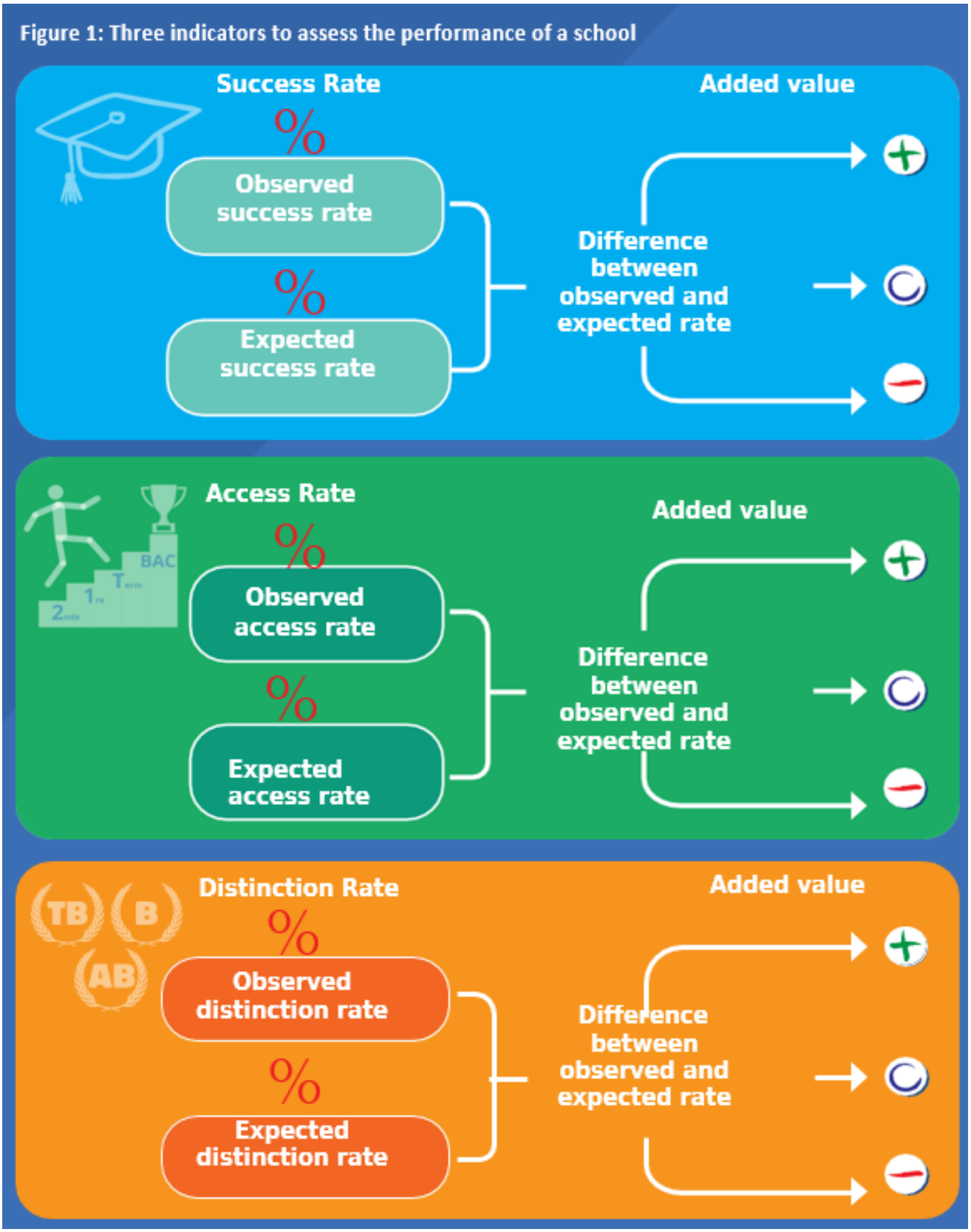
These indicators are complementary, as they take into account not only the success of the final exam, but also the capacity of the schools to support their students from the time they enter the school until they obtain the baccalaureate. Indeed, what would mean a very high success rate in a school where only half of the students who entered the school would still be present in senior year?

Generally speaking, any statistical indicator gives a restrictive view of reality. Even widely used indicators, such as the gross domestic product (GDP) in economics, are accused of being incomplete and of leaving out key areas such as quality of life or sustainable development[4].

In the case of measuring the performance of upper secondary schools, the access rate responds to the problem of the pathway, taking into account the entire schooling in the *lycée*. Combined, the three indicators provide a more accurate and more complete view of the school's action. Their small number also makes them easier to read and to use in public debate.

[4] In 2015, the Economic, Social and Environmental Council proposed ten indicators to complement GDP in order to take into account all the dimensions of development, both economic and social and environmental.

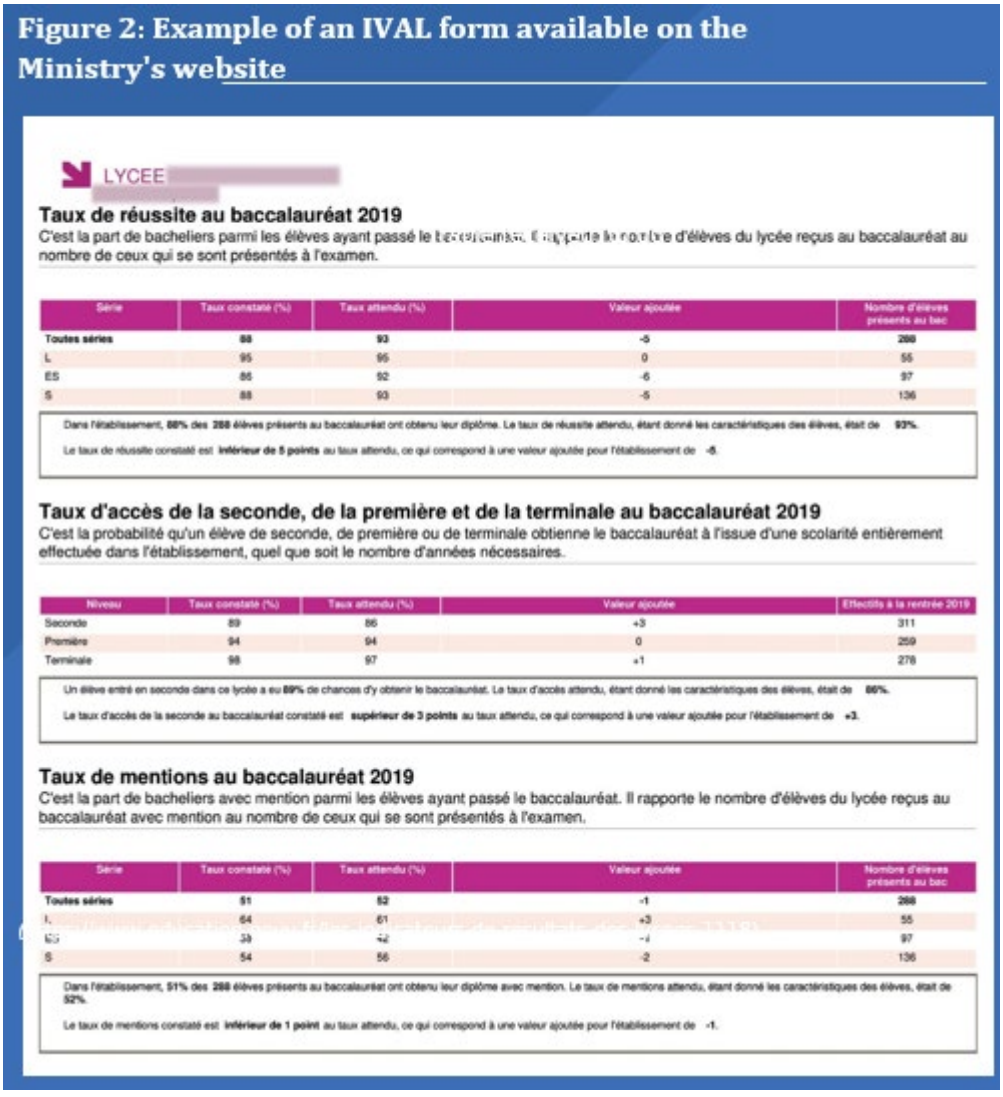
Figure 1: Three indicators to assess the performance of a school



Each year, in March, the DEPP makes available to the general public, for all general, technological and vocational lycées, both public and private, the observed rates of the three indicators and the associated added values ***(Figure 2)***. The success and distinction rates are broken down by series, and the access rate from the *seconde* to the baccalaureate is supplemented by the rates for the première to the baccalaureate and the *terminale* to the baccalaureate. The latter makes it possible to measure the proportion of repeating pupils accepted into the school.

These indicators are primarily used to inform public debate on the education system, in an effort to achieve transparency. But not only. They are also management tools for school heads, inspectors and education officers. They enable them to assess the results of the schools for which they are responsible. At a more detailed level, the added value of each series can also be used as a basis for reflection by educational teams, especially teachers. Finally, IVALs are one of many pieces of information for parents. They make it possible to go beyond an inevitably simplistic interpretation of the success rates observed, and help to enrich the dialogue between parents and schools.

Figure 2: Example of an IVAL form available on the Ministry's website



LYCEE

Taux de réussite au baccalauréat 2019

C'est la part de bacheliers parmi les élèves ayant passé le [illegible] d'élèves du lycée reçus au baccalauréat au nombre de ceux qui se sont présentés à l'examen.

Série	Taux constaté (%)	Taux attendu (%)	Valeur ajoutée	Nombre d'élèves présents au bac
Toutes séries	**88**	**93**	**-5**	**288**
L	95	95	0	55
ES	86	92	-6	97
S	88	93	-5	136

Dans l'établissement, **88%** des **288** élèves présents au baccalauréat ont obtenu leur diplôme. Le taux de réussite attendu, étant donné les caractéristiques des élèves, était de **93%**.

Le taux de réussite constaté est **inférieur de 5 points** au taux attendu, ce qui correspond à une valeur ajoutée pour l'établissement de **-5**.

Taux d'accès de la seconde, de la première et de la terminale au baccalauréat 2019

C'est la probabilité qu'un élève de seconde, de première ou de terminale obtienne le baccalauréat à l'issue d'une scolarité entièrement effectuée dans l'établissement, quel que soit le nombre d'années nécessaires.

Niveau	Taux constaté (%)	Taux attendu (%)	Valeur ajoutée	Effectifs à la rentrée 2019
Seconde	89	86	+3	311
Première	94	94	0	259
Terminale	98	97	+1	278

Un élève entré en seconde dans ce lycée a eu **89%** de chances d'y obtenir le baccalauréat. Le taux d'accès attendu, étant donné les caractéristiques des élèves, était de **86%**.

Le taux d'accès de la seconde au baccalauréat constaté est **supérieur de 3 points** au taux attendu, ce qui correspond à une valeur ajoutée pour l'établissement de **+3**.

Taux de mentions au baccalauréat 2019

C'est la part de bacheliers avec mention parmi les élèves ayant passé le baccalauréat. Il rapporte le nombre d'élèves du lycée reçus au baccalauréat avec mention au nombre de ceux qui se sont présentés à l'examen.

Série	Taux constaté (%)	Taux attendu (%)	Valeur ajoutée	Nombre d'élèves présents au bac
Toutes séries	**51**	**52**	**-1**	**288**
L	64	61	+3	55
ES	39	42	-4	97
S	54	56	-2	136

Dans l'établissement, **51%** des **288** élèves présents au baccalauréat ont obtenu leur diplôme avec mention. Le taux de mentions attendu, étant donné les caractéristiques des élèves, était de **52%**.

Le taux de mentions constaté est **inférieur de 1 point** au taux attendu, ce qui correspond à une valeur ajoutée pour l'établissement de **-1**.

HOW TO DETERMINE THE ADDED VALUE?

When indicators are published on a large number of individuals, in the statistical sense of the term, the question of comparability is major.

Several approaches are then possible, for example that of the Haute Autorité de Santé (HAS) when it publishes quality of care indicators for each hospital and clinic in France[5]. The problem is similar to that of the IVALs, but the treatment is significantly different. On the HAS public website, each establishment is given a grade (A, B, C, D or E) on a battery of indicators. But an "A" does not mean the same thing if 80% of the institutions are in this case, or if 80% have obtained a lower grade. For each indicator, the site shows the distribution of grades at national level and positions the hospital or clinic in relation to its peers. It also offers the possibility of comparing several establishments on each of the evaluation criteria.

In the particular case of *lycées*, the indicators cover some 4 300 establishments, each with very different characteristics, particularly in terms of the profile of the pupils enrolled. In order to explain the impact of a lycée on the success of its pupils, it is therefore necessary to try to eliminate the impact of success factors that are external to it.

Some of these factors are in fact specific to the pupil. The four individual characteristics of age, sex, social origin and school level at the start of the *lycée* have been retained, as they provide a first approximation of a pupil's chances of accessing and passing the baccalauréat. The factor which has the most fundamental impact on success is the level at which pupils enter lycée: this is measured by the average mark obtained in the written tests for the “diplôme national du brevet” (DNB). The difference in success at the baccalaureate is almost 18 points between pupils who scored 10 or less in these written tests and those who scored over 14[6]. The social background of students is measured by the social position index. This index, specific to the French National Education system, takes into account, through a continuous variable, the socio-professional categories of both parents: the higher the index, the more advantaged the student's social background (Rocher, 2016). Obviously, only measurable factors can be taken into account. The degree of parental involvement in their children's schooling, for example, although it necessarily plays a role, cannot be taken into account.

The other part of a pupil's success is linked to the characteristics of the pupils around him or her. Most studies of co-education conclude that the academic and socio-economic profile of a pupil's classmates has an influence - or spillover effect - on his or her school results (Fougère, Givord, Monso and Pirus, 2019). To the four individual characteristics are thus added their 'collective' equivalents: proportion of pupils who are behind in their schooling, proportion of girls, average social position index and average mark of pupils in the written tests of the brevet.

[5] For more details, see https://www.scopesante.fr.
[6] Figures obtained in the 2019 session of the baccalaureate.

MODELS IMPLEMENTED IN THE FRAMEWORK OF IVAL

Modelling aims to explain the success, access and distinction rates by both individual and collective characteristics of the students. It is based on multilevel logistic models where an observation is a pupil ***(Box 2).***

Box 2. The models used in the IVALs

The models used are multilevel logistic models, where one observation equals one student.

- Logistic, to take into account the dichotomous nature of the variable explained at the student level: pass or fail, distinction or not, access to higher level or not;
- Multilevel, because this type of model makes it possible to measure the effects of context on individuals, in the case where the latter share a common environment. Here, the students of a high school are all subjected to the same environment, measured through the collective variables described above.

Multilevel modelling then allows for a better estimation of the effect of the individual and collective variables of interest (Givord and Guillerm, 2016). A classical regression, using ordinary least squares, would have assumed an independence of the error terms from one individual to another. This assumption is undermined here: on the contrary, it is assumed that the environment has a roughly equivalent impact on all individuals in the same group. However, the non-independence of the error terms can lead to a poor estimation of the coefficients. Multilevel modelling solves this problem by decomposing the model's error term into a strictly individual term and a term common to all individuals in the same group. This second term corresponds to the context effect, i.e., in the framework of the IVALs, to the school effect, which takes on an identical value for all students

The expected success rate for a student is obtained by applying the values of the model's coefficients to his or her characteristics (individual and collective), from which the school effect is removed. In this way, the expected (or predicted) rate corresponds to the probability of the student's success if he or she were in an "average" high school, in the statistical sense of the term. In other words, if the impact of his school on his success was neutral. The expected success rates by *lycée* or by series are obtained by averaging over all the students concerned[7].

The procedure is identical for the distinction rates. For the access rate, the method is reproduced for each of the three intermediate rates (seconde-première, première-terminale and terminale-bac) and the expected seconde-bac rate is obtained by multiplying these three rates ***(Figure 3)***.

This concept of *expected rate* is essential. Comparing the raw rates of two *lycées*, without taking into account the characteristics of their students, would lead to a distorted analysis. If some *lycées* have low expected rates, it is because they take in pupils of a lower academic level and with more disadvantaged social characteristics than others. It would be unfair, especially for educational teams, to compare their gross rates with those of very advantaged high schools.

As indicated above, the added value is obtained, for each of the indicators (success, access and distinction), by comparing the observed rate with the expected rate. It allows a comparison with the average efficiency, and measures in a much more accurate way what the *lycée* has brought to its pupils. This method, based on adapted modelling, has not always been used to calculate IVALs. It is the result of a long process marked by methodological and institutional developments.

[7] For more details on the modeling part, see (Evain and Evrard, 2017).

Figure 3: How the "expected" success rate of a school is calculated

A METHODOLOGY THAT HAS BEEN ADAPTED TO THE AVAILABLE DATA...

Before 2008, the way of calculating the expected rate was much more crude and only took into account the socio-professional category of the legal guardian (in four modalities) and the age in the final year of secondary school (in three modalities). For each *lycée*, the distribution of students in the 12 cells resulting from the intersection of these two criteria was calculated. Each cell was then assigned the rate observed at the national level for this category of students. The average of these reference rates, weighted by the distribution in the 12 cells, gave the expected rate for the *lycée*.

In 2008, the IVALs underwent a major overhaul (Duclos and Murat, 2014). On the one hand, the list of explanatory variables was enriched, and on the other hand, the calculation of expected rates was based on econometric models for the first time.

In the early years of the introduction of the IVALs, some observers regretted that the level of students at the start of the *lycée* was not one of the criteria used. However, experimental work was carried out as early as 1996, in order to evaluate the impact of taking into account the marks obtained at the brevet. In 2004, in a study commissioned by the DEPP on the *lycées* of the Bordeaux académie[8], the author concluded that failure to take account of pupils' initial level led to an underestimation of the added value of working-class *lycées* and an overestimation of the added value of socially advantaged *lycées* (Félouzis, 2004).

But the necessary data were not available at the time. The results of the final examinations of the brevet were still collected "by hand" in many départements[9] and did not constitute a database that could be used for statistical purposes. The transformation of the brevet into a national examination in 2003 and the provision of exhaustive data at the national level from the 2004 session onwards made it possible to remedy this problem. However, it was necessary to wait a few more years, as the pupils who took the brevet in 2004 did not reach the final year of secondary school until at least three years later.

Furthermore, although a national brevet file was available in 2008, difficulties in matching it with other data sources remained. In order to take into account the initial level of the students, it was calculated at an aggregate level. For each of the students in the series 'S' in a given *lycée*, for example, the average of the brevet scores of all the students in the series 'S' in that *lycée* is used. On this occasion, gender is also added to the explanatory variables. The four dimensions that these variables make it possible to take into account have remained the same since then: initial level of the pupils, social origin, educational backwardness and gender.

The second major change in the 2008 recast concerns the method. The expected rate is now calculated using multilevel logistic models, as described above ***(Box 2)***. These models legitimate the addition of context variables, which thus appear for the first time: distribution of pupils by social origin, proportion of girls, proportion of pupils lagging behind in school and average mark in the brevet.

Seven years later, in 2015, the possibilities of matching the different sources have improved significantly, in connection with the progress in student registration. Thanks to a match on an encrypted individual identifier, it became possible to retrieve the brevet score of each student. It was also in 2015 that the social position index (see *above*) was created, making it possible to take into account the occupation of both parents, another very important advance. All these elements, over which the *lycée* has no control, are thus increasingly better measured. This allows a better estimation of the expected rates, and therefore a better comparison "all other things being equal" of the *lycées* among themselves.

[8] Main administrative district of the ministries in charge of school and higher education.
[9] Territorial authority and administrative district.

… AND TO THE INSTITUTIONAL CONTEXT

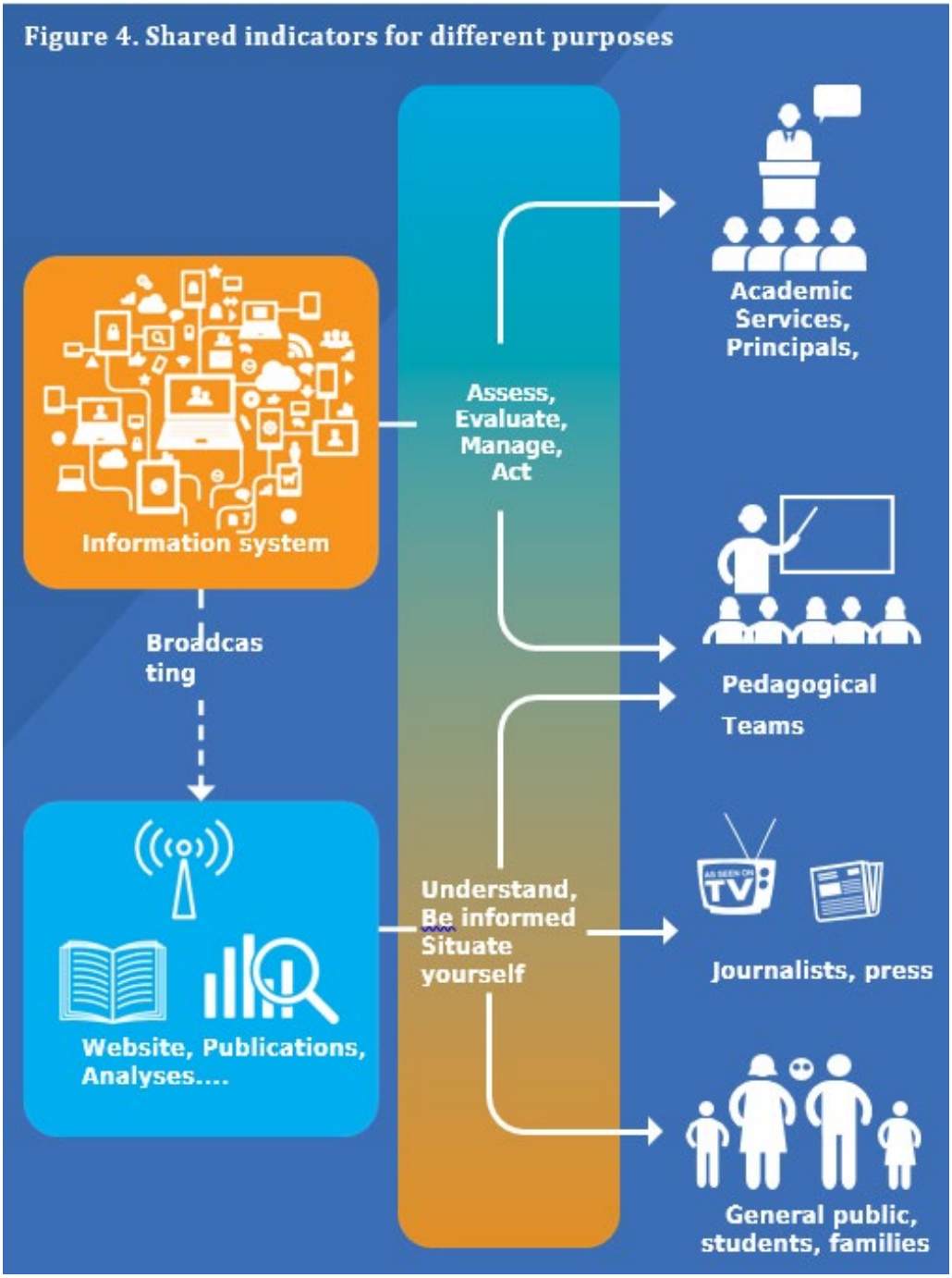
These successive improvements have been made possible by the emergence of new tools or new data sources. Others have been imposed in order to take account of changes in the institutional context. For example, between 2009 and 2011, the vocational baccalaureate was radically reformed. Whereas it used to take two years to complete, its duration has been aligned with that of the general baccalaureate. Therefore, vocational *lycées* have been taking in students directly from lower secondary school for a period of three years. Since then, the IVALs have adapted to provide a rate of access from the 'seconde' to the baccalauréat for vocational *lycées*.
More recently, the IVALs have been enriched with a new indicator, the distinction rate, to respond to a recurring problem. Although success rates have stabilised since 2014, they have in fact been rising steadily in previous years. In 2019, they reached 90% in the general and technological pathway and 82% in the vocational pathway. The expected rates logically follow the same trend. For one out of six general and technological *lycées*, the expected success rate is even greater than or equal to 97%. By construction, the added value of these *lycées*, which take in pupils with a very privileged profile, cannot therefore exceed +3 points. Among the criticisms levelled at the IVALs, the difficulty of discriminating highly advantaged *lycées* was thus a recurring theme in the debate. In 2017, the addition of the distinction rate has made it possible to provide an answer. Indeed, for these high schools, the average distinction's rate is 75%, which is certainly high, but gives them more latitude to obtain a good added value. Among the highly favoured *lycées* in the 2019 IVALs, we can observe very contrasting situations. While the added values associated with their success rate are generally close to zero, one of them has, for example, an added value of -15 on the distinction's rate, while for another it is +27. The addition of this new indicator thus makes it possible to differentiate between *lycées* that previously seemed very similar.

The distinction rate is also a steering indicator in itself. For students who continue their studies in higher education, the type of course and the graduation rate vary greatly depending on whether or not the student has passed the baccalauréat with honours. In bachelor's degrees, the graduation rate is 77 per cent among students who obtained a distincion, compared to only 47 per cent for students who did not (Ponceau, 2019). This indicator therefore also measures the capacity of high schools to prepare their students for higher education.

Even more recently, the reform of the general baccalaureate route, begun in 2019, saw "speciality courses" replace the traditional general series. For the 2019-2020 school year, only students in 'première' were concerned. Instead of the literary, economic and social, or scientific series, they had to choose three specialities among thirteen[10]. However, the success and distinction rates are currently calculated by series. When these students take the baccalauréat in June 2021, it will be necessary to adapt the indicators to take account of the disappearance of the general series.

These adjustments are just a few examples. Reforms affecting the *lycée*, constructive criticism from school heads and the search for more relevant indicators mean that the methodology has to be rethought each year to ensure that it remains as appropriate as possible. These various adaptations are of course the subject of much upstream work. A great deal of communication work ***(figure 4)*** is also carried out downstream, aimed at IVAL users and, first and foremost, the general public.

[10] Mathematics, Numerical and Computer Sciences, Economic and Social Sciences, etc.



DISSEMINATE AND EXPLAIN INDICATORS

The criterion of readability and comprehension is decisive for a public that is not a statistician and is potentially reticent about numbers. The way in which value added is calculated illustrates this concern to be understood by the greatest number of people. Indeed, other choices than measuring the difference between the observed and expected rates could have been done. For example, since the model allows to highlight an effect specific to each establishment, this coefficient could have been considered as corresponding to the value added. However, its magnitude (in absolute value) does not correspond to any scale. Unless it is used only to compare two *lycées* and see which one has the best added value, this coefficient would have been difficult to interpret. The choice that has been made makes it possible to explain to the general public, in relatively simple terms, what the value-added corresponds to: the difference between what is observed and what could be expected, given the characteristics of the students.

In order to explain the main principles and methodology of the indicators, the dissemination of results is accompanied by a number of educational elements. Every year, the DEPP organizes a press conference at which the indicators, their objectives and any new features are presented, together with a methodological guide. Journalists thus have a wide range of information that they can relay, in particular by citing the Ministry's official dissemination site. On this site, didactic videos explain in a simple manner how the indicators are calculated (MENJ-DEPP, 2020). All of this documentation, developed with the help of the Ministry's communication services, seems to have improved the understanding of the IVALs from year to year.

FOR THE PRESS, THE TEMPTATION OF THE AWARD LISTS…

Even though the indicators were not designed for this purpose, rankings continue to appear every year in the spring in most media. Among the criteria used by journalists to produce these rankings, some are far removed from the philosophy of the IVALs, such as the ranking of *L'Internaute* (March 2020), which calculates, for each *lycée*, an average of the gross rates. Or the *Figaro* ranking, which highlights the *lycées* with the best success and distinction rates. Other newspapers adopt a median position, calculating a score for each *lycée*, based on both the observed rates and the added values *(L'Express, L'Étudiant)*. Finally, some have taken a better grasp of the principles conceived by the designers of the IVALs and their interest. *Le Parisien - Aujourd'hui en France*[11], in particular, calculates the sum of the three added values, and uses the gross rates only to decide between *lycées* that are equal.

The regional press is not to be outdone, and also publishes numerous articles. Based on the same objective data, extremely different rankings are published. Some of them still have too much of a tendency to emphasize the more privileged *lycées*, which can have perverse effects. In particular, they harm the attractiveness of the most disadvantaged *lycées*, even though their added value is positive, and put forward favoured ones with sometimes negative added value. Moreover, the parents of pupils who are interested in these rankings, who are better informed, are also parents of children with a more privileged profile. A ranking based on biased criteria can then lead some of them to avoid deserving *lycées*.

If everything is not perfect in what the media publish, there are nevertheless many elements to fuel the public debate. The quantitative rankings are frequently accompanied by qualitative elements: in-depth articles on the way in which *lycées* are evaluated, interviews with specialists or even reports from the field. The latter usually take place in *lycées* that have obtained good results, and shed light on the methods that work.

In the early years of their distribution, most media used only the observed success rate to rank *lycées*. The work of education has borne fruit, since more and more of them are now using not only the other indicators provided, but also the added values. Although efforts still need to be made, the media treatment of *lycée* performance indicators is becoming increasingly refined.

In parallel with the treatment given to them by the media, indicators are also used as internal steering tools. Within the Ministry, many institutional actors are taking advantage of them, in particular education officers, the academic services and the *lycées* heads.

[11] The daily newspaper also proposes maps (http://etudiant.aujourdhui.fr/etudiant/carte-palmares-des-lycees-le-parisien.html) on which the high schools are positioned, with different colours for each of the five families described in ***figure 5***.

UPPER SECONDARY SCHOOL HEADMASTERS, BOTH USERS AND OBJECTS OF THE EVALUATION

Through the results of their school, it is also, in a way, the action of the headmasters that is evaluated. It is therefore doubly necessary to get them to adhere to the system.

From the beginning of January, i.e. two months before the official release of the results, the headmasters have access to a "validation" site, *via* which they can consult the provisional results for their *lycée*. This phase, which lasts about a month, allows them to make comments to the DEPP and even to contest the figures.

Most of the remarks relate to misunderstandings concerning the methodology or the concepts used. In particular, the notion of a pupil present at the baccalauréat is not as easy to grasp as it might seem. A pupil is in fact counted as present if he or she has at least one mark to his or her credit from the in-service test or from a final test. This prevents certain schools from artificially inflating their results by discouraging their weakest students from taking the final exams. Every year, headmasters who have one or more students who have left the *lycée* during the year express regret, particularly in the vocational stream. These students, if they have obtained a continuous assessment mark, are in fact counted as present, and therefore as fails.

Depending on the year, between 100 and 200 requests for revision (out of approximately 4,300 *lycées*) are received by the DEPP. A few dozen of these are accepted, for example in the case of sick students who were unable to take the tests (medical proof is required). The vast majority of headmasters thus validate the figures calculated, and can prepare their communication with parents and school inspectors. This discussion phase is also essential, as the headmasters' comments provide interesting avenues for development. These may concern the taking into account of school mergers, of the training offer, or of pupils requiring special treatment[12].

TOOLS OFFERED TO TERRITORIAL SERVICES

There are some thirty académies, each of which is home to an academic statistical service (SSA). Within a network led by the DEPP, the SSAs play an important role in the development of information to assist in decision-making and management. When the IVALs are disseminated, these services may be called upon to produce notes for the education officer on the results of the *lycées* in their académie. The DEPP plays an assistance role and responds to any requests. For example, it offers various types of graphical representations, including scatter plots showing the added values: in the example of ***figure 5***, the distribution of the *lycées* in Académie A is very homogeneous. In comparison, académie B contains more selective *lycées* that fall short of expectations. In other académies, it is the high-performing *lycées* that can be better represented. The thresholds used to define the categories[13] were chosen in order to obtain a homogeneous distribution at national level. In the vocational stream, where the dispersion of added values is greater, the thresholds are higher. From the point of view of steering, this type of representation is more relevant than a unidimensional classification.

BROADENING THE USE OF IVAL FOR STEERING THE EDUCATION SYSTEM

At the national level, the purpose of the IVALs is certainly to objectify the public debate, but beyond that, what follow-up is given to their publication? A few examples show their contribution to the management of the education system.

[12] Evening classes, anti-drop-out schemes, etc.
[13] Added values between -3 and +3 for "neutral" high schools, for example.

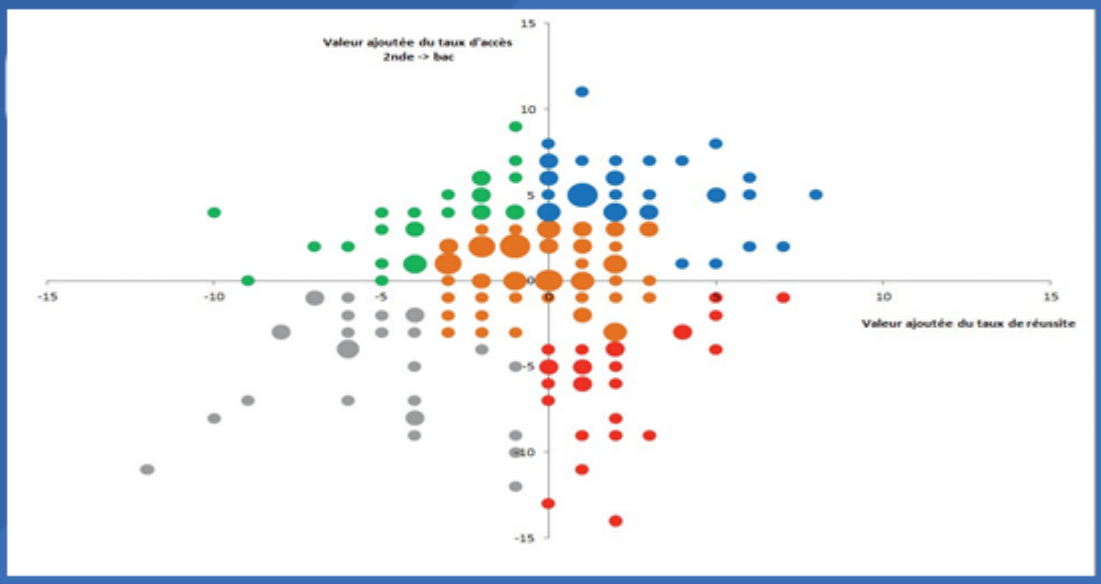
In 2015, the General Inspectorate of National Education (IGEN) took up the indicators in an attempt to identify the specific features of high value-added schools in their mode of operation (IGEN and IGAENR, 2015). To do this, the authors conducted a field study of 71 schools with very positive or very negative added value. It emerged that added value always depends on a combination of factors, which itself varies from one school to another. Among the many factors likely to generate positive added value, we may distinction for example: teams united around an educational project, the involvement of teachers, personalized support for pupils, a high level of standards and a calm school climate.

In the course of interviews with principals and teachers, the inspectors also founded that although the IVALs are well known to the management teams, they are not widely disseminated within the schools. Clearly, *lycées* with positive added value are more likely to communicate on the subject, whether internally, with parents or the regional press. On the whole, however, the IVAL remain unknown to teachers, who see them only as indicators among others, without perceiving the specificity of the "added value" calculation.

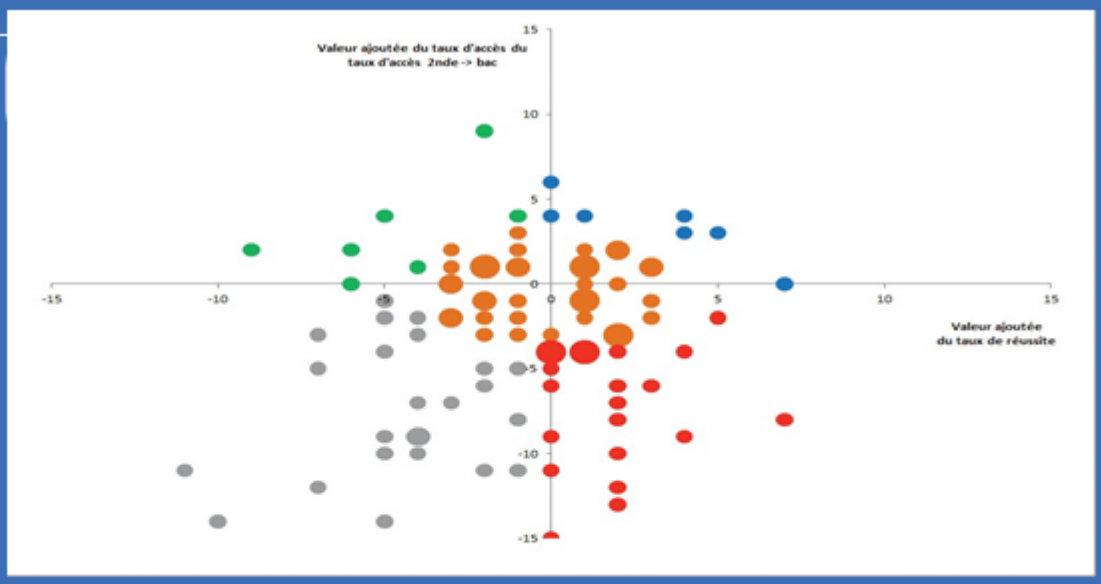
Figure 5: Representing the performance of lycées to compare and characterize them

These clouds, in which each point represents a number of lycées, allow us to distinguish five types of lycées:

Académie A



Académie B



- the *neutral* ones, which contribute neither more nor less to the success of their students than the average of the lycées similar to them in terms of student profiles;
- *accompanyings*, whose students may take a little longer to obtain the baccalaureate, but leave lycée less often during the year;
- the *selective* ones during schooling, which students leave more often, but where they have a better success in the final exam, for those who remain there;
- those who *fall short of expectations*, who have poorer results both in terms of success and in terms of access to the baccalaureate, given the profile of their students;
- the *performing ones, with* fewer students dropping out during the school year and more students succeeding the exams.

Beyond the indicators of added value, there is the question of the overall evaluation of *lycées*. The IVALs alone cannot sum up the educational qualities of a *lycée*. Pointing to the lack of systematic evaluation, a new report by the General Inspectorate considered in 2017 that it was necessary to move from the evaluation of exam results to that of the *lycée* as a whole (IGEN and IGAENR, 2017). To deal with other aspects of the life of a high school, such as the school climate, for example, the authors invite us to draw inspiration from the value-added indicators. Taking into account contextual elements (characteristics of the students enrolled, socio-cultural

environment, etc.) thus appears to be necessary for any evaluation.

The family of value-added indicators will also be expanded at the end of 2020, with the dissemination, for each vocational *lycée* and apprenticeship training centre, of a rate of integration into employment. As with the IVALs, these rates will be accompanied by added values, and additional indicators will be made available: rates of continuation and interruption of studies and rates of termination of apprenticeship contracts.

In addition to enriching the evaluation of the establishments, these indicators will make it possible to enlighten the choices of young people in vocational education, and will contribute to the reflection on the link between training and employment in each territory.

The next challenge for the DEPP will be to adapt the IVAL methodology to lower secondary schools. This will be made possible by the introduction, since 2017, of exhaustive assessments of grade 6 pupils. This assessment of pupils' level at the start of lower secondary school was essential. In the years to come, it should make it possible to calculate value-added indicators for each lower secondary school in France, thus extending to all secondary schools an approach and method that have proved their worth.

BIBLIOGRAPHY

- Buisson-Fenet H., 2019, « Piloter les lycées - Le tournant modernisateur des années 1990 dans l'éducation nationale », Editions PUG, Collection Libres cours Politique.

- Duclos M., Murat F., 2014, « Comment évaluer la performance des lycées ? Un point sur la méthodologie des IVAL », Éducation & formations, n° 85, MENJ-DEPP, p. 73-84. http://www.epsilon.insee.fr:80/jspui/handle/1/40674

- Evain F., Évrard L., 2017, « Une meilleure mesure de la performance des lycées », Éducation & formations, n° 94, MENJ-DEPP, p. 91-116. https://www.education.gouv.fr/sites/default/files/imported_files/document/DEPP-EF94-2017-article-5-meilleure-mesure-performance-lycees-refonte-methodologie-ival-session-2015_819385.pdf

- Félouzis G., 2004, « Les indicateurs de performances des lycées, une analyse critique », Éducation & formations, n° 70, MENJ-DEPP, p. 83-95. http://www.epsilon.insee.fr:80/jspui/handle/1/40732

- Givord P., Guillerm M., 2016, « Les modèles multiniveaux », Méthodologie statistique, n° M2016/05, Insee. https://www.insee.fr/fr/statistiques/2022152

- MENJ, 2015, « Des facteurs de valeur ajoutée des lycées », Rapport conjoint IGEN / IGAENR, n° 2015-065. https://www.education.gouv.fr/sites/default/files/2020-02/2015-065-valeur-ajoute-lycees-510755-pdf-31388.pdf

- MENJ, 2017, « L'évaluation des établissements par les académies », Rapport conjoint IGEN / IGAENR, n° 2017-080. https://www.education.gouv.fr/l-evaluation-des-etablissements-par-les-academies-9410

- MENJ-DEPP, 2020, « Méthodologie des indicateurs de résultats des lycées ». https://www.education.gouv.fr/methodologie-des-indicateurs-de-resultats-des-lycees-11948

- Monso O., Fougère D., Givord P., Pirus C., 2019, « Les camarades influencent-ils la réussite et le parcours des élèves ? Les effets de pairs dans l'enseignement primaire et secondaire », Éducation & formations, n° 100, MENJ-DEPP, p. 23-52 https://www.education.gouv.fr/sites/default/files/imported_files/document/depp-2019-EF100-article-02_1221886.pdf

- Ponceau J., 2019, « Parcours dans l'enseignement supérieur : du baccalauréat au premier diplôme du premier cycle », Note d'information 19,09, MESRI-SIES. https://www.enseignementsup-recherche.gouv.fr/cid143104/parcours-dans-l-enseignement-superieur-du-baccalaureat-au-premier-diplome-du-premier-cycle.html

- Rocher T., 2016, « Construction d'un Indice de position sociale des élèves », Éducation & formations, n°90, MENJ-DEPP, p. 5-27. http://www.epsilon.insee.fr:80/jspui/handle/1/41994