

## The R score: a survey of its purpose and use

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## INTRODUCTION

This document is intended as a general survey on the purpose and use of the R score<sup>1</sup> in the admissions process at the university. A more detailed look at this student classification method is found in another document by the CREPUQ entitled *R score: what it is and what it does*, where a hypothetical case is used to illustrate how the R score is calculated and how it affects the classification of the students. Some complementary information on the R score is found in *Questions and answers on the college R score*. These two informational documents, as well as the present document, are available on the WEB Site of the Conference of Rectors and Principals of Québec Universities (CREPUQ) at the following address: [www.crepuq.qc.ca](http://www.crepuq.qc.ca) in the section "Admission et dossier étudiant".

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<sup>1</sup> The R score is now generally accepted in English to mean the *cote de rendement au collégial (CRC)*.

## **1. THE R SCORE: A CLASSIFICATION METHOD FOR THE SELECTION PROCESS**

University admissions policy generally is to accept all applicants to a program who meet its general and specific admission requirements. However, when a selection must be made from among those who qualify, most often because of program enrollment limits, each university must decide if and to what extent a student's academic record should be used in the selection process. For example, in some programs admission could be based solely on college grades, whereas in others college grades are merely one of a number of criteria in the selection process. In any event, the universities are well aware that the methods used in comparing and classifying candidates must be as objective and as fair as possible.

The use of academic records for purposes of classification and selection assumes that there is a common basis for evaluation, or, alternatively, that the groups of students, their learning experiences, and the grading methods used are inherently the same. The college education regulations are clear on the autonomy enjoyed by each institution in the evaluation of learning. Consequently, the universities have devised a way of classifying students for purposes of selection by utilizing statistical methods to correct for observed differences in the grading systems used by the colleges, and to adjust the resulting values to take into account the relative strength of each group of students. This method, called the R score, was adopted by the universities in Québec in 1995.

## 2. THE TWO MAIN COMPONENTS OF THE R SCORE

The R score contains two types of information for each course taken by a student: the indicator of the student's rank in the group based on that individual's grade (the Z score) and the indicator of the strength of the group (ISG). The following expression shows how these data contribute to the R score:

$$\mathbf{R\ score = (Z\ score + ISG + 5) \times 5}$$

The choice of the number 5 for the constants ensures that the R score is a positive number between 0 and 50. The average R score for a complete college academic record is about 25.

The following provides a closer look at the concepts of Z score and ISG .

### 2.1 THE Z SCORE

The Z score is a statistical unit of measure which expresses a student's position in a distribution of grades in terms of two fundamental elements of this distribution, i.e., the average grade, and the standard deviation, or grade spread.

By taking into account the average and degree of spread in the grades of a class of students, the Z score can be used to normalize the grades of different classes or groups to a common scale, allowing comparisons to be made between them. With the academic record expressed in terms of the Z score, students can be ranked according to academic achievement.

There are two fundamental advantages to the Z score: first, it maintains the student ranking obtained in conformity with the grading guidelines prescribed by each college, and second, it allows for a direct comparison of grades between student groups that are different, yet equivalent.

While the classification and selection processes are definitely improved by the use of the Z score, some of the difficulties encountered in evaluating students for admission to the university are left unresolved. Indeed, using the Z score to compare student groups with different academic profiles results in a biased and less valid ranking. The selection process used by the colleges in admitting students to their different programs, the various ways of organizing students into groups (homogeneous and heterogeneous), the types of programs offered, e.g., Diploma of Collegial Studies (DCS) in the Sciences and in Arts and Letters, Enriched DCS, International Baccalaureate, etc., are but some of the factors that can influence the classification of students from different colleges, and possibly affect the chances for admission of some of them.

## 2.2 THE INDICATOR OF THE STRENGTH OF THE GROUP

Because the Z score cannot take into account characteristics specific to a group and is thus unable to ensure complete fairness, it is necessary to examine another element these individuals have in common, which is the relative strength of the group a student is part of for a given course. This group strength is determined from the weighted results of all of the courses taken in Secondary IV and V by all the students making up a group at college. Various studies have essentially shown that academic performance in the last years of secondary school were fair indicators of subsequent college performance<sup>2</sup>.

On the other hand, it should be kept in mind that a student's rank in a course taken at college depends entirely on the grade obtained in that course, and is in no way influenced by his results at the secondary. The student's average at the secondary, like that of the other students in the same course, will only serve to determine that group's ISG. The impact of an average at the secondary on that student's classification at college will be very limited: for instance, it will count for no more than 3% of the ISG if there are 35 students in the group. The student need not fear entering the university hobbled by grades at the secondary.

Since the R score takes into account group strengths, all students start off with the same opportunity in all the colleges. Consequently, a student doesn't necessarily have to register in a college reputed to be strong academically in order to get a good R score. Indeed, it is pointless to choose a college in the belief that this will facilitate admission to the university. This may have been true in the past with the use of the Z score, but it is no longer the case. Other factors should be considered in making this choice, such as the type and diversity of the courses, programs, and activities, how well one is received, the quality of instruction and of the student services, the proximity of the college, etc.

Along the same lines, since the R score takes into account the relative strength of each group of students, there are no advantages or disadvantages to being part of one of group rather than another. Studies of all the students at all the CEGEPs indicate that the two components of the R score (i.e., the Z score and the ISG) compensate one another. A student who happens to be in a group of strong students may obtain a Z score smaller than would be the case were the group weak, but this would be compensated by a correspondingly larger ISG. Were the group to be weak, the effects on the Z score and the ISG would be reversed, but the two would again compensate for one another.

It is important to note that the correction made to the Z score depends on the group the student is a part of at the time of evaluation. Indeed, this group need not be limited to a single class, but could include students from the same college who took the same course the same year in the same semester, and who were evaluated in the same way. This would constitute the "group at evaluation." For example, if during the winter term a professor teaches the same course to three groups of 40 students each, and if the method of grading is the same for all three groups, there is in effect only one group of 120 students to be evaluated, and it is from this group that the Z score and the ISG will be calculated.

<sup>2</sup> See Terril et Ducharme (1994), *Passage secondaire-collégial : Caractéristiques étudiantes et rendement scolaire*, Montréal, SRAM.

To recapitulate, the R score adds to the advantages of the Z score consideration of the initial differences between groups through the ISG. Because this corrective term can be applied to all college courses, it provides an appropriate adjustment to the student's record. Thus, should a student transfer to another college, another program, or another group, the Z score for each course transferred will be adjusted according to the indicator of the group in which the evaluation takes place. This generally applicable corrective measure ensures that the academic record of a college graduate applying for admission to the university will be given eminently fair consideration, regardless of the college attended.



### 3. HOW UNIVERSITIES USE THE R SCORE IN THE ADMISSIONS PROCESS

In studying the merits of an applicant's academic record, the university will consider the weighted average of all of the candidate's valid R scores—only Physical Education courses taken before autumn 2007 and qualifying courses<sup>3</sup> are excluded from the calculation. The weighting is a function of the number of units attributed to each course. Thus, the R score obtained in a course to which is attributed 2.66 units is multiplied by 2.66, and the R score in a course of 2 units is multiplied by 2. It is in terms of its weighted average R score that an academic record is evaluated, compared, and classified.

This average may be adjusted to consider special characteristics of certain groups of students. Starting with the autumn of 1999, the vice-rectors for academic affairs of Québec universities have agreed to increase by 0.5 points the average of all students completing an International Baccalaureate or the DCS in the Sciences, or in Arts and Letters.

In addition, the Comité de liaison de l'Enseignement supérieur (CLES) has approved the recommendation of the Comité de gestion des bulletins d'études collégiales (CGBEC) to give less importance to failed courses in the calculation of the average R score. Consequently, beginning with admission for Winter 2005, the weight of failures is considered in the calculation of the R score: for the first term of registration at CEGEP, failed courses only count for one quarter of the units allocated to the course, in other words they have a weighting of 0.25; for subsequent terms, the weighting is 0.50. This method of calculation is applied for all records present in the ministerial system, regardless of the date of first registration at CEGEP.

Even if the R score is the instrument of choice in evaluating all applications for admission to university programs, it is used principally where the program is of limited enrollment. A student planning to apply for admission to such a program should be aware of the important role grades will play in the selection process.

Other criteria could either replace or be added to the R score in the selection process for some limited enrollment programs. In certain cases this could mean sitting for a particular exam, taking an entrance test, being interviewed, submitting a portfolio, etc. This kind of information is kept on file by the CREPUQ and is available in the "*Tableau comparatif des critères de sélection des candidatures évaluées sur la base du DEC aux programmes contingentés de baccalauréat*". The R score may then well be a criterion in the selection process, though not necessarily the only one, for those college students who hope to go into fields where admission to the university is highly competitive.

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<sup>3</sup> Qualifying courses (*cours d'appoint*) are secondary-level courses that must either be taken or repeated and passed to satisfy the admission requirements for certain college programs.

## **4.** ACCESS TO INFORMATION ON THE R SCORE

According to the access to information policy adopted by the *Comité de gestion des bulletins d'études collégiales* (CGBEC), made up of representatives of the colleges, the universities, and the Ministère de l'Éducation, a student wanting to know an R score must apply to his or her college or to the university to which an official request for admission was sent. In addition, for all information of a general nature on the use of the R score in the admissions process, the student must contact the university to which a request for admission was either made or will be made.