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[1] 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 in the section “Admission et dossier étudiant”.

[1] The R score is generally accepted in English to mean the *cote de rendement au collégial (CRC)*.

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

In the context of the admissions process, the general policy of universities 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 all cases, universities are well aware that the methods used in comparing and classifying candidates must be as objective and 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 are inherently the same. The college education regulations are clear on the autonomy enjoyed by each institution in the evaluation of learning. Consequently, 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 so as to take into account the relative strength of each group of students. This method, called the R score, was adopted by Québec universities 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: an indicator of that student's rank in the group based on that individual's grade (the Z score), and an indicator of the relative strength of that group (ISG). Thus, the R score allows for the initial differences between groups in addition to the advantages of the Z score.

R score = (Z score + ISG + 5) x 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 within 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 of the grades and their degree of spread for a class of students, the Z score normalizes the grades of different classes or groups to a common scale, allowing comparisons to be made between them. With this concept, students can then 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 both different yet equivalent.

While using the Z score presents certain advantages in the classification and selection processes, it does not resolve all of the difficulties encountered in evaluating students for admission to university. Indeed, when student groups present different characteristics, the comparisons made using the Z score become less valid and less equal. 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 just 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 grades and the Z score cannot take into account the specific characteristics of these three groups of students, in order to assure them equitable treatment, it is therefore necessary to examine another element these individuals have in common: the relative strength of the group in which a student is part of for a given course. This group strength is based on the weighted average of the grades obtained in the compulsory courses of Secondary IV and V specific to each pedagogical regime (present and past) and followed in the Youth sector.[2] Various studies have conclusively shown that academic performance in the last two years of secondary study is a fair indicator of subsequent performance in college[3].

On the other hand, it should be kept in mind that the classification a student obtains in a course taken at the CEGEP depends entirely on the grade obtained in that course and not on results at the secondary level. The student's average at the secondary level, like that of the other students in the same course, will only serve to determine the ISG. The direct effect of a student's secondary school average on that individual's classification at college will be very limited: for example, it will count for no more than 3% of the ISG if there are 35 students in the group.

Since the R score takes into account group strengths, all students start off with the same opportunity in all 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. In fact, 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 selecting a CÉGEP, 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 done on the entire population of CÉGEP students 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 semester 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,

[2] For admissions prior to the Fall 2009 semester, all grades obtained in Secondary IV and V serve to the calculation of the ISG.

[3] *See* Terril et Ducharme (1994), *Passage secondaire-collégial : Caractéristiques étudiantes et rendement scolaire, Montréal*, SRAM.

there is effectively 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.

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. THE R SCORE AND THE ADMISSIONS PROCESS

3.1 THE IMPORANCE OF THE R SCORE IN THE ADMISSIONS PROCESS

Even if the R score is the instrument of choice in evaluating an application for admission to a university program, in the final analysis it is used mainly in the selection process for admission to programs of limited enrollment. A student planning to apply for admission to such a program should be aware of the important role that grades play in the selection process.

It should be pointed out that in several limited enrollment programs, other criteria may replace or supplement the R score in the selection of candidates. 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 study program is highly competitive.

3.2 GLOBAL AVERAGE R SCORE

The global average R score keeps track of all CÉGEP activities of a student. It is the weighted average of that student's valid R scores: only Physical Education taken before Fall 2007 and qualifying courses[4] are excluded. The weighting is a function of the number of units attributed to each course. Thus, the R score obtained in a course to which was attributed 2.66 units is multiplied by this number (2.66), while the R score in a course of 2 units is multiplied by 2.

For admissions to semesters prior to Fall 2009, it is in terms of its global weighted average R score that an academic record is evaluated, compared, and classified.

3.3 WEIGHT OF FAILURES IN THE CALCULATION OF THE AVERAGE R SCORE

The Comité de liaison de l'Enseignement supérieur (CLES) 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, known as "système de gestion des données d'élèves au collégial" of MELS (Socrate), regardless of the date of first registration at CEGEP.

[4] 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.

3.4 PROGRAM SPECIFIC AVERAGE R SCORE

The CLES approved the recommendation of the CGBEC that, as of admissions to Fall 2009, the MELS includes in its system (Socrate) a mechanism permitting each course to be linked to the study program to which it belongs, thus making possible the calculation of an average R score for each program in which a student has registered in CÉGEP.

For the purpose of selecting candidates, universities therefore use the average R score of the last DEC program in which a candidate has registered, with the condition that at least 16 courses contribute to its calculation. The R scores of the courses that are considered to be relevant prerequisites for admission to certain university programs are integrated into the average R score calculation, when necessary. If the calculation of the average R score of the last registered program is not based on at least 16 courses then the global average R score, that is, the one that takes into account all CÉGEP grades of a student, is used for the analysis of a student record.

Furthermore, when the student has already completed a DEC, the university uses the highest amongst the average R score of the program that has led to the DEC and the average R score of the last registered program (with the condition that at least 16 courses contribute to its calculation). If many DEC sanctions appear in a student record, then a university uses the highest amongst the average R score of the completed DEC programs and the R score of the last registered program (again if the 16 courses condition is satisfied). Relevant prerequisites are added, when necessary, to the average R score used for admissions purposes[5].

The 16 courses criterion ensures that, in the great majority of cases, the last registered program is the one which will lead to the DEC. That R score is thus not influenced upwardly or downwardly by previous academic activities that are not linked to the DEC program aimed at by a candidate. It is important to underline here that all general background courses contribute to each average R score appearing in a student record.

Since university programs do not all require the same prerequisite courses, it is possible that the value of the average R score serving for the analysis of a candidate's record may vary depending on the university program applied to. However, the prerequisites are in most cases already integrated into the CÉGEP program of a student. The addition of the prerequisites to the calculation of the R score is then not required. It is the case, for example, for a CÉGEP graduate of a DEC in Science who wishes to be admitted into a Health Sciences program in university.

[5] In order to facilitate the understanding of these rules, fictitious examples representing a certain number of potential cases are described in appendix B of the document entitled *R score: what it is and what it does*. Note that if the "régime de sanction des études collégiales" is prior to Fall 1999 ("régime 1"), then no program specific average R score can be calculated in the ministerial system. The concerned courses then simply contribute to the calculation of the global average R score.

3.5 ADJUSTMENTS FOR PARTICULAR CANDIDATES

Since the Fall 1999 semester, the vice-rectors of academic affairs of Quebec universities agreed to increase by 0.5 points the average of all students completing an international baccalaureate or the DEC programs in Science, Letters and Arts.

Furthermore, in order to facilitate access to doctoral medicine training by candidates in remote regions, universities increase the average R score of all these candidates when their record is analysed. In place since the Fall 2003 semester, universities increase by 0.5 the average R score of any candidate to a doctorate in medicine program who has completed their Secondary 5 studies in one of the remote regions as designated by the ministère de la Santé et des Services sociaux. The list of these regions is available at www.msss.gouv.qc.ca.

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.