

KEN O'CONNOR



# GRAD

# ES

## WHEN, WHY, WHAT IMPACT, AND HOW?

OVER THE LAST TEN TO FIFTEEN YEARS, each province and territory in Canada has introduced curriculum based on clearly defined learning goals. They use different labels – for example, “learning outcomes” in Manitoba and Alberta, “expectations” in Ontario – but all are intended to be “standards-based” systems where the focus is on outputs (“students will”) rather than inputs (“students will be provided with opportunities to”). At the same time, there has been a growing focus on the key role of assessment in the learning process, and each jurisdiction in Canada has put increasing emphasis on principles of quality assessment and the need for assessment-literate communities. This focus is clear, for example, in *Rethinking Classroom Assessment with Purpose in Mind*, published in 2006 by Manitoba Education, Citizenship and Youth, in collaboration with the Western and Northern Canadian Protocol for Collaboration in Education.

These two parallel developments have led to a growing recognition of a mismatch between many traditional practices and the requirements of standards-based, assessment-literate systems. Practices such as combining achievement and behaviour in grades, the use of penalties for “late work”, the use of zeros as punishments, and the role of homework in grading have all come into question. Some of the provincial policies designed to address these concerns have been controversial.

The purpose of this article is to provide some background to these issues by providing information about the history of grading, the purposes of grades, the impact of grades, and how grades have and should be determined.

### A SHORT HISTORY OF GRADING<sup>1</sup>

Although student assessment and reporting on student achievement has been part of education for centuries, the use of grades is a fairly recent development. Prior to about 1880, reporting was in a narrative format and often simply listed the skills and concepts that each student had mastered, but by the late 1800s and early 1900s schools started to use letter or number symbols to summarize student learning. This reductionist movement began in universities, and then moved to K-12 schools, especially to high schools, in response to a growing student population.<sup>2</sup>

By 1910 the use of percentage grades was common and widely accepted, especially in high schools. This approach, however, came into question with the publication in 1912 and 1913 of research studies by Starch and Elliot that showed the unreliability of teacher-marking using percentages, first in English and then in geometry. As a reaction to this research many schools turned to grading scales with three to five categories, and the five-level A-F scale had become a common approach by the early 1920s. But soon concerns began to be voiced about the subjective nature of this type of grading, and so in the 1930s grading on the curve became increasingly popular, reflecting the common belief that student abilities were distributed along a normal curve.

### DEFINITION OF TERMS

For the purposes of this article, a **grade** is defined as a symbol (letter or number) on a report card that summarizes student achievement. A **mark** or **score** is defined as the symbol (letter or number) given to any student test or performance that provides evidence of student achievement.

Commonly in Canada the term “mark” is used for both of these, but as there are two different processes involved, the meaning of each is clearer when the two terms are used as defined above.

**EN BREF** Les gens conviennent généralement que les notes servent principalement à recueillir des renseignements qui éclairent l'enseignement et l'apprentissage, mais il est rare que ce but soit explicitement énoncé. Les notes sont aussi vues comme sources de motivation, mais cet aspect a contribué à un contexte qui maximise les motivations extrinsèques. La plupart des écoles tentent maintenant d'inculquer l'apprentissage permanent chez leurs élèves – un but qui n'est pas atteint par une motivation extrinsèque. Les notes étaient aussi utiles lorsque les écoles avaient pour mission de « trier » les élèves, mais depuis vingt ans, leur mission a évolué et vise maintenant à s'assurer que tous les élèves atteignent des objectifs d'apprentissage essentiels. Ce virage suscite des interrogations : la nouvelle mission requiert-elle une nouvelle façon d'établir les notes? Il est temps que la pratique traditionnelle d'attribuer des notes de façon individuelle, singulière et privée passe à une pratique commune fondée sur des principes, des lignes directrices et un objectif clairement énoncés.

**For students motivated by grades, their main impact has been to turn school into a grading “game” not a learning “game”**

After the 1930s, there was considerable discussion about the appropriateness of different approaches to grading. With increasing concerns about grading on a curve, some schools eliminated grades completely, some used narratives only, some moved to the use of pass/fail grading, while others moved to a mastery approach. Many schools also continued to use percentage or letter grades or some combination of the two. Thus by the 1950s there was wide variation in grading and reporting practices.

Over the next forty to fifty years, given Canada's centralized decision-making in education at the provincial level, ministries of education gave some direction as to requirements for grading and reporting and usually provided grading scales. Most commonly, this involved several categories at the elementary level and the use of percentages at the secondary level, but schools and school districts still developed their own report cards and assessment policies. The move to central direction has intensified in the last ten to 15 years, and most provinces have now developed detailed assessment policy statements. This centralization reached its peak in 1999, when the Ontario Ministry of Education developed provincial report cards to be used in all publicly supported schools, with letter grades for Grades 1 to 6 and percentage grades for Grades 7 to 12.

**THE PURPOSE OF GRADES**

Trumbull suggests that there have been three main purposes for grading: giving feedback, motivating, and sorting.<sup>3</sup> She expands these broad purposes as illustrated in Figure 1.<sup>4</sup>

Giving Feedback	Motivating	Sorting
<ul style="list-style-type: none"> <li>• Inform parents (and students)</li> <li>• Account to community</li> <li>• Recognize good work</li> <li>• Identify unacceptable work</li> <li>• Promote student self-evaluation</li> <li>• Identify instructional gaps (feedback for the teacher)</li> </ul>	<ul style="list-style-type: none"> <li>• Encourage students to improve or keep working (promote student learning)</li> <li>• Reward students who are doing well</li> </ul>	<ul style="list-style-type: none"> <li>• Make placement or grouping decisions</li> <li>• Certify competence, permit graduation advance student to next grade</li> <li>• Predict future achievement</li> </ul>

Clarity of purpose is critical to everything we do; it is our compass and provides us with a sense of direction, especially when there are questions about how we should proceed. Grades do not serve all purposes equally well, so Trumbull's list of purposes creates a serious problem: with so many purposes for grades, some of which conflict (sorting often conflicts with feedback), it is difficult to get a clear sense of direction. Thus, we need to prioritize. Brookhart suggests that “the *primary purpose* for grading... should be to communicate with students and parents about students' achievement of learning goals” [my italics],<sup>5</sup> the first sub-category of feedback in Trumbull's categorization. Bailey and McTighe express the same idea, adding “school administrators, post-secondary institutions and employers” to the list of recipients.<sup>6</sup>

Although provincial ministries of education generally do not state the purpose of grades, it is reasonable to assume that if they did, they would agree with Brookhart and Bailey and McTighe; the primary purpose of classroom assessment, according to most ministries, is to gather information that informs teaching and learning. However, the critical point here is that ministries, schools, and school districts must clearly identify their primary purpose in grading – whatever it may be – so that subsequent decisions can flow from that purpose.

**THE IMPACT OF GRADES**

Grades are an efficient way to summarize student achievement and have traditionally been believed to motivate students to work hard and behave well. This has been the case for students who receive the grades that they expect or believe they deserve, but for students who receive grades lower than they expect or believe they deserve, grades have often been de-motivators.

For students motivated by grades, their main impact has been to turn school into a grading “game” not a learning “game” because the student's focus becomes the accumulation of points, not learning. Guskey and Bailey note, “The currency of points dominates the academic economy of classrooms...Savvy students keep track of current exchange rates, calculating far in advance the exact number of points they need to obtain the grade they want, and adjust their efforts accordingly. They know they must plan cautiously since they can lose points or be fined for certain transgressions...They also make note of contingencies that allow them to earn extra points or bonuses.”<sup>7</sup>

For students not motivated by grades, the grade-driven economy of schools has caused them to withdraw from learning, frequently becoming behaviour problems and/or dropping out.

Kohn states that “researchers have found three consistent effects of using – and especially, emphasizing the importance of – letter or number grades”:

- Grades reduce students’ interest in learning;
- Grades reduce students’ choice for challenging tasks;
- Grades reduce the quality of students’ thinking.<sup>8</sup>

The basic question raised by the motivational impact of grades is – or should be: What type of motivational environment should we have in place in schools? Grades have contributed to an environment that maximizes extrinsic motivation, but most schools now say that they are trying to develop students into lifelong learners – a goal that is not achieved through extrinsic motivation.

## HOW GRADES ARE DETERMINED

For most of the history of grades, the mission of schools was seen as sorting students into a reliable rank order so that they could be appropriately placed into educational programs and the world beyond school. But over the last twenty years the mission of schools has changed; it is now to ensure that all students have met essential learning goals. This shift has led us to ask whether the new mission calls for a new way of determining grades. Issues that need to be examined include the reference points used to determine grades, the purpose and use of assessments, the quality of assessments, the basis for grades (both the “what” and the “how well”), the ingredients included in grades, and the appropriateness (or lack thereof) of the mean as a summary of student achievement.

### Reference Points

Traditionally a norm-referenced interpretation has been placed on assessment results, and this is still appropriate for standardized testing; but for classroom assessment we must now use a criterion-referenced approach. Classroom assessment expert Rick Stiggins puts it this way: “We have emerged from an era of comparing students with other students based on achievement to a time when we compare student performance to pre-set standards; and now we ask who has and who has not met the standards.”<sup>9</sup>

### Purpose and Use of Assessments

Until recently everything students did, regardless of purpose, has been included in grades; but as our understanding of the various purposes of assessment has improved, we have come to understand that a distinction should be made between assessment *of* learning (summative assessment) and assessment *for* learning (formative assessment). Summative assessments should provide the evidence used to determine grades, while formative assessments support learning by providing students with descriptive feedback that they can use to improve. This has significant implications for classroom practice and is supported by a large and growing body of research demonstrating that when formative assessment is done well, subsequent student achievement improves dramatically.<sup>10</sup>

### The Quality of Assessment

When the primary concern was the rank order of students, the quality of assessment was not a major issue; but when our primary concern is the competence of all students, it is

essential that all assessments provide quality evidence of student achievement. Thus it is now essential that all teachers are assessment literate and understand that quality assessments require clear learning goals, clear purpose, and sound design. The latter requires target-method match and assessments that are well written, well sampled, and free of bias or distortion.

**If the focus is on learning goals, it is essential that grades be as pure measures of achievement as possible.**

### The Basis for Grades

*The What.* Traditionally the basis for grades has been assessment methods or activities, and the categories in teachers’ grade books have been, for example, tests, projects, and assignments. In systems based on learning goals, the basis should be the learning goals themselves, so the categories in an English teacher’s grade book, for example, should be reading, writing, listening, language, and literature.

*The How Well.* This has most commonly been based on an accumulation of points with a set average percentage determining pass or fail. As Canadian assessment expert Damian Cooper notes, “Most Canadian provinces use 50 percent as their pass/fail cut-point. Knowing 50 percent of the material taught can hardly be considered ‘proficient’. Nobody wants to fly with a pilot who scored 50 percent on his or her exams in flight training school. Pass/fail cut-points are an outdated relic of norm-referenced approach to grading.”<sup>11</sup> It has become increasingly obvious that the percentage system is incompatible with a learning goals system and that what is needed instead is clear descriptions of a limited number of levels.<sup>12</sup>

### Ingredients included in Grades

Traditionally grades have resulted from a rather uncertain mix of achievement and behaviour (attendance, punctuality, following rules, etc), and so it has often been difficult to tell what a grade means. If the focus is on learning goals, it is essential that grades be as pure measures of achievement as possible without penalties for such behaviours as handing assessment evidence in late. Ideally, the behaviours we value are reported separately on the report card.<sup>13</sup>

### The Appropriateness of the Mean as THE Measure

Until recently, virtually the only calculation used to determine grades has been the mean, but we teach in math that the mean is an inappropriate measure of central tendency when there are outlier scores. The outlier scores that students usually have are low outliers (especially zeros) so there has been a growing realization that consideration should be given to the median or mode as a more accurate summary of student achievement. There has also been increasing recognition that no measure of central tendency adequately allows for appropriate representation of more recent achievement, so that ultimately grading is (or should be) seen not as just a numerical, mechanical exercise but as an exercise in professional judgement.

One result of all these considerations has been the understanding that grading must move from the individual, idiosyncratic, private practice it has been traditionally to a shared practice based on agreed upon principles or guidelines. Almost all of the experts quoted in this article and other assessment specialists have developed guidelines over the last few years, and while there are differences in emphasis and wording, a consensus about what is best practice in grading has emerged.<sup>14</sup>

## CONCLUSION

Brookhart states, "In a perfect world there would be no grades – at least, not as we know them now."<sup>15</sup> This is probably a reasonable statement, but provincial policies ensure that, for the foreseeable future, there *will* be grades in Canadian schools. To make grades more educative, provincial ministries of education must state clearly what they see as the primary purpose of grades and then ensure that their policies are aligned with that purpose. When that happens it will be possible to say that we have learned from the history of grading and that schools are focused on learning, not grades. |

**KEN O'CONNOR** is an independent consultant on assessment, grading, and reporting and the author of *A Repair Kit for Grading: 15 Fixes for Broken Grade* (Portland, OR: ETS/ATI, 2007), *How to Grade for Learning: Linking Grades to Standards*, 3<sup>rd</sup> ed. (Thousand Oaks, CA: Corwin, 2009), and numerous articles. Previously, he served as a classroom teacher, a curriculum coordinator responsible for student assessment and evaluation for the Scarborough Board of Education and the Toronto District School Board, and a consultant on secondary assessment at the Ontario Ministry of Education.

## Notes

- 1 The information in this section has mostly been obtained from T. R. Guskey and J. M. Bailey, *Developing Grading and Reporting Systems for Student Learning* (Thousand Oaks, CA: Corwin, 2001).
- 2 B. Farr, "Grading Practices: An Overview of the Issues," in *Grading and Reporting Student Progress in an Age of Standards*, eds. E. Trumbull and B. Farr (Norwood, MA: Christopher Gordon, 2000), 4.
- 3 E. Trumbull, "Why Do We Grade – And Should We?" in Trumbull and Farr, 24.
- 4 Trumbull, Figure 2.1, 25.
- 5 S. Brookhart, *Grading*, 2nd ed. (Upper Saddle River, NJ: Merrill/Pearson, 2009), 5.
- 6 J. Bailey and J. McTighe, "Reporting Achievement at the Secondary School Level: What and How?" in *Communicating Student Learning: ASCD Yearbook 1996*, ed. T. R. Guskey (Alexandria, VA: ASCD, 1996), 120.
- 7 Guskey and Bailey, 19.
- 8 A. Kohn, "From Degrading to De-grading," *HighSchool Magazine* (March, 1999).
- 9 R. Stiggins, 2006. "Assessment for Learning: A Key to Motivation and Achievement," *Edge* (PDK) 2, no. 2 (Nov/Dec 2006): 3.
- 10 P. Black and D. Wiliam. 1998. "Inside the Black Box: Raising Standards Through Classroom Assessment" *Phi Delta Kappan* 80, no. 2 (October, 1998): 139-148.
- 11 D. Cooper, *Talk About Assessment: High School Strategies and Tools* (Toronto: Nelson, 2010), 188.
- 12 The two most highly regarded high school programs in the world – Advanced Placement and International Baccalaureate use only levels – AP 5 and IB 7.
- 13 See for example the Ontario Provincial Report Cards with nine "learning skills" on the elementary report card and five on the high school report card. Starting with the 2010-11 school year the same six learning skills will be on all report cards. These report cards can be found at [www.edu.gov.on.ca/eng/document/forms/report/1998/report98.html](http://www.edu.gov.on.ca/eng/document/forms/report/1998/report98.html) (accessed December 28, 2009)
- 14 C. A. Tomlinson and J. McTighe. *Integrating Differentiated Instruction and Understanding by Design* (ASCD, Alexandria, VA: ASCD, 2006): 129-134; R. Stiggins et al, 2004. *Classroom Assessment for Student Learning: Doing it Right, Using it Well* (Portland, OR: ETS, 2004), 312; A. Davies, S. Herbst and B. Parrott Reynolds, *Transforming Barriers to Assessment for Learning* (Courtenay, B.C.: Connections Publishing, 2008), 113-114; Cooper, 208-213; K. O'Connor, *How to Grade for Learning: Linking Grades to Standards*, 3<sup>rd</sup> ed. (Thousand Oaks, CA: Corwin, 2009), 247-248; K. O'Connor, *A Repair Kit for Grading: 15 Fixes for Broken Grades* (Portland, OR: ETS, 2007), 14-15.
- 15 Brookhart, 2.



## Educating the Architects of the Networked Economy

Cisco Networking Academy

Equipping students with IT and networking skills for 21<sup>st</sup> century jobs.

Creating pathways to higher education and careers.



## Former les architectes de la cyberéconomie

le programme Cisco Networking Academy

Doter les étudiants des compétences en informatique et en réseautage dont ils ont besoin pour occuper des emplois du 2<sup>e</sup> siècle Nous offrons des choix menant aux études supérieures ou à une carrière.

[www.cisco.com/go/netacad](http://www.cisco.com/go/netacad)

Cisco | Networking Academy®  
Mind Wide Open™