CHAPTER

15

GRADING AND REPORTING

Grading and reporting student progress is one of the more frustrating aspects of teaching—there are so many factors to consider and so many decisions to be made. This chapter removes some of the complexity by describing the various types of grading and reporting systems and providing guidelines for their effective use.

The task of reporting student progress cannot be separated from the procedures used in assessing student learning and development. If instructional objectives have been clearly defined in performance terms and relevant tests and other assessment procedures have been properly used, grading and reporting become a matter of summarizing the results and presenting them in understandable form. The task is still a perplexing one, however, because the evidence of learning and development must be presented on a very brief report form that is understandable to a variety of users (e.g., students, parents, teachers, counselors, and administrators).

As we discussed in Chapter 12, the systematic collection of student work into a portfolio can provide an effective means of reporting student progress. In most schools, however, teachers are required to submit a grade that provides the overall summary of student achievement for the semester or school year. Reporting student progress becomes especially difficult when the vast array of assessment data must be summarized as a single letter grade (e.g., A, B, C, D, F) or numerical value. Should the assigned grade represent achievement only, or should effort and work habits be included? How should the various aspects of achievement (e.g., tests, daily assignments, reports, lab work, and responses to oral questioning) be weighted and combined? Should the achievement be judged in relation to other students, some absolute standard, or the individual's learning potential? What distribution of grades (i.e., A, B, C, D, F) should be used, and how should this be determined? How can student work be displayed to illustrate progress, strengths, and weaknesses to students and parents? There are no simple answers to these questions.

School or state policies may provide guidelines for answering some of these questions. For example, it may be specified that grades are to be based solely on student achievement.

Verbal labels such as "excellent," "proficient," or "above average" may be associated with the grade. Guidelines may also specify a standards-based or comparative orientation. But the specifics of deciding how to implement performance standards, when a performance meets a proficiency standard, and how to combine the information obtained from classroom observations, homework assignments, tests, assessments, and projects of various types still must be addressed by individual teachers.

Even when schools or states provide guidelines for assigning grades, specific implementation practices vary from school to school and from teacher to teacher within the same school. Many schools have circumvented the problems of using a single letter grade by supplementing it with a more elaborate reporting system. Some of these systems will be described here, but first let us consider some of the functions served by a grading and reporting system.

FUNCTIONS OF GRADING AND REPORTING SYSTEMS

School grading and reporting systems are designed to serve a variety of functions in the school. These include instructional uses, reports to parents, and administrative and guidance uses.

Instructional Uses

The focus of the grading and reporting system should be the improvement of student learning and development. This is most likely to occur when the report (a) clarifies the instructional objectives, (b) indicates the student's strengths and weaknesses in learning, (c) provides information concerning the student's personal–social development, and (d) contributes to the student's motivation. These functions require a much more comprehensive report than the single letter grade.

The improvement of student learning is probably best achieved by the day-to-day assessments of learning and the feedback from tests and other assessment procedures. A portfolio of work designed to display progress can show the strides that have been made during the year with concrete examples. However, students and parents also seem to need a periodic summary of their learning progress. They find it difficult to integrate test scores, ratings, and other assessment results into a summary of how they are doing. A well-designed report form, together with a portfolio of student work that contains carefully selected examples, can provide this systematic summary of learning progress. If they are sufficiently detailed, the report and portfolio of work can pinpoint strengths and weaknesses in learning with implications for corrective action. They also can help communicate desired learning outcomes.

Periodic progress reports can contribute to student motivation by providing short-term goals and knowledge of results. Both are essential features of effective learning. How motivating the reports are likely to be, however, depends on the nature of the report and how it is used. If a single letter grade is used and students are threatened with low grades unless they study harder, the results are likely to have a negative impact. However, if a comprehensive report of learning strengths and weaknesses is used and the report is

presented as an opportunity to check on progress, motivation toward improved learning is likely to result.

As was discussed in Chapter 12, involvement of students in the selection of examples of work to include in a portfolio can encourage reflection on standards of performance. Asking students to select their best piece of writing and to explain why they chose that piece encourages self-reflection and self-evaluation. The inclusion of examples that show early efforts, teacher feedback, and final products can illustrate progress and help students internalize performance standards.

Well-designed progress reports can also aid in evaluating instructional procedures by identifying areas needing revision. When a majority of students have reports showing poor learning progress in a particular area, there may be a need to modify the instructional objectives or the classroom activities. In other cases, the reports may indicate that some special instructional activities would be beneficial for small groups or individuals.

Reports to Parents/Guardians

Informing parents (or guardians) of their children's school progress is a basic function of a grading and reporting system. These reports should help parents understand the objectives of the school and how well their children are achieving the intended learning outcomes of their particular program. This information is important from several viewpoints. First, by knowing what the school is attempting to do, parents are better able to cooperate with the school in promoting their children's learning and development. Second, information concerning their children's successes, failures, and special problems enables parents to give them the emotional support and encouragement needed. Third, knowing their children's strengths and weaknesses in learning provides a basis for helping them make more sound educational and vocational plans. To serve these purposes adequately, the reports and portfolios of student work should contain as much information and detail as parents can comprehend and use. At the elementary level, the report form is frequently supplemented by parent–teacher conferences.

Administrative and Guidance Uses

Grades and progress reports serve a number of administrative functions. They are used for determining promotion and graduation, awarding honors, determining athletic eligibility, and reporting to other schools and prospective employers. For most administrative purposes, a single letter grade is typically required. Such grades have appeal, in part, because they are compact and can be easily recorded and averaged.

There is little doubt that the convenience of the single letter grade in administrative work has been a major factor in retarding the development of more comprehensive and useful progress reports. This need not be the case, however. When a new reporting system is being developed, it is possible to retain the use of letter grades for administrative purposes and supplement them with the type of information needed by students, parents, teachers, and counselors. At the high school level, the retention of letter grades is almost mandatory because most college admission offices insist on them.

Counselors use reports on student achievement and development, along with other information, to help students make realistic educational and vocational plans. Reports that

include ratings on personal and social characteristics are also useful in helping students with adjustment problems. These guidance functions are best served by a reporting system that is both comprehensive and detailed.

In summary, the diverse functions to be served by a grading and reporting system indicate that more elaborate reports are needed than the traditional single letter grade. This does not mean that letter grades should be discarded. They are convenient, easily averaged, useful for administrative functions, and required for college admissions. Instead, letter grades should be supplemented by the type of information needed by the various users of the reports. When this is done, the letter grade can be retained as a pure measure of achievement, and such factors as effort, attitude, work habits, and personal–social characteristics can be reported separately.

TYPES OF GRADING AND REPORTING SYSTEMS

Throughout the history of education, letter grades have been the primary method of reporting student progress in school. Various studies have indicated that approximately 50% to 90% of all schools use letter grades. In some cases, especially at the elementary level, the report form also includes a series of work habits and personal–social characteristics to be checked by the teacher. Various attempts have been made to replace or improve the traditional report form. The modifications typically represent some type of compromise between the need for detailed information and the need for simplicity and conciseness.

Traditional Letter-Grade System

The traditional use of the letter-grade system is to assign a single letter grade (e.g., A, B, C, D, F) for each subject. In some cases a single number (e.g., 5, 4, 3, 2, 1 or 100, 95, 90) is used instead of a letter, but the grading system is essentially the same. This system is concise and convenient, the grades are easily averaged, and they are useful in predicting future achievement, but they have the following shortcomings when used as the sole method of reporting.

1. They typically are a combination of achievement, effort, work habits, and good behavior.
2. The proportion of students assigned each letter grade varies from teacher to teacher.
3. They do not indicate a student's specific strengths and weaknesses in learning.

These limitations of the single letter grade make them difficult to interpret and use. A grade of C, for example, may represent good achievement but poor work habits and disruptive behavior or poor achievement accompanied by attentiveness, strong effort, and good behavior. In reacting to criticisms that the letter-grade system fosters unfair competition among students, some schools have reduced the number of grades to two (e.g., S = satisfactory, U = unsatisfactory) or three (e.g., by adding H = honors). Standards-based efforts have also led to the use of a small number of categories corresponding to the performance standards for which a variety of labels are used in different states and

districts (e.g., advanced, proficient, partially proficient, not yet partially proficient; distinguished, proficient, apprentice, novice; exceptional, proficient, basic, below basic). A smaller number of categories (e.g., satisfactory–unsatisfactory, proficient–not proficient), of course, provide even less information than the traditional letter-grade system.

Pass–Fail System

A two-category system (e.g., satisfactory–unsatisfactory, pass–fail) has been used in some elementary schools for many years. More recently, it has also been used in some high schools and colleges. At these levels, it typically serves as an option to the traditional letter grade in a limited number of courses. It permits students to take some courses, usually elective courses, under a pass–fail option that is not included in their grade-point average. The intent is to encourage students to explore new areas, even those for which they are not fully prepared. It also permits students to focus on those aspects of a course that relate most directly to their major field of study and to neglect those areas of little interest or relevance. Removing the fear of a lower grade-point average gives students greater freedom to select their learning experiences.

Like any two-category system, the pass–fail option is easy to use, but it offers less information than the traditional (A, B, C, D, F) system. It provides no indication of the level of learning, and thus its value for describing present performance or predicting future achievement is lost. Also, study effort is frequently directed toward merely passing rather than a higher level of achievement. Despite its shortcomings, however, the pass–fail option can serve the purposes for which it is intended if its use is restricted to a small number of courses.

A pass–no grade grading system is often used for courses taught under a pure mastery learning approach. Here, where students are expected to demonstrate mastery of all course objectives before receiving credit for a course, a simple *pass* is all that is needed to indicate mastery. The practice of assigning a letter grade of A to all students who complete a course under mastery conditions, as is sometimes done, simply adds greater confusion to the meaning of letter grades. When the pass–no grade system is used, nothing is recorded on a student's school record until mastery of the course is demonstrated. The mastery learning approach presupposes that each student will be given as much time as needed to attain mastery of the course objectives. Thus, the school record remains a blank until the course is successfully completed.

Checklists of Objectives

To provide more informative progress reports, some schools have replaced or supplemented the traditional grading system with a list of objectives to be checked or rated. These reports, which are most common at the elementary school level, typically include ratings of progress toward the major objectives in each subject-matter area. The following statements for reading and arithmetic illustrate the nature of these reports:

Reading

1. Reads with understanding
2. Works out meaning and use of new words

3. Reads well to others
4. Reads independently for pleasure

Arithmetic

1. Uses fundamental processes
2. Solves problems involving reasoning
3. Is accurate in work
4. Works at a satisfactory rate

The symbols used to rate students on each of these major objectives vary considerably. In some schools, the traditional A, B, C, D, F lettering system is retained, but more commonly there is a shift to fewer symbols, such as O (outstanding), S (satisfactory), and N (needs improvement) or P (proficient), PP (practically proficient), and N (needs improvement).

The checklist form of reporting has the obvious advantage of providing a detailed analysis of the student's strengths and weaknesses so that constructive action can be taken to help improve learning. It also provides students, parents, and others with a frequent reminder of the objectives of the school. The main difficulties encountered with such reports are in keeping the list of statements down to a workable number and in stating them in such simple and concise terms that they are readily understood by all users of the reports. These difficulties are probably best overcome by obtaining the cooperation of parents and students during the development of the report form.

Letters to Parents/Guardians

Some schools have turned to the use of letters to provide for greater flexibility in reporting student progress to parents (or guardians). Letters make it possible to report on the unique strengths, weaknesses, and learning needs of each student and to suggest specific plans for improvement. In addition, the report can include as much detail as is needed to make clear the student's progress in all areas of development.

Although letters to parents might provide a good supplement to other types of reports, their usefulness as the sole method of reporting progress is limited by the following factors.

1. Comprehensive and thoughtful written reports require an excessive amount of time and skill.
2. Descriptions of a student's learning weaknesses are easily misinterpreted by parents.
3. Letters fail to provide a systematic and cumulative record of student progress toward the objectives of the school.

The flexibility of this method, which is one of its major strengths, limits its usefulness in maintaining systematic records. Because different aspects of development are likely to be stressed from one report to another, the continuity in reporting is lost.

When used in connection with a more formal reporting system, the informal letter can serve a useful role in clarifying specific points in the report and in elaborating on various aspects of student development. Letters can also be an effective supplement to a portfolio

of student work by providing an overview of the portfolio entries and calling attention to particular things that the parent might consider in reviewing the portfolio. In general, letters probably should be restricted to this supplementary role, however, and be used only as needed for clarification. See the box "Tactful Remarks for Reporting to Parents" for some extreme examples that illustrate the touchiness of reporting to parents.

Portfolios of Student Work

Portfolios of student work were discussed in greater detail in Chapter 12. As we noted there, a carefully constructed portfolio can be an effective means of showing student progress, illustrating strengths, and identifying areas where greater effort is needed. The process of identifying products for the portfolio and commenting on the entries can help students gain a better understanding of expectations and standards of excellence. The portfolio is also an effective means of making grades and other summary reports more concrete for parents and guardians by illustrating both progress and current levels of student achievement.

An effective portfolio is more than simply a file into which student work products are placed. It is a purposefully selected collection of work that often contains commentary on the entries by both students and teachers. The entries in the portfolio need to be selected to illustrate the range of student work (e.g., types of writing, types of mathematical problems, or results of laboratory experiments). The entries also need to be selected to illustrate progress during the year (e.g., products from different parts of the school year) and, in some cases, progress from early to later stages of completing a project (e.g., drafts, revisions, and final versions of a project).

Parent–Teacher Conferences

To overcome the limited information provided by the traditional report card and to establish better cooperation between teachers and parents (or guardians), some schools

Tactful Remarks for Reporting to Parents

A teacher listed tactful ways of reporting to parents concerning their children's misbehavior in school. It included items such as the following:

- **Lying:** "Presents interesting oral reports but has difficulty in differentiating between factual and imaginary material."
- **Cheating:** "Uses all available resources in obtaining answers but needs help in determining when it is appropriate and inappropriate to get assistance from other students."
- **Bullying:** "Has leadership qualities but needs to redirect them into more constructive activities."
- **Laziness:** "Works on school tasks when given ample supervision but needs to develop independent work habits."

Caution: Although tact is desirable, it should not be an excuse for obscuring the message.

use regularly scheduled parent–teacher conferences. This reporting method is most widely used at the elementary level, with its greatest use in the primary grades.

The parent–teacher conference is a flexible procedure that provides for two-way communication between home and school. Besides receiving a report from the teacher, parents have an opportunity to present information concerning the student's out-of-school life. The conference permits teachers and parents to ask questions, discuss their common concerns in helping the student, and cooperatively plan a program for improving the student's learning and development. The give-and-take in such a conference makes it possible to avoid or overcome any misunderstandings concerning the student's progress.

Structuring a conference around a portfolio of student work can greatly facilitate communication between a teacher and parent by using explicit examples of accomplishments and progress. As was discussed in Chapter 12, portfolios can also provide a useful basis for a three-way conference of student, parent, and teacher.

The parent–teacher conference is an extremely useful tool, but it shares two important limitations with the informal letter: (a) It requires a substantial amount of time and skill, and (b) it does not provide a systematic record of student progress. In addition, some parents (or guardians) are unwilling or unable to come for conferences. Thus, it is most useful as a supplementary method of reporting.

MULTIPLE GRADING AND REPORTING SYSTEMS

Schools have used traditional letter grades (A, B, C, D, F) to report student progress for more than 80 years despite efforts to replace them with a more meaningful report. Their continued use indicates that they are serving some useful functions in the school (e.g., administrative). They are a simple and convenient means of maintaining permanent school records. Thus, rather than replace letter (or number) grades, it seems more sensible to try to improve the letter-grade system and supplement it with more detailed and meaningful reports of student learning progress. Some schools already use multiple grading and reporting systems.

The typical multiple reporting system retains the use of traditional grading (letter grades or numbers) and supplements the grades with checklists of objectives. In some cases, two grades are assigned to each subject: one for achievement and the other for effort, improvement, or growth. An example of a high school report form used for multiple grading is shown in Figure 15.1 The report form in the figure uses separate grades for achievement, effort, and ratings on two lists of objectives. On the left side is a list of common school objectives appearing on all the report forms. The list of objectives on the right side is of those pertaining to the particular subject being graded, in this case social studies. This report form makes it possible to assign an achievement grade that solely measures achievement because effort and other personal characteristics are graded separately. It also informs both the student and parents of the progress being made toward the school's objectives and each subject's objectives. This report form was developed by

PROGRESS REPORT
University of Illinois High School
Urbana, Illinois

SOCIAL STUDIES

_____ 1st quarter–November _____ 3rd quarter–April

_____ Semester–February _____ Final Report–June

RATING SCALE: + Outstanding S–Satisfactory U–Unsatisfactory O–Inadequate basis for judgment

S	U	O	Respects rights, opinions, and abilities of others	+	S	U	O	Evidences independent thought and originality
S	U	O	Accepts responsibility for group's progress	+	S	U	O	Seeks more than superficial knowledge
S	U	O	Is careful with property	+	S	U	O	Evidences growth in orderly and constructive group discussion
S	U	O	Uses time to advantage	+	S	U	O	Keeps informed on current affairs
S	U	O	Is attentive	+	S	U	O	Discriminates in the selection and use of social studies materials
S	U	O	Makes regular preparations as directed	+	S	U	O	Demonstrates growth in the skills of critical thinking
				+	S	U	O	Places people and events in their chronological and cultural setting
				+	S	U	O	Demonstrates social responsibility
				+	S	U	O	
				+	S	U	O	
				+	S	U	O	
				+	S	U	O	
				+	S	U	O	

ACHIEVEMENT

The grade is a measure of achievement with respect to what is expected of a student of this class in this school and in relation to what is expected in the next higher course in this subject.

_____ 5 excellent
_____ 4 very good
_____ 3 creditable
_____ 2 passing, but weak
_____ 1 failing
_____ 0 inadequate basis for judgment

EFFORT

The grade below is an estimate, based on evidence available to the teacher, of the individual student's effort.

_____ 5 excellent
_____ 4 very good
_____ 3 creditable
_____ 2 weak
_____ 1 very weak
_____ 0 inadequate basis for judgment

COMMENTS:

Teacher: _____

Figure 15.1
A comprehensive report form that combines dual grading and checklists of objectives

committees of students, parents, teachers, and other school personnel and thus reflects the types of information these groups considered most useful.

Guidelines for Developing a Multiple Grading and Reporting System

No grading and reporting system is likely to be equally satisfactory in all schools. Each school system must develop methods that fit its particular needs and circumstances. The following principles for devising a multiple grading and reporting system are guidelines for this purpose.

1. The development of the grading and reporting system should be guided by the functions to be served. The type of information most needed by the report's users should be included. This typically requires a study of the functions for which the reports are to be used by students, parents, teachers, counselors, and administrators. Although it is seldom possible to meet all their needs, a satisfactory compromise is more likely if they are known. It is helpful to supplement letter grades in each subject with separate reports on course objectives, effort, personal and social characteristics, and work habits. The letter grade should be retained as a pure measure of achievement, and any grades for improvement, effort, or growth should be made separately.

2. The grading and reporting system should be developed cooperatively by parents, students, and school personnel. School reports are apt to be most useful when all users have some voice in their development. This is usually done by organizing a committee consisting of representatives of parent groups, student organizations, elementary and secondary school teachers, counselors, and administrators. Ideas and suggestions are fed into the committee through the representatives, and the members carry back to their own respective groups, for modification and final approval, the committee's tentative plans. This cooperative participation not only will result in a more adequate reporting system but also increases the likelihood that the reports will be understood by those for whom they are intended.

3. The grading and reporting system should be based on a clear statement of educational objectives. The same objectives that have guided instruction and assessment should serve as a basis for grading and reporting. Some of these will be general school objectives, and others will be unique to particular courses or areas of study. Nevertheless, when devising a reporting system, the first question should be, How can we best report student progress toward these particular objectives? The final report form will be limited and modified by a number of practical considerations, but the central focus should be on the objectives of the school and course and the types of performance that represent the achievement of these objectives.

4. The grading and reporting system should be consistent with school standards. Schools and districts that are implementing content and performance standards need to review grading policies in light of those standards. The grading system needs to be aligned with the performance standards if it is to support rather than undermine the implementation of those

standards. Use of the same categories for grades and performance standards is one obvious step. There is also a need, however, to align the performances that students are expected to achieve with the verbal descriptions of the performance standards.

5. The grading and reporting system should be based on adequate assessment. Teachers should not be expected to report on aspects of student performance when evidence is lacking or is unreliable. By the same token, including items on a report form assumes that the performance will be assessed as objectively as possible. Ratings on such items as critical thinking, for example, should be the product of testing, assessment, and controlled observation rather than snap judgments or hazy recollections of incidental happenings. Therefore, in planning a grading and reporting system, it is necessary to take into account the types of assessment data needed. The items included in the final report form should be those on which teachers can obtain reasonably reliable and valid information. The validity and reliability of the grade is directly determined by the reliability and validity of the items constituting the grade as well as having a reasonable number of items to determine the grade.

6. The grading and reporting system should be detailed enough to be diagnostic and yet compact enough to be practical. For guiding students' learning and development, we should present as comprehensive a picture of their strengths and weaknesses as possible. This desire for detail, however, must be balanced by such practical demands as (a) a reasonable amount of time required to prepare and use the reports; (b) reports that are understandable to students, parents, school and college or university personnel, and employers; and (c) reports that are easily summarized for school records. As noted earlier, a compromise between comprehensiveness and practicality is probably best obtained by supplementing the letter-grade system with more detailed reports on other aspects of student development.

7. The grading and reporting system should provide for parent–teacher conferences as needed. At the elementary school level, regularly scheduled conferences with parents might constitute part of the reporting system. At the high school level, such conferences are typically arranged as needed to deal with specific problems. At both levels, however, such conferences should supplement a more formal report form rather than replace it. A uniform method of reporting student progress is needed for school records, and this is difficult to obtain from conference notes.

In summary, a multiple grading and reporting system takes into account the varied needs of students, parents, teachers, and other school personnel. The letter-grade system (A, B, C, D, F) provides a simplified method of keeping a record of student achievement. The checklist of objectives provides a detailed report of student strengths and weaknesses in learning and development. The carefully constructed portfolio provides concrete examples of both progress and level of achievement. The parent–teacher conference helps maintain cooperation between home and school. When letter grades are supplemented by these other methods of reporting, the grades become more meaningful. Rather than being a conglomerate of achievement, effort, improvement, and personal behavior, letter grades can be confined to measuring achievement only. Multiple grading makes this possible by reporting separately on the other aspects of student development.

ASSIGNING LETTER GRADES

Because most schools use the A, B, C, D, F grading system, most teachers will be faced with the problem of assigning letter grades. This involves questions such as the following:

1. What should be included in a letter grade?
2. How should achievement data be combined in assigning letter grades?
3. What frame of reference should be used in grading?
4. How should the distribution of letter grades be determined?

Each of these issues is discussed in turn.

Determining What to Include in a Grade

As noted earlier, letter grades are likely to be most meaningful and useful when they represent achievement only. If they are contaminated by such extraneous factors as effort, amount of work completed (rather than quality of the work), personal conduct, and so on, their interpretation will become hopelessly confused. When letter grades combine various aspects of student development, they lose their meaningfulness as a measure of achievement and suppress other important aspects of development. A letter grade of B, for example, may represent average achievement with outstanding effort and excellent conduct or high achievement with little effort and some disciplinary infractions. Only by making the letter grade as pure a measure of achievement as possible and reporting on these other aspects separately can we hope to improve our descriptions of student learning and development.

Teachers often are comfortable with the notion that grades should be based strictly on achievement for students that they judge to be highly able; but they believe that effort should be considered along with achievement for students whom they judge to be less able (Stiggins, Frisbie, & Griswold, 1989). Although this position seems reasonable on the surface, it has some major drawbacks: (a) It is difficult, if not impossible, for a teacher to adequately assess a student's effort or potential; (b) it is difficult to distinguish between aptitude and achievement even with the most sophisticated measures, as both depend on student learning; and (c) using different bases of grading for different students sends a mixed message and may be unfair to students who are perceived as being more able than they are.

If letter grades are to be valid indicators of achievement, they must be based on valid measures of achievement. This involves the process described earlier in this book—defining the course objectives as intended learning outcomes and developing or selecting tests and assessments that measure these outcomes most directly. How much emphasis should be given to tests, ratings of performances, written reports, and other measures of achievement in the letter grades is determined by the nature of the course and the objectives being stressed. Thus, a grade in English might be determined largely by tests and writing projects, a grade in science by tests and assessments of laboratory performance, and a grade in music by tests and ratings on performance skills. The types of assessment data to include in a course grade and the relative emphasis to be given to each type of evidence are determined primarily by examining the instructional objectives.

Other things being equal, the more important an objective is, the greater the weight it should receive in the course grade. In the final analysis, letter grades should reflect the extent to which students have achieved the learning outcomes specified in the course objectives, and these should be weighted according to their relative importance.

Combining Data in Assigning Grades

When the aspects of achievement (e.g., tests, written reports, or performance ratings) to be included in a letter grade and the emphasis to be given to each aspect have been decided, the next step is to combine the various elements so that each element receives its intended weight. If we decide, for example, that the final examination should count 40%, the midterm 30%, laboratory performance 20%, and written reports 10%, then we will want our course grades to reflect these emphases. A typical procedure is to combine the elements into a composite score by assigning appropriate weights to each element and then use these composite scores as a basis for grading.

Combining data into a composite score to produce the desired weighting is not as simple as it may appear at first glance. This can be illustrated by a simple example. Let us assume that we want to combine scores on a final examination and a term report and that we want them to be given equal weight. Our range of scores on the two measures is as follows:

	Range of Scores
Final examination	80 to 100
Term report	10 to 50

In practice, we would want to combine more than two assessment results before assigning grades, but the use of just two elements is sufficient for illustration. Because the two sets of scores are to be given equal weight, we may be inclined simply to add together the final examination score and the term report score for each student. We can check on the effectiveness of this procedure by comparing the composite score of a student who is highest on the final examination and lowest on the term report (100 + 10 = 110) with a student who is lowest on the final examination and highest on the term report (80 + 50 = 130). It is obvious from this comparison that simply adding together the two scores will not give them equal representation.

Another common but erroneous method of equating scores is to make the maximum possible scores the same for both sets of scores. For our scores, this would mean multiplying the scores on the term report by 2, so that the top score on both measures would equal 100. Applying this procedure to the same two extreme cases we considered earlier, our first student would have a score of 120 (100 + 20) and our second student a score of 180 (80 + 100). It is obvious that this procedure does not equate the scores. In fact, there is now an even larger difference between the two composite scores, because the influence each component has on the composite score depends on the variability, or spread, of scores, not on the total number of points. Thus, to properly weight the components in a composite score, the variability of the scores must be taken into account.

The range of scores in our example provides a measure of score variability, or spread, and this can be used to give the two sets of scores comparable weight. We can give the

final examination and the term report equal weight in the composite score by using a multiplier that makes the two ranges equal. Because the final examination scores have a range of 20 (100 – 80) and the term report scores a range of 40 (50 – 10), we would need to multiply each final examination score by 2 to obtain the desired equal weight. Note that this weighting is the reverse of the incorrect weighting procedure based on making the maximum possible scores equal. We can check on the effectiveness of this procedure by using the same two cases we considered earlier. The student highest on the final examination and lowest on the term report would now have a score of 210 (200 + 10), and the student lowest on the final examination and highest on the term report would also have a score of 210 (160 + 50). Our check shows that the procedure gives the two sets of scores equal weight in the composite score. If we wanted our final examination to count twice as much as the term report, it would be necessary to multiply each final examination score by 4 rather than by 2.

A more refined weighting system can be obtained by using the standard deviation as the measure of variability. For teachers with access to computers, this is a simple matter of converting scores on each test or assessment to T-scores (see Chapter 19). The T-scores can then be multiplied by whatever weights are desired and summed to yield a composite

Using T-Scores to Compute Composite Scores

Assessment Component	Mean	Standard Deviation	Desired Weight	T = 50 + 10 [(X – M)/S]
Midterm (X1)	30	10	20%	T1 = 50 + 10 [(X1 – 30)/10]
Project (X2)	20	4	40%	T2 = 50 + 10 [(X2 – 20)/4]
Final (X3)	65	20	40%	T3 = 50 + 10 [(X3 – 65)/20]

	Raw Scores			T-Scores			Weighted Composite
Students	X1	X2	X3	T1	T2	T3	.2T1 + .4T2 + .4T3
Bob	20	16	55	40	40	45	42
Carla	20	18	45	40	45	40	42
Casey	40	24	85	60	60	60	60
Eva	30	20	95	50	50	65	56

X = raw score, M = mean, S = standard deviation

Note that Bob and Carla have the same weighted composite T-score and that Casey has a slightly higher weighted composite T-score than Eva. If the difference in standard deviations had been ignored and the same weights were applied to raw scores, the weighted composite raw scores would give Bob a higher score (32.4) than Carla (29.2) because he had his best performance on the component with the largest standard deviation, whereas she had her best performance on the component with the smallest standard deviation. Consider why Casey's weighted composite raw score (51.6) is slightly lower than Eva's (52), but their T-scores show the opposite pattern.

score for which grades are assigned (see the box "Using T-Scores to Compute Composite Scores"). Using T-scores or other ways of converting scores to account for differences in standard deviations can easily be accomplished with a personal computer and specialized software described later in this chapter that is designed for purposes of grading. However, the range is satisfactory for most classroom purposes.

Selecting the Proper Frame of Reference for Grading

Letter grades are typically assigned on the basis of one of the following frames of reference:

1. Performance in relation to other group members (relative grading)
2. Performance in relation to specified standards (absolute grading)
3. Performance in relation to learning ability or amount of improvement

Assigning grades on a relative basis involves comparing a student's performance with that of a reference group, typically one's classmates. With this system, the grade is determined by the student's relative ranking in the total group rather than by some absolute standard of achievement. Because the grading is based on relative performance, the grade is influenced by both the student's performance and the performance of the group. Thus, one will fare much better, gradewise, in a low-achieving group than in a high-achieving group.

Although relative grading has the disadvantage of a shifting frame of reference (i.e., grades depend on the group's ability), it is widely used in the schools because much of classroom testing is norm referenced. That is, the tests are designed to rank students in order of achievement rather than to describe achievement in absolute terms. Although position in the group is the key element in a relative system of grading, the actual grades assigned are also likely to be influenced to some extent by achievement expectations the teacher has acquired from teaching other groups. Thus, a high-achieving group of students is likely to receive a larger proportion of good grades than a low-achieving group.

The disadvantages of relative grading are particularly evident in high school, where higher-achieving students may enroll in more challenging advanced or honors courses. Achievement slightly below the class average in an advanced or honors course may actually be equal to or better than that of the highest-ranking student in another, less demanding course in the same subject. It is both misleading and unfair to give the former student a C while the latter student receives an A. Some states have given formal recognition to the more demanding nature of honors courses. Rather than converting letter grades of A, B, C, and D to numerical values of 4, 3, 2, and 1, respectively, for computing grade-point averages, as would be done for a typical course, honors course grades would be converted to values of 5, 4, 3, and 2. Another approach with relative grading that gives appropriate recognition to student self-selection and the more demanding nature of advanced and honors courses is simply to give a larger percentage of As and Bs in those courses than in typical courses.

Assigning grades on an absolute basis involves comparing a student's performance to specified standards set by the teacher, preferably in reference to agreed-on performance

standards for the school and/or district. These standards may be concerned with the degree of mastery to be achieved by students and may be specified as (a) tasks to be performed (e.g., type 40 words per minute without error) or (b) the percentage of correct answers to be obtained on a test designed to measure a clearly defined set of learning tasks. In recent years, school, district, or even state performance standards have been adopted and are intended to guide the absolute judgments about whether a student's record of performance meets the established standards.

With a standards-based system, letter grades are assigned on the basis of an absolute standard of performance rather than a relative one. If all students demonstrate a high level of mastery consistent with the established performance standards, then all will receive high grades.

The absolute grading required for a standard-based reporting system is much more complex than it first appears. To use absolute level of achievement as a basis for grading requires that (a) the domain of learning tasks be clearly defined, (b) the standards of performance be clearly specified and justified, and (c) the measures of student achievement be criterion referenced. These conditions are difficult to meet except in a mastery learning situation. When complete mastery is the goal, the learning tasks tend to be more limited and easily defined. In addition, percentage-correct scores, which are widely used in setting absolute standards, are most meaningful in mastery learning because they indicate how far a student is from complete mastery. All too frequently, schools use absolute grading based on percentage-correct scores (e.g., A = 95–100, B = 85–94, C = 75–84, D = 65–74, F = below 65), but the domain of learning tasks has not been clearly defined, and the standards have been set in a completely arbitrary manner. To fit the grading system, teachers attempt to build norm-referenced tests with scores in the 60 to 100 range. If the test turns out to be too difficult or too easy, they adjust the scores to fit the absolute grading scale. But such grades are difficult to interpret because they represent an adjusted level of performance, often with an ill-defined adjustment procedure, on some ill-defined conglomerate of learning tasks.

Although reporting student performance in relation to learning ability or amount of improvement shown is fairly widespread at the elementary school level, it is inconsistent with a standards-based system of evaluating and reporting student performance. Moreover, grading in relationship to student ability or in terms of student improvement is fraught with difficulties. Making reliable estimates of learning ability, with or without tests, is a formidable task because judgments or measurements of ability are likely to be contaminated by achievement to some unknown degree. Similarly, improvement (i.e., growth in achievement) over short spans of time is extremely difficult to estimate reliably with classroom measures of achievement. Thus, the lack of reliability in judging achievement in relation to ability and in judging degree of improvement will result in grades of low dependability. If used at all (e.g., to motivate low-ability students), such grades should be supplementary. In dual grading, for example, one letter grade might indicate level of achievement (relative or absolute), and the second letter grade might be used to represent achievement in relation to ability or the degree of improvement shown since the last grading period.

Determining the Distribution of Grades

As noted in the previous section, there are two ways of assigning letter grades to measure the level of student achievement: the relative grading system based on relative level of achievement and the absolute grading system based on absolute level of achievement.

Relative Grading. The assignment of relative grades is essentially a matter of ranking the students in order of overall achievement and assigning letter grades on the basis of each student's rank in the group. This ranking might be limited to a single classroom group or might be based on the combined distributions of several classroom groups taking the same course. In any event, before letter grades can be assigned, the proportion of As, Bs, Cs, Ds, and Fs to be used must be determined.

Although clearly inconsistent with current efforts to introduce and use standards-based grading and reporting systems, one method of grading that has been widely used in the past and is still used in some schools is to assign grades on the basis of the normal curve. Grading on the normal curve results in an equal percentage of As and Fs and Bs and Ds. Thus, regardless of the group's level of ability, the proportion of high grades is balanced by an equal proportion of low grades. Such grading is seldom defensible for classroom groups because (a) the groups are usually too small to yield a normal distribution and (b) classroom assessment instruments are usually not designed to yield normally distributed scores. It is only when a course or combined courses have a relatively large and unselected group of students that grading on the normal curve might be defended. Even, then, however, one might ask whether the decision concerning the distribution of grades should be left to a statistical model (e.g., normal curve) or should be made on a more rational basis.

If "grading on the curve" is to be used, the most sensible approach in determining the distribution of letter grades to be used in a school is to have the school staff set general guidelines for the approximate distribution of grades. This might involve separate distributions for introductory and advanced courses, for gifted and remedial classes, and the like. In any event, the distributions should be flexible enough to allow for variation in the performance of students from one course to another and from one time to another in the same course. Indicating ranges rather than fixed percentages of students who should receive each letter grade offers this flexibility. Thus, a suggested distribution for an introductory course might be stated as follows:

A = 10% to 20% of the students
B = 20% to 30% of the students
C = 30% to 50% of the students
D = 10% to 20% of the students
F = 0% to 10% of the students

These percentage ranges are presented for illustrative purposes only; there is no simple or scientific means of determining what these ranges should be for a given situation. The decision must be made by the local school staff, taking into account the school's philosophy, the student population, and the purposes of the grades. All staff members must understand the basis for assigning grades, and this basis must be clearly communicated to users of the grades.

In setting an approximate distribution of grades for teachers to follow, the distribution should provide for the possibility of *no* failing grades. Whether students pass or fail a course should be based on their absolute level of learning rather than their relative position in some group. If all low-ranking students have mastered enough of the material to succeed at the next-higher level of instruction, they all probably should pass. On the other hand, if some have not mastered the minimum essentials needed at the next-higher level, these students probably should fail. Whether minimum performance has been attained can be determined by reviewing the low-ranking students' performance on tests and other assessment instruments or by administering a special mastery test on the course's minimum essentials. Thus, even when grading is done on a relative basis, the pass–fail decision must be based on an absolute standard of achievement if it is to be educationally sound.

Absolute Grading. If the course's objectives have been clearly specified and the standards for mastery appropriately set, the letter grades in an absolute system may be defined as the degree to which the objectives have been attained, as follows:

A = Outstanding. Student has mastered all the course's major and minor instructional goals.

B = Very good. Student has mastered all the course's major instructional goals and most of the minor ones.

C = Satisfactory. Student has mastered all the course's major instructional goals but just a few of the minor ones.

D = Very weak. Student has mastered just a few of the course's major and minor instructional goals and barely has the essentials needed for the next highest level of instruction. Remedial work would be desirable.

F = Unsatisfactory. Student has not mastered any of the course's major instructional goals and lacks the essentials needed for the next highest level of instruction. Remedial work is needed.

If the tests and other assessment instruments have been designed to yield scores in terms of the percentage of correct answers, absolute grading then might be defined as follows:

A = 95% to 100% correct

B = 85% to 94% correct

C = 75% to 84% correct

D = 65% to 74% correct

F = below 65% correct

It should be emphasized, however, that it is a nontrivial task to design a test such that these ranges or any other prespecified ranges will correspond to the intended standards of performance for those grades.

As noted earlier, defining letter grades in this manner is defensible only if the necessary conditions of an absolute grading system have been met. Using percentage-correct scores when the measuring instruments are based on some undefined hodgepodge of learning tasks produces uninterpretable grades.

With absolute grading systems such as these, the distribution of grades is not predetermined. If all students demonstrate a high level of mastery, all will receive high grades. If some students demonstrate a low level of performance, they will receive low grades. See the "Guidelines" box.

The absolute grading system for reporting on student progress seldom uses letter grades alone. A comprehensive report generally includes a checklist of objectives to inform both student and parent which objectives have been mastered and which have not been mastered by the end of each grading period. In some standards-based programs, letter grades (or numbers) are assigned to each objective or benchmark associated with a content standard to indicate the level of proficiency that has been achieved. An example of such a report form, designed for use in a middle school, is shown in Figure 15.2. This form is designed for reporting on benchmarks at the middle school level associated with one of the six Colorado Model Content Standards for Mathematics. A numerical rating is assigned to each objective as follows:

Has Acquired Proficiency

4 = Skill well developed, good proficiency

3 = Skill developed satisfactorily, proficiency could be improved

2 = Basic skill developed, low proficiency, needs additional work

Not Acquired

1 = Basic skill not acquired

As with other types of absolute grading, the number of 1s, 2s, 3s, and 4s to be assigned to each benchmark associated with the standard is not predetermined but depends entirely

GUIDELINES

Effective Grading

1. Describe your grading procedures to students at the beginning of instruction.
2. Make clear to students that the course grade will be based on achievement only.
3. Explain how other elements (effort, work habits, and personal–social characteristics) will be reported.
4. Relate the grading procedures to the intended learning outcomes (i.e., instructional goals and objectives).
5. Obtain valid evidence (e.g., tests, assessments, reports, or ratings) as a basis for assigning grades.
6. Take precautions to prevent cheating on tests and assessments.
7. Return and review all test and assessment results as soon as possible.
8. Properly weight the various types of achievement included in the grade.
9. Do not lower an achievement grade for tardiness, weak effort, or misbehavior.
10. Be fair. Avoid bias, and when in doubt (as with a borderline score), review the evidence. If still in doubt, assign the higher grade.

Example Content Standard for Middle School Mathematics

Colorado Model Content Standards for Mathematics: Standard 2

"Students use algebraic methods to explore, model, and describe patterns and functions involving numbers, shapes, data, and graphs in problem-solving situations and communicate the reasoning used in solving these problems" (see http://www.cde.state.co.us/download/pdf/math.pdf).

Middle School Reported Proficiencies

	Achievement of Benchmark			
	4	3	2	1
1. Representing patterns and relationships in tables and graphs	___	___	___	___
2. Analyzing patterns and relationships using standard algebraic notation	___	___	___	___
3. Describing patterns using variables, equations, and expressions	___	___	___	___
4. Analyzing functional relationships between variables	___	___	___	___
5. Using functional relationships to explain how change in one variable results in change in another	___	___	___	___
6. Using and distinguishing between linear and nonlinear functions	___	___	___	___
7. Solving simple linear equations using a variety of methods	___	___	___	___
8. Using a calculator to solve problems	___	___	___	___
9. Using a computer to solve problems	___	___	___	___

Figure 15.2

Illustrative report form used for reporting benchmarks intended to be consistent with content standard

on the absolute level of performance achieved by each student. If all students achieve good proficiency on a particular objective, all will receive 4s on that benchmark.

RECORD-KEEPING AND GRADING SOFTWARE

Gradebooks have been a familiar part of teaching for many decades. Although that is as true in the 21st century as it was at the start of the 20th, the form of the gradebook has undergone substantial change as electronic gradebooks replace or supplement the familiar notebook-style paper gradebook.

Although any simple spreadsheet can be used as a gradebook, a host of specialized software is available that is designed to facilitate the common tasks of recording and combining grades. Most computer gradebook software is based on an underlying spreadsheet design. The software may have templates to aid in data entry and simple

procedures for specifying rules for combining grades from several sources, such as homework, tests, assessments, and projects. The software also provides various options for printing, reporting, and summarizing results. Sometimes the gradebook software may be linked to software designed to perform other functions, such as test construction, item banking, test administration, or keeping attendance.

A listing of a few examples of gradebook software programs is provided in the box "Examples of Gradebook Computer Software." The list is not exhaustive but provides a range of examples. Because existing software is constantly being updated and new software is added on a regular basis, a search of the Internet is a good way to bring such a list up to date and learn about new options. A brief overview written by Sherril Steele-Carlin is available on the Education World Web site at http://www.education-world.com/a_tech/tech031.shtml.

CONDUCTING PARENT–TEACHER CONFERENCES

Regardless of the type of grading and reporting system used in the school, the parent–teacher conference is an important supplement to the written report of student progress. The face-to-face conference makes it possible to share information with parents (or guardians), to overcome any misunderstanding between home and school, and to plan cooperatively a program of maximum benefit to the student. At the elementary school level, where parent–teacher cooperation is particularly important, conferences with parents are regularly scheduled. At the secondary level, the parent–teacher conference is typically used only when some special problem situation arises.

Examples of Gradebook Computer Software

Software	Company	Web site
1st Class GradeBook	1st Class Software	http://www.1st-class-software.com
Class Mate Grading	4th Street	http://www.classmategrading.com
GradeGenie™ Software	Kilowatt Software	http://www.kilowattsoftware.com/GradeGeniepage.htm
Class Action Gradebook	CalEd Software	http://www.classactiongradebook.com
MyGradeBook	Pearson Education	http://www.mygradebook.com/default.cfm
Grade Machine®	Misty City Software	http://www.mistycity.com

Conferences with parents are most likely to be productive when they are preceded by careful planning and the teacher has skill in conducting such conferences. Many schools offer in-service training for teachers to help them develop effective conference techniques. Typically, such training includes knowledge of how to conduct a parent–teacher conference and role playing to practice the use of conference skills. The following points provide helpful reminders when preparing for and conducting parent–teacher conferences.

1. Make plans for the conference. Determine ahead of time the goals of the conference. Your main purpose may be to inform parents of their student's progress, but you may also want to obtain information from parents, make suggestions for home study, or discuss how to solve a particular problem. It is helpful to review the student's record, organize the information you are going to present, and make a list of points you want to cover and questions you plan to ask. Portfolios can provide a good basis for highlighting topics for discussion, but only if the entries are carefully selected and reviewed.

2. Begin the conference in a positive manner. Starting the conference by making a positive statement about the student sets the tone for the meeting. Saying something like "Kimberly really enjoys helping others," "Ruben is an expert on dinosaurs," or "Marie is always smiling" tends to create a cooperative and friendly atmosphere. Once established, this positive attitude should be maintained throughout the conference.

3. Present the student's strong points before describing areas needing improvement. It is helpful to present examples of the student's work when discussing the student's performance. A brief review of portfolio entries before the conference is useful in identifying appropriate examples. The work examples help keep the focus on what the student can do and what he or she has yet to learn. Showing a mathematics test to a parent is much more effective than simply saying the student "does addition problems well but has difficulty with division problems" or "is good with simple computation but needs help with story problems." Similarly, showing examples of an essay written in September alongside one written the following February makes the statement that the student's writing "has shown great improvement" much more concrete.

4. Encourage parents to participate and share information. Although as a teacher you are in charge of the conference, you must be willing to listen to parents and share information rather than "talk at" them. They may have questions and concerns about the school and about their child's behavior that need to be brought out before constructive, cooperative action can be taken.

5. Plan a course of action cooperatively. The discussion should lead to what steps can be taken by the teacher and the parent to help the student. A brief summary at the end of the conference should review the points discussed and the action to be taken at home and school.

6. End the conference with a positive comment. At the end of the conference, thank the parents for coming and say something positive about the student, such as "Noah has a good sense of humor, and I enjoy having him in class." Any such statement should, of course, fit the student and not be a vague generality that is used repeatedly.

7. Use good human relations skills during the conference. Some of these skills can be summarized by the following **do's** and **don'ts.**

Do's

- Be friendly and informal.
- Be positive in your approach.
- Be willing to explain in understandable terms.
- Be willing to listen.
- Be willing to accept parents' feelings.
- Be careful about giving advice.

Don'ts

- Don't argue or get angry.
- Don't ask embarrassing questions.
- Don't talk about other students, teachers, or parents.
- Don't bluff if you don't know an answer.
- Don't reject parents' suggestions.
- Don't be a know-it-all, with pat answers.

Although one cannot expect to conduct an effective conference by reading about how to do it, these points serve as a helpful reminder of things to do and to avoid when preparing for a conference.

REPORTING STANDARDIZED TEST RESULTS TO PARENTS

Standardized test results are sometimes reported to parents during a parent–teacher conference. Although parents may have a legal right to all information the school has concerning their children, it should be presented to them in an understandable and usable form. This means avoiding technical jargon and presenting test results to parents in language that is meaningful to them. There also will be less chance of misunderstanding and more chance of being viewed in proper perspective if the test results are presented as part of the total pattern of information about the student.

In preparing to report to parents, review the test results and decide when and how they will be introduced into the conference. The meaningful communication of test results to parents includes the following:

1. Describing what the test measures
2. Explaining the meaning of test scores
3. Clarifying the accuracy of test scores
4. Discussing the use of test results

The amount of detail you give in each of these areas will, of course, depend on the time available for the conference and the parents' depth of understanding of the test results. In general, it is best to keep the explanations brief and simple. Do not overwhelm parents with more test information than they can grasp in the short span of time that is typically available for presenting test information.

Describing What the Test Measures

In reporting on the results of an aptitude or learning ability test, saying something like "This test measures skills and abilities useful in school learning" may be sufficient. If the test contains several scores (e.g., verbal, quantitative, and nonverbal), each section of the test may be described in similarly general terms. Test manuals usually contain general descriptions of the tests and subtests that can be used to explain the test to parents. The following list of things to avoid should help prevent misinterpretation.

1. Do not refer to aptitude or learning ability tests as intelligence tests. The term *intelligence* is emotionally charged and often misunderstood.
2. Do not describe aptitude or learning ability tests as measures of fixed abilities. They are not! They measure learned abilities.
3. Do not say, "These test scores predict how well your child will do in school." They won't! Predictions for individuals are hazardous at best, and many factors determine school success. It is better to say something like "Students with scores like these usually do well in school" or, for low scores, " . . . usually find learning difficult."

Achievement tests are easily described in terms of the test content, and the names of the subtests usually indicate what the test measures. To say that a reading test measures "vocabulary and reading comprehension" or that a math test measures "computation and problem solving" is frequently sufficient. In some cases, it may be desirable to describe the test results by objective or item clusters, and these are typically identified on the student's individual report form. When narrative report forms are used, the test content is included as part of the narrative report.

Interpretations of vocational interest inventories, personality inventories, and other guidance-oriented assessment devices are best interpreted by the school counselor or other guidance personnel. Parents should be referred to the appropriate staff member if they have questions about scores on these instruments.

Explaining the Meaning of Test Scores

More detailed discussion of standardized tests and the meaning of various types of scores are provided in Chapters 16 through 19. In this section, we simply provide a broad overview of issues in explaining standardized test results to parents. In making norm-referenced interpretations of test scores, both the meaning of the score and the nature of the norm group should be explained to parents, both simply and understandably. Percentile ranks, grade-equivalent scores, and stanines are widely used in reporting to parents because they are easy to explain and misinterpretations are less likely to occur. Saying something like the following will usually suffice with these scores.

Figure 15.3 shows the relation of stanines, percentile ranks, and broad verbal descriptions that can be used in reporting to parents.

It is wise to report all test results in terms of the same type of score (e.g., percentile ranks, grade equivalents, or stanines). This makes it easier to explain the scores to parents and makes comparisons among tests more understandable.

Although parents are interested in how their child's test performance compares with that of other children, they also want to know what the child has learned and has yet to

EXAMPLES *Interpreting percentile ranks:* "On the reading vocabulary test, Mary scored higher than 85% of a national group of fourth-grade students." (It might also be necessary to point out that the 85% refers not to the percentage of items answered correctly but only to the percentage of students scoring lower.)

Interpreting grade-equivalent scores: "On the reading vocabulary test, Mary scored as well as the typical student in a national group did in the spring of the fifth grade. That is well above the national average for fourth-grade students. The score does not necessarily mean that Mary can do all aspects of fifth-grade work, however, only that she does fourth-grade work better than most in the fourth grade and about as well as the typical fifth-grade student."

Interpreting stanines: "On a scale of 1 to 9, on which the average score is 5, Mary received a score of 7 on the reading vocabulary test, when compared with a national group of fourth-grade students." (In some cases it may be desirable to use verbal descriptions such as *above average* [7, 8, 9], *average* [4, 5, 6], or *below average* [1, 2, 3] in place of numbers.)

learn. This type of criterion-referenced interpretation is more readily understood by parents and is typically reported in terms of relative degree of mastery. If you use percentage-correct scores, you may want to distinguish between percentile scores and percentage-correct scores. If you use mastery–nonmastery designations, describe the standard of mastery and explain how it was determined.

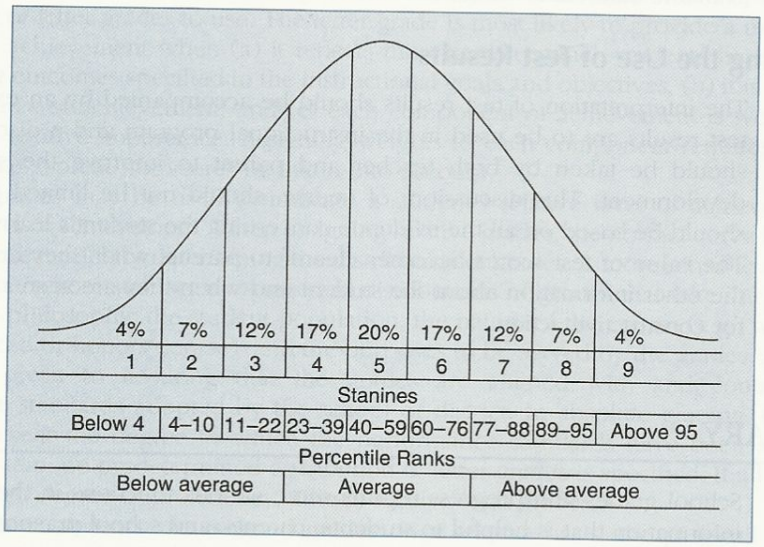

Figure 15.3
Relation of stanines, percentile ranks, and broad verbal descriptions in a normal distribution

Clarifying the Accuracy of Test Scores

It is important to communicate to parents that all test scores contain some error. This can be done most easily if confidence bands (i.e., error bands) are used in interpreting test scores. Profiles using percentile rank frequently include confidence bands. If these are not available, percentile ranks should be interpreted as estimates that may vary up or down by several points on retesting.

Stanines contain broad units that allow for measurement error. Because each stanine is at least half a standard deviation wide, a difference of two stanines usually represents a significant difference in test performance.

Thus, if we had scores such as these,

Mathematics	8
Reading	6
Science	5

we could make the following interpretation: "Performance is higher in mathematics than reading and science, but there is no real difference in performance between reading and science." Parents should be told that a difference of 1 stanine is so small that it can be accounted for by errors of measurement alone.

When interpreting test results by objective or by item cluster, attention should be paid to the number of items on which each interpretation is based. If the number of items is small (say less than 10), make only tentative interpretations and explain to the parents that these are simply clues to be verified by further study. When combined with the results of teacher-made tests and other classroom work, more dependable interpretations may be possible. It is always good practice to interpret test scores to parents in light of the other available data concerning the student.

Discussing the Use of Test Results

The interpretation of test results should be accompanied by an explanation of how the test results are to be used in the instructional program and a discussion of what action should be taken by both teacher and parent to improve the student's learning and development. This discussion, of course, should not be limited to the test results but should be based on all the evidence concerning the student's learning and development. The value of test scores becomes clearer to parents when they are coordinated with all the other information about the student and when they are seen as contributing to plans for constructive action.

SUMMARY

School grades and progress reports serve various functions in the school. They provide information that is helpful to students, parents, and school personnel. Students find them useful as summary appraisals of learning progress that serve somewhat the same functions as other assessment results. Parents, teachers, and counselors use the information in guiding learning and development and in helping students make realistic future plans.

Administrators use the information to determine promotion, athletic eligibility, honors, and graduation. The reports also provide a basis for reporting to other schools, to colleges and universities, and to prospective employers.

The diverse functions of progress reports make it difficult to find a universally satisfactory reporting method. Some of the methods that have been tried include (a) the traditional grading system (e.g., A, B, C, D, F), (b) the pass–fail system, (c) checklists of objectives, (d) informal letters, (e) portfolios of selected examples of student work, and (f) parent–teacher conferences. Each method has rather severe limitations when used alone. Probably the best reporting system combines a concise grade for administrative functions with a more detailed report and portfolio for teaching and guidance purposes. In any event, some combination of methods seems most appropriate.

The letter-grade system of grading (A, B, C, D, F) continues to be the most widely used system at both the elementary and secondary levels despite attempts to replace it with a more meaningful report. This is probably because such grades are easily assigned and averaged and serve many useful administrative functions. Thus, it seems sensible to retain letter grades as a pure measure of achievement and to supplement them with more detailed and meaningful reports of learning progress. Such a multiple grading and reporting system should be developed cooperatively by parents, students, teachers, and other school personnel. Efforts should be made to develop a system that is in harmony with the functions to be served, the school's objectives, and the assessment data available. Ideally, the report form should be as comprehensive and detailed as is practical and should be supplemented by parent–teacher conferences as needed.

Whether or not a multiple grading and reporting system is used in a school, most teachers will be responsible for assigning letter grades to students. This involves such considerations as determining what to include in the letter grade, how to combine the various achievement data into a composite, what frame of reference to use, and what distribution of letter grades to use. The letter grade is most likely to provide a meaningful measure of achievement when (a) it reflects the extent to which students have attained the learning outcomes specified in the instructional goals and objectives, (b) it is based on valid measures of achievement, and (c) each component of achievement is weighted in terms of its relative importance. Assigning weights to each component requires that the variability (i.e., spread) of scores be taken into account.

Letter grades may be used to indicate a student's relative level of achievement or absolute level of achievement. When assigning relative grades, the normal curve is seldom an appropriate model for determining the distribution of grades. A more sensible approach is to have the school staff set up suggested distributions of grades that take into account the school's philosophy, the student population, the nature of the course (e.g., whether it is an advanced or honors course), and the purposes to be served by the grades. Attention should be given to ensuring that the grades are aligned with and contribute to performance standards adopted by the school or district. In absolute grading, the letter grades represent the degree to which the performance standards have been achieved. With this system, no predetermined distribution of letter grades is specified. If all students achieve a high degree of proficiency, all will receive high grades.

Even when students are assigned grades on a relative basis, the pass–fail decision should be based on a student's absolute level of achievement. The important consideration is whether the student has the minimum knowledge and skills needed to succeed at the next-highest level of instruction.

Letter grades are sometimes assigned on the basis of performance in relation to learning ability or amount of improvement. The problems of adequately judging learning ability apart from achievement and of reliably measuring learning gain over short spans of time restrict the use of these grading methods. If used at all (e.g., for motivation purposes), such grades should supplement grades based on the student's relative or absolute level of achievement.

Parent–teacher conferences are an important method of sharing information with parents. Such conferences should supplement the more formal written report of student progress, however, rather than replace it. Effective conferences with parents require careful planning and sound conference techniques. Portfolios of student work can help make both student progress and level of achievement concrete for parents. Because reports of standardized test results also may be expected to be part of some conferences, teachers should know how to report test results to parents. Although guidelines are useful in preparing for conferences with parents, in-service training is usually needed to develop adequate conference skills.

LEARNING EXERCISES

1. What are the advantages and limitations of each of the following grading systems?
   a. Letter-grade system (A, B, C, D, F)
   b. Pass–fail system
   c. A standards-based reporting system (e.g., advanced, proficient, partially proficient, and unsatisfactory)
   d. Checklist of objectives
2. What types of information are most useful in a grading and reporting system designed to support the instructional program of the school? Why?
3. What are the advantages and limitations of a multiple grading and reporting system?
4. What are some of the uses of portfolios of student work? How are portfolios different than simple files of student work?
5. If you were to help set up a grading and reporting system for the level at which you plan to teach, what types of grades and reports would you want included? Why?
6. What procedures are involved in using an absolute basis for grading? What are some of the problems in using this system?
7. What are the advantages and limitations of assigning grades on a relative basis?
8. Describe the procedure for combining two test scores into a composite score where one of the scores is given twice the weight of the other.
9. List as many ways as you can think of for improving grading and reporting in the school.
10. What factors should be considered when deciding whether to pass or fail a student? Do you think the decision should be based on a relative standard or an absolute standard? Why?
11. What types of information should you have at hand during the parent–teacher conference? How would you explain to parents that their child was performing poorly in school? Describe the general approach that you would use in explaining test scores to parents.

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Stiggins, R. J., Frisbie, D. A., & Griswold, P. A. (1989). Inside high school grading practices: Building a research agenda. *Educational Measurement: Issues and Practice, 8*(2), 5–14.

FURTHER READING

Airasian, P. W. (2004). *Classroom assessment* (5th ed.). New York: McGraw-Hill. The chapter on grading provides a discussion of grading and gives examples of report cards.

Arter, J. R., & Spandel, V. (1992). Using portfolios of student work in instruction and assessment. *Educational Measurement: Issues and Practice, 11*(1), 36–44. Describes characteristics of portfolios and provides suggestions on their design. The article is part of an instructional module series of the National Council on Measurement in Education.

Gronlund, N. E. (2005). *Assessment of student achievement* (8th ed.). Boston: Allyn & Bacon. Chapter 10, "Grading and Reporting," discusses the selection of the basis for grades as well as straightforward examples of combining results to determine grades.

Macmillan, J. H. (2006). *Classroom assessment: Principles and practice for effective instruction* (4th ed.). Boston: Allyn & Bacon. Chapter 11, "Grading and Reporting Student Performance," describes the functions and types of grades as well as ways of combining results from different assessments into grades. Also discusses reporting to parents and provides a list of computer software packages in Appendix C.

Ory, J. C., & Ryan, K. E. (1993). *Tips for improving testing and grading*. Newbury Park, CA: Sage Publications. Chapter 7, "Assigning Grades," discusses the purposes of grading and provides suggestions for developing and implementing a grading strategy.

Popham, W. J. (2007). *Classroom assessment: What teachers need to know* (5th ed.). Boston: Allyn & Bacon. Chapter 15, "Evaluating, Teaching and Grading Students," includes a discussion of electronic record keeping and grading.

Terwilliger, J. S. (1989). Classroom standard-setting and grading practices. *Educational Measurement: Issues and Practice, 8*(2), 15–19. Presents a model of grading that combines features of normative and absolute grading approaches.