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ABSTRACT

High school sophomores' (N=1,717) self-reported coursework and grade information for 26 courses was collected as part of a fall 1991 Preliminary American College Test Plus (P-ACT+) administration. Students were from 55 high schools. The accuracy with which students reported courses taken and grades earned was investigated by comparing this information to data obtained from school transcripts. The typical (median) proportion of students providing accurate reports of courses taken was 0.96. The typical proportion of students accurately reporting grades was 0.64, and the corresponding median correlation between self-reported and transcript grades was 0.79. Variation in reporting accuracy was found across schools and for selected subgroups of students. Students' self-reported coursework and grade information appeared sufficiently accurate to be used for research concerning the educational development of groups of students. Self-reported grades did not appear to be sufficiently accurate for use in decisions concerning the educational development of individual students. Two appendices contain forms used in the study, and eight tables present study information. There is an eight-item list of references. (Author/SLD)

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ACCURACY OF SELF-REPORTED COURSE WORK AND GRADE INFORMATION OF HIGH SCHOOL SOPHOMORES

Jeff Schiel
Julie Noble

ABSTRACT

High school sophomores' self-reported course work and grade information for 26 courses was collected as part of a fall, 1991 P-ACT+ administration. The accuracy with which students reported courses taken and grades earned was investigated by comparing this information to data obtained from school transcripts. The typical (median) proportion of students providing accurate reports of courses taken was .96. The typical proportion of students accurately reporting grades was .64, and the corresponding median correlation between self-reported and transcript grades was .79. Variation in reporting accuracy was found across schools, and for selected subgroups of students. Students' self-reported course work and grade information appeared sufficiently accurate to be used for research concerning the educational development of groups of students. Self-reported grades did not appear to be sufficiently accurate for use in decisions concerning the educational development of individual students.

ACCURACY OF SELF-REPORTED COURSE WORK AND GRADE INFORMATION OF HIGH SCHOOL SOPHOMORES

An interest in national educational reform has been present since the early 1980s. Its origins are reflected in the writings of such groups as the National Commission on Excellence in Education (1983) and the National Science Board Commission on Precollege Education in Mathematics, Science, and Technology (1983). In response to the reform movement, statewide assessment programs are being developed (Firestone, 1990). Such programs typically use tests to measure the academic skills and knowledge students have acquired as a result of exposure to educational curricula. It is not uncommon for these tests to be standardized measures, the scores of which have been validated for use as measures of educational development.

Standardized tests are increasingly being used as part of outcomes assessment studies, for the purpose of evaluating educational programs. It has been suggested that other indicators of educational development, such as surveys, interviews, and school records also be used for this purpose (Cohen, 1988). Interpreting the relationships between students' test scores, and their course work and grade information obtained from school records can be useful in outcomes assessments. For example, a program may receive some form of support (e.g., funding, personnel) on the basis of its students' test scores. This practice could be justified, in part, by investigating whether sufficiently strong relationships exist between the scores and students' grades, which are an alternative measure of performance. Data on students' course work and grades, therefore, are important in outcomes assessments.

One traditional source of course work and grade information is school transcripts. There are practical problems associated with using transcript data from different schools, however: In most states, course offerings and grading standards are school-specific, making comparisons across schools difficult. For example, a course titled "Algebra I" at one high school may be identified as "Mathematics I" at another school. In addition, similar grades from two high schools may represent different levels of achievement. In order to compare educational growth across schools, course offerings and grades must therefore be converted to common scales. The course work, grades, and GPAs recorded on students' transcripts need to be transcribed, recoded, and key-entered prior to analysis. These tasks are tedious, often time-

consuming, and may still not be sufficient if course contents or grading practices differ substantially. For these reasons, an alternative to using transcript data is desirable. One option is to use students' self-reports of course work and grade information, provided that such reports are sufficiently accurate for their intended use.

The P-ACT+ Program is an assessment system designed to provide tenth-grade students with information that will be helpful as they plan for postsecondary education. Students' performance on the P-ACT+ is reported as scaled scores, ranging from 1 to 32, in four academic areas: English, Mathematics, Reading, and Science Reasoning. A Composite score, based on the average of the four scaled scores, is also reported.

The P-ACT+ is increasingly being used in outcomes assessment. The current P-ACT+ system collects general information about the number of years of course work planned in English, mathematics, social studies, natural science, and foreign language. It does not, however, collect specific course work and grade information. Further, the courses a student has taken cannot be distinguished from those s/he plans to take. As part of a pilot project for an assessment program in one southern state, a one-page form, called the Course Grade Information Section (CGIS) was developed for administration with the P-ACT+ (see Appendix A). The CGIS collects course work and grade information for 26 courses in the areas of English, mathematics, social studies, natural science, arts, and foreign languages.

The purpose of this study was to verify the accuracy with which high school sophomores reported course work and grade information, as collected on the P-ACT+ CGIS. If sufficiently accurate, this information could be used as an alternative to that obtained from transcripts in outcomes assessment studies.

For several years, ACT has examined the relationships between students' self-reported course grades and the corresponding grades obtained from school transcripts. Strong relationships between self-reported and transcript grades indicate accurate reporting on the part of students Correlations between self-reported and transcript grades have been found to be fairly strong, ranging from .80 (Sawyer, Laing, & Houston, 1988) to .91 or .93 (Davidsen, 1963; Richards, Holland, & Lutz, 1966; Valiga, 1986).

Data

The P-ACT+ was administered during October and November, 1990, to a representative sample of sophomores from 83 high schools in a southern state. Each student completed the CGIS and the planned course work items on the answer folder as part of the test administration. All completed test materials and CGIS forms were then returned to ACT for scanning and scoring.

CGIS forms were optically scanned and students' responses were entered into a computer file. This file contained students' reports of courses taken and grades earned, as well as each student's name, SSN, race, gender, high school code, and P-ACT+ Composite score.

To verify the self-reported course work and grade data, participating high schools were asked to send transcripts for a representative subsample of their P-ACT+-tested students. This subsample, consisting of about 1,400 students, was originally selected for use in another study, and was stratified on the basis of such variables as school size and control (e.g., public, private). Some schools also provided transcripts for their P-ACT+-tested students who were not included in the subsample. Data for these students were included in the study, thereby augmenting the subsample by about 300.

Schools were also asked to send either course listings or a course catalog, to facilitate the review of transcripts and classification of courses (described below). Transcripts and course listings were received in January and February, 1991. All high schools used a five-point grading scale (A, B, C, D, F), when awarding grades to students. This scale was consistent with that of the CGIS.

The transcript data were transcribed onto specially-developed coding forms (see Appendix B), which allowed the recording of both primary and alternate courses. If a student's transcript indicated that a certain course was not taken, then the transcript reviewers searched for any potential alternate courses, using the course listings for assistance. In cases where courses were not readily identifiable, the reviewers contacted the relevant high school and inquired about the contents of the courses. For example, if General Mathematics (a primary course) did not appear on the student's transcript, then the reviewers looked for an alternate course, such as Arithmetic or Pre-Algebra. Or, if the reviewers noticed that Agricultural Science

was taken instead of Physical Science, but were not certain whether it was equivalent to the primary course, they contacted the school for additional information.

After the course work and grade data were transcribed, they were key-entered and matched to the CGIS file. The resulting analysis file contained 1,717 matched student records from 55 high schools.

Method

Procedures developed by Sawyer, Laing, and Houston (1988) were used to investigate the accuracy with which students reported course work and grade information. Two types of comparisons were made between the student-reported data and the transcript data: students' reports of course work taken and the course work indicated on their transcripts, and students' reports of the grades earned in those courses and the grades reported on their transcripts.

Course Work Taken

The self-reported course work information collected on each student's CGIS was compared to the information from the transcript. If the student and transcript data for a course agreed (i.e., they both indicated that the student had either taken or not taken the course), then the student's response for that course was classified as consistent. Otherwise, the response was classified as inconsistent. This classification procedure was used for each of the 26 courses from the CGIS.

Frequencies of consistent and inconsistent responses were computed for each of the 26 courses. The analysis for each course was done using student information pooled across schools. The analysis was also done within each school; school statistics were then summarized across schools. A school had to have a minimum of 15 students who reported having taken or not taken a particular course to be included in a summary. Performing the analysis across and within schools was intended to determine whether accuracy of students' self-reports was related to the particular high schools they attended.

Frequencies were also calculated for selected student subgroups across all schools. The subgroups included race (black, white), gender, and P-ACT+ Composite score range (1-14, 15-16, 17-18, 19-32). The categories of P-ACT+ Composite score were selected to correspond to the quartiles of the distribution of Composite scores for the sample.

Course Grades

Students' self-reported grades and transcript grades were first converted to numeric equivalents (A=4, B=3, C=2, D=1, F=0). Then, for each course, the grades reported by a student were compared to the grades reported on the transcript. To be included in this comparison, the student had to have reported a grade for a particular course, and his or her transcript had to show a corresponding course grade. Sawyer, et al. (1988) used an additional requirement: Students must also have indicated that they had taken the course to be included in the comparison. Further analysis of these data showed that this requirement yielded virtually identical numbers of students with relevant course information.

The last (i.e., second semester) grade recorded for a course on the transcript was selected for comparison to the self-reported grade. The last recorded transcript grade was selected because it was the last grade received before completing the CGIS. For those transcripts where a primary second semester grade was not recorded, the primary first semester grade was selected. If both the second and first semester grades for the primary course were missing, the second semester alternate course grade was selected. If the second semester alternate course grade was also missing, the first semester alternate course grade was selected.

Alternative hierarchies of grade selection could have been chosen. The hierarchy used by Sawyer, et al. (1988), consisted of second semester primary, second semester alternate, first semester primary, and first semester alternate course grade. This hierarchy was also examined; it yielded results virtually identical to those used here.

The following statistics used by Sawyer, et al. were calculated for each course:

1. Proportion of student records for which the difference between the self-reported grade and the transcript grade (denoted by D) equaled zero,
2. Proportion of records for which the absolute value of D (|D|) was less than or equal to 1,
3. Average value of the difference between the self-reported grade and the transcript grade (average value of D),
4. Average value of the absolute value of the difference between the self-reported grade and the transcript grade (average value of |D|), and

5. Strength of the relationship between self-reported grades and transcript grades (represented by a correlation coefficient).

These statistics were computed using data pooled across schools. The statistics were also computed within each school and then summarized across schools. At least 15 students with self-reported and transcript grades were required for a school to be included in the summary for each course. Due to small sample sizes, subgroup analyses by race, gender, and P-ACT+ Composite score could not be performed within schools. These analyses were, however, performed using data pooled across schools.

Relationships Between Reporting Accuracy and High School Characteristics

To investigate whether the accuracy of students' self-reports of courses taken and grades earned was related to characteristics of the high schools they attended, correlations were computed between several of the accuracy statistics and high school characteristics (e.g., number of students enrolled, annual per-pupil expenditure, percentage of students in the district below federal poverty level, percentage of black and white students in the district). The school, rather than the student, served as the unit of analysis in this case. For example, there were 39 schools with sufficient numbers of students to allow an average value of D to be calculated for English I. When the average values of D were correlated with school characteristics, the resulting correlation coefficient was based on 39 observations.

Results

Accuracy of Course Reporting

Proportions of consistent responses between students' self-reports of courses taken and the information obtained from transcripts are reported for each course in Table 1. Four courses had 100% consistent responses between students' and transcript reports of courses taken: Other Mathematics, Astronomy, German, and Other Language. Large proportions of consistent responses were also found for French (.99), U.S. History (.98), and English I (.97). The smallest proportions of consistent responses occurred for General Mathematics (.83) and Algebra I (.87). The typical (median) proportion of consistent responses across courses was .96, as shown at the bottom of Table 1.

The results of the within-school analysis, indicating the extent to which students at different schools accurately reported courses they had taken, are reported in Table 2. This analysis showed some variation

in accuracy across schools for some courses, as illustrated by the minimum and maximum values for such courses as Algebra II (.60 and 1.00, respectively), General Mathematics (.65 and 1.00), and Algebra I (.68 and 1.00). However, greater variability occurred between schools with proportions of consistent responses below the median proportion than between schools with proportions of consistent responses above the median proportion. For example, of the eight schools with sufficient numbers of students in General Mathematics courses, four had median proportions of consistent responses that were greater than or equal to .65 and less than .90, and four had median proportions that were greater than .90 and less than or equal to 1.00. Therefore, half of the schools for any particular course had proportions of consistent responses greater than .90 (which is the smallest median proportion reported in Table 2).

One high school was associated with the minimum proportion of consistent responses for six of the courses (Algebra II, World History/Civilization, Physical/Earth Science, Biology I, Spanish, and Other Language). Had this particular high school not been included in the analysis, the ranges of proportions of consistent responses for three of these six courses would have changed considerably: The minimum and maximum proportions for Algebra II would have both been 1.00, and the proportions for Spanish and Physical/Earth Science would have ranged from .96 to 1.00 (instead of from .90 to 1.00), and from .76 to 1.00 (instead of from .71 to 1.00), respectively. The range of proportion of consistent responses for the other three courses would have been nearly identical, with each minimum proportion changing by no more than .02.

Subgroup analyses. Proportions of consistent responses across all students and schools by race, gender, and P-ACT+ Composite score range are reported in Table 3. Males and females tended to report courses taken with comparable accuracy (median proportion of consistent responses across courses = .96 vs. .97, respectively). The accuracy of self-reported course work of black and white students was also comparable (median = .96 vs. .97). Other racial/ethnic groups were not examined due to small sample sizes.

Most of the courses had only small differences in the proportion of consistent responses between gender or race subgroups. The largest race or gender difference identified for any particular course

occurred for Physical/Earth Science (females gave consistent reports 87% of the time, whereas the rate for males was 92%).

The proportions of consistent responses were comparable across the P-ACT+ Composite score ranges. Students with Composite scores of less than 16 gave consistent reports of courses taken 96% of the time. Students with Composite scores between 17-18 were similar in the accuracy of their reporting, as were those with Composite scores of 19 or more (median proportion of consistent responses = .98 and .97, respectively).

Accuracy of Grade Reporting

The results for the accuracy of self-reported grades for each of the 26 courses are reported in Table 4. Courses with fewer than 15 students (e.g., Computer Mathematics) were excluded from the analysis. The correlations between self-reported and transcript grades for all students ranged from .58 to .85, as shown in the last column of Table 4. The courses with the largest correlations between self-reported and transcript grades were Spanish (.85), Geography (.84), French (.83), and Civics/American Government (.82). The courses with the smallest correlations included Art (.58), General Mathematics (.66), Music (.67), and Chemistry (.70).

The proportion of students for which the difference between the self-reported grade and the transcript grade equaled zero (D) ranged from .51 (General Mathematics) to .83 (Music). The average value of the difference between the self-reported grade and the transcript grade ranged from .02 (Chemistry) to .50 (General Mathematics). The proportion of students for which the absolute value of the difference between grades (|D|) was less than or equal to one ranged from .89 (General Mathematics) to .98 (Chemistry). The average absolute value of the difference between grades ranged from .22 (Music) to .63 (General Mathematics). General Mathematics yielded, for four of the five grade accuracy statistics, the least amount of correspondence of any course between students' reports of grades earned and the grades reported on their transcripts.

The within-school analysis yielded results for some courses that varied considerably from one high school to another. The results are reported in Table 5. The largest difference (D) between the minimum

and maximum proportions of students reporting accurate grades occurred for General Science I; 35% of the students at one school reported accurate grades, as compared to 100% of the students at another school (the median for this course was 63%). On average, the difference between the minimum and maximum proportions of accurate reports for all courses was about .44. One high school had the minimum proportion of accurate reports for four of the courses (English II, Biology I, Art, and Music). Had this particular high school been removed from the analysis, the minimum proportions of accurate responses for these four courses would have changed from .45, .39, .41, and .57, respectively, to .53, .50, .50, and .70, thereby decreasing the variation in grade reporting accuracy.

Variation across high schools was evident for the other indices of reporting accuracy. For example, the minimum and maximum correlations between self-reported and transcript grades for all courses differed, on average, by about .44. One high school had the minimum correlation for six of the courses (English II, Algebra II, World History/Civilization, Civics/American Government, Biology I, and Spanish). This particular high school was not the same high school that had the minimum proportion of accurate reports for four courses. Had this high school been excluded from the analysis, the minimum correlations for five of the six courses would have increased significantly. The minimum correlation would have increased from .40 to .80 for English II, from .39 to .60 for World History/Civilization, from .56 to .65 for Civics/American Government, from .48 to .54 for Biology I, and from .67 to .76 for Spanish. The variation in reporting accuracy across schools would consequently have been diminished. Nevertheless, the variation across schools suggests that the particular high school a student attends is somewhat related to the accuracy of the grades s/he reports on the CGIS.

Subgroup analyses. Grade accuracy statistics for subgroups of students across all schools are reported in Tables 6, 7, and 8. A comparison of results for females and males is provided in Table 6. The strength of the relationship between self-reported and transcript grades was almost identical for females and males (median $r = .77$ vs. .78). However, the two subgroups differed somewhat with respect to the average value of the difference between self-reported and transcript grades (.26 vs. .31).

All grade accuracy statistics differed for black and white students (see Table 7), with white students, in general, reporting grades more accurately than black students. For example, the proportion of students for which the difference between the self-reported grade and the transcript grade equaled zero was .52 for blacks and .65 for whites. The average value of the difference between the self-reported grade and the transcript grade was .49 for blacks and .23 for whites, and the average absolute value of the difference between grades was .59 for blacks and .39 for whites.

Differences in the accuracy of students' reports of grades by range of P-ACT+ Composite score are provided in Table 8. The largest median correlation across courses between self-reported and transcript grades for any of the P-ACT+ Composite score ranges was found for the Composite score range of 15-16 ($r = .76$). The smallest median correlation occurred for the 14 or less range ($r = .66$). The results for Composite score ranges of 17-18 and 19-32 were similar ($r = .71$ and .73, respectively).

As the P-ACT+ Composite score increased, the median average value of the difference between grades decreased. A similar relationship was found between the median average of the absolute value of the difference between grades and the Composite score. Consistent with this finding, a direct relationship was observed between the median proportion of differences between grades equaling zero and the P-ACT+ Composite score: The median proportion of differences between grades equaling zero increased as the P-ACT+ Composite score increased. These findings suggest that students with higher P-ACT+ Composite scores report their course grades more accurately than those with lower scores. In addition, students with lower Composite scores appear to exaggerate their course grades.

Reporting Accuracy/High School Characteristic Relationships

For four courses, there were sufficient numbers of high schools (10 or more) for correlations between accuracy statistics and high school characteristics to be computed. Correlations between these variables were computed for English I, Algebra I, Physical/Earth Science, and Biology I.

For English I, a statistically significant ($p < .05$) correlation of -.50 was found between the percentage of students in the district living below the federal poverty level, and the correlation between students' reports of grades and transcript grades. For Biology I, a correlation of .68 ($p < .05$) was found between the average

value of D and the percentage of students below the poverty level. These results suggest that less accurate reporting of grades in English I and Biology I is associated with schools located in districts that have larger percentages of students below the poverty level.

A correlation of -.82 ($p < .05$) was found between the average value of D for Physical/Earth Science and the percentage of white students in the district. A correlation of .75 ($p < .05$) was found between the average value of D for this course and the percentage of black students in the district. These findings imply that more accurate reporting of Physical/Earth Science grades is associated with schools located in districts in which there are larger percentages of white students.

Discussion

Students generally gave accurate reports of the courses they had taken, as indicated by the large overall median proportions of consistent responses. The median proportion of consistent responses found in this study (.96) was similar to that found in some previous research. Valiga (1986), for example, reported that students' responses and transcript information matched for 95% of the students who had taken the ACT Assessment in the states of Illinois and Kentucky. The accuracy of reporting found in this study was somewhat higher than that found by Sawyer, et al. (1988). In the latter study, the typical proportion of consistent responses was .87 across 30 courses for a nationally representative sample of students who had completed the ACT Assessment.

It is not clear why the proportion of consistent responses found in this study differed from that found in the Sawyer, et al. study. One interpretation relates to the time elapsed between course completion and the reporting of course information. In this study, the time between course completion and the reporting of courses taken was somewhat brief; sophomores reported one and one-half years of course work. In the study by Sawyer, et al., ACT-tested students reported three to four years of course work. Because of the longer period of time between course completion and the reporting of courses taken, students may not have remembered specific courses as clearly, or may not have been able to locate records of their course work as easily.

One should also consider that the Sawyer, et al. study used a nationally representative sample stratified on the basis of school affiliation (e.g., public, Catholic), SES, and 1984-85 ACT Assessment test volume. A systematic random sample was selected from each stratum. In comparison, the sample for this study was selected from a single state and less stringent selection procedures were used. For this reason, caution must be used when comparing the results from the two studies.

The median correlation between self-reported and transcript grades (.79) was nearly identical to the median correlation of .80 reported by Sawyer, et al. (1988). Other grade accuracy statistics, such as the average of the absolute value of the difference between self-reported and transcript grades, showed some discrepancies between the two studies. The median average absolute value of the difference in grades in this study was higher than that reported by Sawyer, et al. (.42 vs. .33), and the median average value of the difference in grades also tended to be higher (.28 vs. .23). These discrepancies, while not large, suggest that there may be some differences in accuracy of self-reports of course grades for the P-ACT+ and ACT Assessment. The earlier qualification concerning the differences between the samples for the two studies applies here as well.

The typical average difference between self-reported and transcript grades (.28) indicated, as in previous research, a tendency for students to inflate their reports of grades earned. Further, when students overstated (or understated) their grades, it was unusual for them to do so by more than one letter grade, as indicated by the median proportion of students for which the absolute value of the difference between self-reported and transcript grades was less than or equal to one (.95).

Students with high P-ACT+ Composite scores tended to report grades more accurately, as compared to students with low P-ACT+ Composite scores. There were only very small differences in the accuracy of grade reporting between females and males. These findings are similar to those reported by Sawyer, et al. (1988). In contrast, somewhat larger differences were found for black and white students; compared with black students, white students typically reported grades more accurately. Sawyer, et al. found smaller differences in reporting accuracy between black and white students; typically, the differences were less than 5%. The within-course sample sizes for black and white students in the present study differed considerably,

however. Sample sizes for blacks ranged from 22 to 190, depending on the course; the sample sizes for whites ranged from 37 to 1275. Small sample sizes for some courses could influence the accuracy of these results.

The results of the within-school analysis showed some variability in accuracy among schools. This suggests that there may be some association between the school that a student attends and the accuracy with which s/he reports grades in certain courses. Indeed, decreased reporting accuracy appears to be associated with schools located in districts where larger percentages of students live below the federal poverty level, and where there are larger percentages of black students. (For those schools participating in this study, there was a statistically significant correlation ($r = .26$, $p < .05$) between the percentage of students in the district below the poverty level and the percentage of black students in the district.)

The ambiguity present in some of the course names might have contributed to the observed variation in reporting accuracy among schools. The course title "Civics/American Government", for example, may have different meanings across schools. The variation in reporting accuracy among schools should be verified through further investigation, due to the small numbers of schools included in the analyses for some courses.

Implications

Course Work Taken

The relatively large median proportion of consistent responses (.96) suggests that students' self-reports of course work taken are sufficiently accurate to be used in program evaluation. For example, a reference group of students who indicated that they had completed their general education requirements for graduation could be identified. Students' reports of course work taken could also be used for predicting student performance. Self-reported information on the number of mathematics courses taken could, for example, be used to estimate P-ACT+ performance. It would, of course, be necessary to validate the accuracy of such estimates by comparing them to estimates based on transcript information, particularly if the results were used to make important decisions that could affect individual students.

Course Grades

Students' reports of course grades varied from the transcript grades to the extent that transcripts should probably be consulted when making crucial decisions about individuals. However, self-reported grades appear to be of sufficient accuracy for research concerning the educational development of groups of students.

School officials and legislators who use outcomes assessment results to make important decisions (e.g., performance funding) should remember that grades (and course work taken) may be reported more accurately by students at some schools relative to other schools. This situation could be monitored, to some extent, by routinely investigating the accuracy with which students report grades and course work.

Since this study was completed, the P-ACT+ CGIS has been revised to collect information on course work taken and planned, but not course grades. The abbreviated CGIS was added to the P-ACT+ system for all participating schools in the fall of 1991.

References

Cohen, M. (1988). Designing state assessment systems. Phi Delta Kappan, 69, p. 583-588.

Davidsen, C. M. (1963). Survey of reliability of student self-reported high school grades. Iowa City, Iowa: The American College Testing Program.

Firestone, W. A. (1990). Continuity and incrementalism after all: State responses to the excellence movement. In J. Murphy (Ed.), The educational reform movement of the 1980s (pp. 143-166). Berkely, California: McCutchan Publishing Corporation.

National Commission on Excellence in Education. (1983). A nation at risk: The imperative of educational reform. Washington, D. C.: U.S. Government Printing Office.

National Science Board Commission on Precollege Education in Mathematics, Science, and Technology. (1983). Educating Americans for the 21st century: A plan of action for improving mathematics, science, and technology education for all American elementary and secondary students so that their achievement is the best in the world by 1995. Washington, D. C.: National Science Foundation.

Richards, J. M., Jr., Holland, J. L., & Lutz, S. W. (1966). The prediction of student accomplishment in college (ACT Research Report No. 13). Iowa City, Iowa: The American College Testing Program.

Sawyer, R., Laing, J., & Houston, M. (1988). Accuracy of self-reported high school courses and grades of college-bound students (ACT Research Report No. 88-1). Iowa City, Iowa: The American College Testing Program.

Valiga, M. J. (1986). The accuracy of self-reported high school course and grade information (ACT Research Report No. 87-1). Iowa City, Iowa: The American College Testing Program.

Appendix A

Course Grade Information Section

A NAME (Use a Soft No. 2 Lead Pencil)

Last Name | First Name | MI

B DATE OF BIRTH

Month | Day | Year

C SOCIAL SECURITY NUMBER

HIGH SCHOOL COURSE/GRADE INFORMATION

22

ACT

P.O. Box 168
IOWA CITY, IOWA 52243

DIRECTIONS: Use a No. 2 lead pencil to complete this form. DO NOT use ink or ball-point pen.

1. Begin by printing your name in the boxes at the top of Block A, one letter per box. Then, blacken the appropriate circle in the column below each box. Blacken the blank circle below any boxes left empty. Complete Blocks B and C in the same manner.

2. In Block D, below the column titled COURSES YOU HAVE TAKEN OR ARE NOW TAKING, blacken the circle for **each** high school course that you have taken or are now taking for at least one full term (semester, quarter, etc.). Also include **high school level** courses taken before 9th grade; leave the other circles blank. In the column titled FINAL GRADE EARNED, blacken the circle for the **final grade** you received for each course you have taken. Change number grades to letter grades (4 A, 3 B, 2 C, 1 D, 0 F). Leave the final grade circles blank for a course if you have not yet completed a full term or if a final grade was not awarded (pass, fail, incomplete, etc.). After you finish Block D, sign and date the Student Statement in Block E.

D

	COURSES (See description on back.)	COURSES YOU HAVE TAKEN OR ARE NOW TAKING	FINAL GRADE EARNED
ENG	English I	○	A B C D F
	English II	○	A B C D F
	Other English beyond English II	○	A B C D F
MATHEMATICS	General Mathematics	○	A B C D F
	Algebra I	○	A B C D F
	Algebra II	○	A B C D F
	Geometry	○	A B C D F
	Computer Mathematics	○	A B C D F
	Other Math beyond Algebra II	○	A B C D F
SOCIAL STUDIES	World History, Civilization	○	A B C D F
	U.S. History	○	A B C D F
	Civics, American Government	○	A B C D F
	Geography	○	A B C D F
NATURAL SCIENCES	General Science	○	A B C D F
	General Science II	○	A B C D F
	Astronomy	○	A B C D F
	Physical Earth Science	○	A B C D F
	Biology I	○	A B C D F
	Chemistry	○	A B C D F
FOREIGN LANG	Spanish	○	A B C D F
	French	○	A B C D F
	German	○	A B C D F
	Other Language	○	A B C D F
ARTS	Art	○	A B C D F
	Music	○	A B C D F
	Drama, Theatre	○	A B C D F

E STUDENT STATEMENT

I hereby certify that the courses and grade information I have provided on this form are complete and correct to the best of my knowledge.

Student's Signature _____ Date _____

23

HIGH SCHOOL COURSES AND DESCRIPTIONS

Listed below are course titles and descriptions. These examples may help you to decide which oval is the best one to blacken for courses you have taken

Course Title	Possible Alternate Course Titles/Course Descriptions
ENGLISH: Do not include speech (public speaking or debate)	
English I	• First-year English including grammar, reading comprehension, etc. • 9th grade Composition or Literature
English II	• Second year English including grammar, reading comprehension, etc. • 10th grade Composition or Literature
Other English beyond English II	• Honors English, Third year English, etc.
MATHEMATICS	
General Mathematics	• General Mathematics • Applied Mathematics I & II • Pre-Algebra • Business Math
Algebra I (First year Algebra - not Pre-Algebra or General Math)	• Beginning Algebra • Elementary Algebra • Introductory Algebra
Algebra II (Second year Algebra)	• Advanced Algebra • Secondary Algebra
Geometry	• Plane Geometry • Solid Geometry • Euclidean Geometry
Computer Math	• Computer Programming • Computer Technology
Other Math beyond Algebra II (Do not use courses listed above)	• Second year Geometry • Analytic Geometry • Analysis • Functions • Probability & Statistics • Pre-Calculus • Trigonometry • Calculus
SOCIAL STUDIES	
World History Civilization	• World History Western Civilization
U.S. History	• History of the United States
Civics American Government	• Political Science • U.S. Government • American Politics
Geography	• U.S. Geography • World Geography

Course Title	Possible Alternate Course Titles/Course Descriptions
NATURAL SCIENCES: Do not include science interest group projects or science fair projects	
General Science I	• Introduction to Science • 9th Grade Science
General Science II (Usually 10th Grade)	• Second year Science
Astronomy	• Space Science • Earth & Space Science
Physical Earth Science	• Geology • Ecology
Biology I (Typically includes lab work)	• Introduction to Biology
Chemistry	• Introduction to Chemistry
FOREIGN LANGUAGES: Including introductory, first, and second year courses of reading in foreign languages. Do not include English or computer languages.	
Spanish	
French	
German	
Other Language	• Latin • Japanese • Russian • Chinese • Any other language not listed as a course
ARTS: Report only courses; do not include extracurricular activities.	
Art (painting, etc.)	• Sculpture • Drawing • Art History
Music (vocal or instrumental)	• Chorus or Other Vocal Courses • Band, Orchestra, Ensemble • Music History • Music Appreciation • Music Theory
Drama, Theater	• Acting or Other Performance • History of the Theater

Appendix B

Transcript Coding Form

Semester System

Course Grade Verification Study
Coding Form #1

SEQNO [ ]

HSCODE [ ]

Name [ ]

SSN [ ]

Transcript date MO [ ] YR [ ]

GPA [.]

Transcript class level [ ]

Class Rank ________ of ________

Course	Have taken	Primary course Class (1-4)	SEM1	SEM2	Final	Comments	Alternative course Class (1-4)	SEM1	SEM2	Final	Comments
1. English 9th grade											
2. English 10th grade											
3. Other English											
4. General math											
5. 1st-year Alg.											
6. 2nd-year Alg.											
7. Geometry											
8. Computer math											
9. Other math											
10. W. History/Civil.											
11. U.S. History											
12. Civics/Am. Gov.											
13. Geography											
14. General Science I											
15. General Science II											
16. Astronomy											
17. Ph./Earth Sci.											
18. Biology I											
19. Chemistry											
20. Spanish											
21. French											
22. German											
23. Other Language											
24. Art (painting)											
25. Music											
26. Drama/Theater											

Comments:

Tables

TABLE 1

Proportion of Consistent Responses Between Student Reports and Transcripts of Courses Taken

Course	Proportion of consistent responses
1. English I	.97
2. English II	.90
3. Other English	.96
4. General Mathematics	.83
5. Algebra I	.87
6. Algebra II	.96
7. Geometry	.96
8. Computer Mathematics	.96
9. Other mathematics	1.00
10. World History/Civilization	.96
11. U.S. History	.98
12. Civics/American Government	.97
13. Geography	.96
14. General Science I	.88
15. General Science II	.97
16. Astronomy	1.00
17. Physical/Earth Science	.89
18. Biology I	.93
19. Chemistry	.98
20. Spanish	.97
21. French	.99
22. German	1.00
23. Other language	1.00
24. Art	.96
25. Music	.95
26. Drama/Theater	.99
Median (across courses)	.96

TABLE 2

Proportion of Consistent Responses Between Student Reports and Transcripts of Courses Taken (Within School)

Course	Number of schools	Proportion within school		
		Min.	Med.	Max.
1. English I	39	.69	.99	1.00
2. English II	4	.93	.98	1.00
3. Other English	--	--	--	--
4. General Mathematics	8	.65	.90	1.00
5. Algebra I	20	.68	.91	1.00
6. Algebra II	4	.60	1.00	1.00
7. Geometry	5	.94	.98	1.00
8. Computer Mathematics	--	--	--	--
9. Other mathematics	--	--	--	--
10. World History/Civilization	5	.87	.97	1.00
11. U.S. History	--	--	--	--
12. Civics/American Government	5	.84	.99	1.00
13. Geography	6	.75	.97	1.00
14. General Science I	8	.90	.98	1.00
15. General Science II	--	--	--	--
16. Astronomy	--	--	--	--
17. Physical/Earth Science	14	.71	.92	1.00
18. Biology I	11	.84	.97	1.00
19. Chemistry	--	--	--	--
20. Spanish	8	.90	.98	1.00
21. French	2	.99	--	1.00
22. German	--	--	--	--
23. Other language	3	.97	.99	1.00
24. Art	4	.95	.97	.98
25. Music	9	.89	.96	1.00
26. Drama/Theater	--	--	--	--
Median (across courses)			.98	

TABLE 3

Proportion of Consistent Responses Between Student Reports and Transcripts of Courses Taken, by Gender, Race, and P-ACT+ Composite Score

Course	Gender		Race		P-ACT+ Composite score range			
	Female (n=986)	Male (n=730)	Black (n=200)	White (n=1350)	1-14 (n=387)	15-16 (n=361)	17-18 (n=405)	19-32 (n=564)
1. English I	.98	.96	.96	.98	.92	.97	.99	.99
2. English II	.90	.89	.90	.91	.84	.90	.92	.92
3. Other English	.95	.96	.96	.96	.97	.98	.95	.93
4. General Mathematics	.84	.82	.83	.83	.82	.78	.85	.84
5. Algebra I	.86	.89	.84	.88	.89	.93	.92	.79
6. Algebra II	.96	.97	.98	.96	.99	.97	.96	.95
7. Geometry	.97	.96	.98	.96	.98	.96	.97	.95
8. Computer Mathematics	.97	.96	.96	.96	.94	.95	.97	.98
9. Other mathematics	1.00	.99	.99	1.00	.98	1.00	1.00	1.00
10. World History/Civilization	.95	96	.96	.96	.95	.94	.97	.96
11. U.S. History	.98	.97	.95	.98	.97	.96	.99	.98
12. Civics/American Government	.97	.96	.98	.96	.97	.96	.98	.95
13. Geography	.95	.96	.93	.97	.92	.96	.98	.97
14. General Science I	.87	.89	.90	.88	.85	.86	.90	.90
15. General Science II	.97	.96	.96	.97	.93	.95	.98	.99
16. Astronomy	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
17. Physical/Earth Science	.87	.92	.90	.88	.90	.86	.91	.89
18. Biology I	.94	.92	.92	.94	.89	.92	.93	.96
19. Chemistry	.98	.98	1.00	.98	1.00	.99	.98	.97

(continued on next page)

TABLE 3 (continued)

Course	Gender		Race		P-ACT+ Composite score range			
	Female (n=966)	Male (n=730)	Black (n=200)	White (n=1350)	1-14 (n=387)	15-16 (n=361)	17-18 (n=405)	19-32 (n=564)
20. Spanish	.97	.97	.97	.98	.97	.97	.98	.98
21. French	.99	.99	.99	.99	.99	1.00	.99	.99
22. German	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
23. Other language	1.00	1.00	1.00	1.00	.99	1.00	1.00	.99
24. Art	.96	.95	.91	.97	.92	.95	.98	.97
25. Music	.94	.97	.90	.96	.93	.96	.96	.96
26. Drama/Theater	.99	.99	1.00	1.00	.99	.99	.99	1.00
Median (across courses)	.97	.96	.96	.97	.96	.96	.98	.97

TABLE 4

Summary Concordance Between Student Reports and Transcript Grades

	Course	Number of students	Proportion D=0	Proportion |D| ≤ 1	Average D	Average |D|	Correlation
1.	English I	1605	.64	.96	.26	.41	.77
2.	English II	279	.59	.93	.27	.49	.80
3.	Other English	2	--	--	--	--	--
4.	General Mathematics	440	.51	.89	.50	.63	.66
5.	Algebra I	924	.64	.95	.28	.42	.79
6.	Algebra II	136	.57	.94	.13	.49	.73
7.	Geometry	240	.65	.97	.23	.38	.77
8.	Computer Mathematics	0	--	--	--	--	--
9.	Other mathematics	0	--	--	--	--	--
10.	World History/Civilization	256	.65	.95	.32	.41	.78
11.	U.S. History	5	--	--	--	--	--
12.	Civics/American Government	252	.66	.96	.33	.38	.82
13.	Geography	237	.70	.96	.22	.34	.84
14.	General Science I	385	.56	.91	.38	.56	.71
15.	General Science II	1	--	--	--	--	--
16.	Astronomy	0	--	--	--	--	--
17.	Physical/Earth Science	706	.65	.95	.28	.40	.80
18.	Biology I	491	.67	.96	.23	.39	.79
19.	Chemistry	50	.60	.98	.02	.42	.70
20.	Spanish	358	.57	.95	.41	.49	.85

(continued on next page)

TABLE 4 (continued)

	Course	Number of students	Proportion D=0	Proportion |D| ≤ 1	Average D	Average |D|	Correlation
21.	French	156	.64	.94	.34	.44	.83
22.	German	4	--	--	--	--	--
23.	Other language	93	.60	.95	.43	.47	.80
24.	Art	200	.64	.92	.32	.49	.58
25.	Music	353	.83	.96	.18	.22	.67
26.	Drama/Theater	10	--	--	--	--	--
	Median (across courses)		.64	.95	.28	.42	.79

Note: Entries in the first column represent the number of students with both a self-reported grade and a transcript grade. D denotes the difference between the self-reported grade and the transcript grade. |D| denotes the absolute value of D.

TABLE 5

Summary Concordance Between Student Reports and Transcript Grades (Within School)

Course	Number of schools	Proportion D=0			Proportion |D|≤1			Average D			Average |D|			Correlation		
		Min.	Med.	Max.	Min.	Med.	Max.	Min.	Med.	Max.	Min.	Med.	Max.	Min.	Med.	Max.
1. English I	39	.44	.63	.93	.81	.96	1.00	−.12	.27	.63	.07	.43	.75	.33	.76	.96
2. English II	4	.45	.59	.68	.85	.93	.97	.15	.36	.75	.38	.46	.75	.40	.82	.88
3. Other English	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4. General Mathematics	8	.39	.61	.89	.83	.98	1.00	.00	.23	.61	.11	.45	.69	.33	.73	.94
5. Algebra I	20	.39	.64	.96	.84	.97	1.00	−.20	.25	.66	.04	.43	.72	.12	.76	.98
6. Algebra II	4	.30	.69	.80	.91	.94	.96	.05	.09	.19	.25	.36	.79	.59	.69	.80
7. Geometry	5	.53	.62	.89	.93	.96	1.00	.00	.22	.29	.11	.39	.53	.64	.75	.92
8. Computer Mathematics	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
9. Other mathematics	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
10. World History/Civilization	5	.53	.61	.89	.89	.95	1.00	.05	.34	.44	.11	.48	.54	.39	.61	.91
11. U.S.History	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
12. Civics/American Government	5	.50	.67	1.00	84	.97	1.00	.00	.24	.63	.00	.36	.63	.56	.71	1.00
13. Geography	6	.50	.85	1.00	.89	1.00	1.00	.00	.06	.45	.00	.15	.55	.76	.87	1.00
14. General Science I	8	.35	.63	1.00	.67	.93	1.00	.00	.29	.66	.00	.53	.78	.64	.75	1.00
15. General Science II	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
16. Astronomy	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
17. Physical/Earth Science	14	.30	.66	.88	.80	.97	1.00	.03	.28	.74	.13	.38	.83	.52	.75	.96
18. Biology I	11	.39	.61	.94	.75	.98	1.00	.00	.15	.88	.06	.40	.88	.48	.77	.96
19. Chemistry	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

(continued on next page)

TABLE 5 (continued)

Course	Number of schools	Proportion D=0			Proportion |D|≤1			Average D			Average |D|			Correlation		
		Min.	Med.	Max.	Min.	Med.	Max.	Min.	Med.	Max.	Min.	Med.	Max.	Min.	Med.	Max.
20. Spanish	8	.43	.57	.78	.94	.96	1.00	.17	.33	.55	.28	.45	.62	.67	.86	.95
21. French	2	.53	--	.90	.94	--	1.00	.10	--	.41	.10	--	.53	.86	--	.96
22. German	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
23. Other language	3	.44	.60	.65	.88	.90	1.00	.46	.56	.60	.46	.56	.60	.62	.81	.90
24. Art	4	.41	.63	.77	.79	.91	1.00	.03	.16	.97	.23	.47	.97	.18	.51	.62
25. Music	9	.57	.87	1.00	.89	.97	1.00	-.04	.17	.52	.00	.17	.52	.00	.68	.86
26. Drama/Theater	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Median (across courses)			.63			.96			.25			.43			.75	

Note: D denotes the difference between the self-reported grade and the transcript grade. |D| denotes the absolute value of D.

TABLE 6

Summary Concordance Between Student Records and Transcript Grades, by Gender

Course	Female						Male					
	Number of students	Proportion D=0	Proportion |D|≤1	Average D	Average |D|	Correlation	Number of students	Proportion D=0	Proportion |D|≤1	Average D	Average |D|	Correlation
1. English I	928	.64	.96	.26	.41	.78	676	.64	.95	.27	.42	.77
2. English II	167	.63	.95	.19	.44	.77	112	.54	.88	.40	.58	.82
3. Other English	1	—	—	—	—	—	1	—	—	—	—	—
4. General Mathematics	226	.54	.91	.46	.58	.69	214	.49	.86	.54	.69	.63
5. Algebra I	536	.65	.94	.27	.42	.76	387	.64	.96	.30	.42	.83
6. Algebra II	82	.60	.95	.16	.45	.76	54	.54	.93	.09	.54	.70
7. Geometry	159	.62	.96	.25	.42	.77	80	.71	.98	.19	.31	.76
8. Computer Mathematics	0	—	—	—	—	—	0	—	—	—	—	—
9. Other mathematics	0	—	—	—	—	—	0	—	—	—	—	—
10. W. History/Civil.	144	.63	.94	.33	.44	.76	112	.66	.96	.31	.38	.82
11. U.S. History	4	—	—	—	—	—	1	—	—	—	—	—
12. Civics/Amer. Gov.	139	.71	.99	.24	.30	.84	112	.59	.93	.43	.48	.80
13. Geography	138	.75	.98	.20	.27	.88	99	.62	.94	.24	.44	.80
14. General Science I	198	.60	.92	.36	.49	.75	187	.51	.89	.40	.63	.69
15. General Science II	0	—	—	—	—	—	1	—	—	—	—	—
16. Astronomy	0	—	—	—	—	—	0	—	—	—	—	—
17. Physical/Earth Sci.	392	.67	.96	.26	.36	.81	313	.62	.94	.31	.44	.79
18. Biology I	303	.70	.96	.19	.35	.80	188	.62	.95	.29	.45	.67
19. Chemistry	30	.60	1.00	−.07	.40	.73	20	.60	.95	.15	.45	.78
20. Spanish	208	.58	.96	.44	.48	.83	149	.57	.94	.37	.49	.86
21. French	100	.69	.97	.29	.35	.86	56	.54	.88	.43	.61	.75
22. German	1	—	—	—	—	—	3	—	—	—	—	—

(continued on next page)

TABLE 6 (continued)

Course	Female						Male					
	Number of students	Proportion D=0	Proportion |D|≤1	Average D	Average |D|	Correlation	Number of students	Proportion D=0	Proportion |D|≤1	Average D	Average |D|	Correlation
23. Other language	59	.61	.95	.44	.47	.78	34	.59	.94	.41	.47	.83
24. Art	92	.63	.94	.24	.46	.47	108	.64	.90	.38	.49	.64
25. Music	243	.83	.97	.17	.20	.68	110	.83	.96	.19	.25	.67
26. Drama/Theater	8	—	—	—	—	—	2	—	—	—	—	—
Median (across courses)		.63	.96	.26	.42	.77		.61	.94	.31	.46	.75

Note: Entries in columns 1 and 7 represent the number of students with both a self-reported grade and a transcript grade. D denotes the difference between the self-reported grade and the transcript grade. |D| denotes the absolute value of D.

TABLE 7

Summary Concordance Between Student Records and Transcript Grades, by Race

Course	Black						White					
	Number of students	Proportion D=0	Proportion |D|≤1	Average D	Average |D|	Correlation	Number of students	Proportion D=0	Proportion |D|≤1	Average D	Average |D|	Correlation
1. English I	190	.55	.92	.39	.54	.64	1,276	.65	.97	.23	.39	.79
2. English II	36	33	.92	.53	.75	.75	203	.65	.94	.22	.43	.80
3. Other English	0	—	—	—	—	—	1	—	—	—	—	—
4. General Mathematics	75	.48	.85	.49	.71	.53	313	.53	.90	.49	.59	.67
5. Algebra I	90	.64	.94	.30	.41	.84	756	.65	.96	.27	.40	.79
6. Algebra II	4	—	—	—	—	—	115	.63	.95	.10	.43	.73
7. Geometry	27	.63	1.00	.30	.37	.79	196	.66	.97	.19	.37	.76
8. Computer Mathematics	0	—	—	—	—	—	0	—	—	—	—	—
9. Other mathematics	0	—	—	—	—	—	0	—	—	—	—	—
10. W. History/Civil.	38	.79	1.00	.16	.21	.94	203	.63	.95	.33	.43	.74
11. U.S. History	0	—	—	—	—	—	2	—	—	—	—	—
12. Civics/Amer. Gov.	27	.48	.93	.52	.59	.76	201	.68	.97	.29	.35	.83
13. Geography	23	.70	.91	.39	.39	.85	186	.72	.96	.19	.32	.82
14. General Science I	32	.47	.78	.75	.88	.61	305	.58	.93	.34	.50	.76
15. General Science II	0	—	—	—	—	—	1	—	—	—	—	—
16. Astronomy	0	—	—	—	—	—	0	—	—	—	—	—
17. Physical/Earth Sci.	124	.52	.89	.49	.60	.68	528	.68	.97	.23	.35	.81
18. Biology I	37	.46	.89	.57	.68	.71	404	.68	.96	.20	.37	.79
19. Chemistry	1	—	—	—	—	—	37	.65	.97	.00	.38	.72
20. Spanish	30	.53	.90	.57	.57	.76	297	.57	.96	.41	.49	.85
21. French	22	.36	.86	.68	.77	.83	122	.68	.96	.25	.37	.84
22. German	0	—	—	—	—	—	4	—	—	—	—	—

(continued on next page)

TABLE 7 (continued)

Course	Black						White					
	Number of students	Proportion D=0	Proportion |D|≤1	Average D	Average |D|	Correlation	Number of students	Proportion D=0	Proportion |D|≤1	Average D	Average |D|	Correlation
23. Other language	1	–	–	–	–	–	87	.80	.94	.44	.48	.80
24. Art	26	.39	.81	.85	.92	.52	158	.89	.98	.20	.37	.59
25. Music	52	.58	.90	.48	.52	.62	269	.88	.98	.11	.14	.69
26. Drama/Theater	0	–	–	–	–	–	10	–	–	–	–	–
Median (across courses)		.52	.90	.49	.59	.75		.65	.96	.23	.39	.79

Note: Entries in columns 1 and 7 represent the number of students with both a self-reported grade and a transcript grade. D denotes the difference between the self-reported grade and the transcript grade. |D| denotes the absolute value of D.

TABLE 8

Summary Concordance Between Student Records and Transcript Grades, by P-ACT+ Composite Score Range

Course	1-14						15-16						17-18						19-32					
	Number of students	Proportion D=0	Proportion |D|≤1	Average D	Average |D|	Correlation	Number of students	Proportion D=0	Proportion |D|≤1	Average D	Average |D|	Correlation	Number of students	Proportion D=0	Proportion |D|≤1	Average D	Average |D|	Correlation	Number of students	Proportion D=0	Proportion |D|≤1	Average D	Average |D|	Correlation
1. English I	344	56	.91	.30	.55	.65	329	60	93	35	48	.67	387	60	97	.26	.43	.72	545	.74	.99	.17	.27	.77
2. English II	73	.34	.84	.44	.85	.65	55	46	.91	.49	.84	.78	48	.63	94	.25	.46	.71	103	.83	.99	.05	.18	.78
3. Other English	0	--	--	--	--	--	1	--	--	--	--	--	0	--	--	--	--	--	1	--	--	--	--	--
4. General Mathematics	225	46	.88	.51	.72	.60	119	50	.89	60	.65	.68	88	.63	94	.37	.43	68	28	.68	.96	.20	.36	.74
5. Algebra I	95	.51	.88	.37	.66	.57	184	.62	94	.38	.47	.76	275	.63	.95	.29	.43	.77	370	.70	98	.21	.32	.82
6. Algebra II	6	--	--	--	--	--	15	.33	.87	.53	.80	.55	29	.52	.97	.17	.52	.59	84	.84	.95	.00	.40	.70
7. Geometry	8	--	--	--	--	--	27	.44	.96	.44	.59	.65	42	.52	.93	.31	.55	.70	183	.72	.98	.15	.29	.72
8. Computer Mathematics	0	--	--	--	--	--	0	--	--	--	--	--	0	--	--	--	--	--	0	--	--	--	--	--
9. Other mathematics	0	--	--	--	--	--	0	--	--	--	--	--	0	--	--	--	--	--	0	--	--	--	--	--
10. W. History/Civil.	35	.57	.89	.46	.57	.81	50	.58	.90	.46	.52	.78	67	.64	.99	.25	.37	.61	104	.70	.97	.24	.34	.66
11. U.S. History	2	--	--	--	--	--	0	--	--	--	--	--	0	--	--	--	--	--	3	--	--	--	--	--
12. Civics/Amer. Gov.	48	.42	.92	.54	.67	.77	49	.69	.94	.33	.37	.77	60	.62	.98	.30	.40	.78	95	.78	.98	.24	.24	.84
13. Geography	52	.56	.94	.35	.50	.84	41	.68	.95	.27	.37	.78	56	.66	.96	.14	.36	.65	88	.80	.98	.16	.23	.70
14. General Science I	160	.46	.84	.47	.73	.59	97	.52	.93	.43	.58	.70	72	.60	.94	.33	.47	.70	56	.84	1.00	.09	.16	.66
15. General Science II	0	--	--	--	--	--	0	--	--	--	--	--	1	--	--	--	--	--	0	--	--	--	--	--
16. Astronomy	0	--	--	--	--	--	0	--	--	--	--	--	0	--	--	--	--	--	0	--	--	--	--	--
17. Physical/Earth Sci.	125	.49	.91	.48	.61	.72	134	.63	.96	.29	.41	.77	193	.65	.96	.25	.39	.75	254	.74	.97	.21	.29	.73
18. Biology I	75	.47	.88	.53	.69	.67	87	.56	.92	.31	.52	.75	104	.74	.98	.14	.28	.83	225	.74	.98	.13	.29	.73
19. Chemistry	3	--	--	--	--	--	11	--	--	--	--	--	14	--	--	--	--	--	22	.68	.96	-.09	.36	.58
20. Spanish	35	.31	.80	.86	.91	.74	68	.53	.96	.50	.53	.85	98	.51	.95	.40	.54	.81	157	.69	.99	.29	.34	.83
21. French	20	.35	.80	.85	.95	.61	27	.78	.93	.10	.30	.66	39	.64	.97	.28	.38	.87	70	.86	.96	.24	.39	.75
22. German	0	--	--	--	--	--	0	--	--	--	--	--	1	--	--	--	--	--	3	--	--	--	--	--
23. Other language	4	--	--	--	--	--	10	--	--	--	--	--	15	.80	1.00	.07	.20	.93	64	.56	.94	.46	.52	.78
24. Art	39	.39	.80	.62	.87	.57	48	.63	.90	.40	.56	.41	39	.67	.92	.41	.41	.63	74	.78	.99	.05	.27	.56
25. Music	52	.82	.90	.42	.50	.68	66	.79	.94	.21	.30	.55	90	.61	.97	.22	.22	.70	145	.94	.99	.04	.07	.66

(continued on next page)

TABLE 8 (continued)

Course	1-14						15-16						17-18						19-32					
	Number of students	Proportion D=0	Proportion |D|≤1	Average D	Average |D|	Correlation	Number of students	Proportion D=0	Proportion |D|≤1	Average D	Average |D|	Correlation	Number of students	Proportion D=0	Proportion |D|≤1	Average D	Average |D|	Correlation	Number of students	Proportion D=0	Proportion |D|≤1	Average D	Average |D|	Correlation
28. Drama/Theater	1	--	--	--	--	--	2	--	--	--	--	--	1	--	--	--	--	--	6	--	--	--	--	--
Median (across courses)		.67	.87	.47	.68	.68		.59	.93	.39	.52	.75		.63	.98	.26	.41	.71		.73	.98	.17	.29	.73

Note: Entries in columns 1, 7, 13, and 19 represent the number of students with both a self-reported grade and a transcript grade. D denotes the difference between the self-reported grade and the transcript grade. |D| denotes the absolute value of D.