

DOCUMENT RESUME

ED 214 945

TM 820 028

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 TITLE Validation of the New Jersey College Basic Skills Placement Test.
 INSTITUTION Educational Testing Service, Princeton, N.J.
 SPONS AGENCY New Jersey State Dept. of Higher Education, Trenton.
 PUB DATE Sep 80
 NOTE 60p.
 EDRS PRICE MF01/PC03 Plus Postage.
 DESCRIPTORS *Achievement Tests; *College Freshmen; Higher Education; Mathematics Achievement; Multiple Choice Tests; Questionnaires; Reading Achievement; Screening Tests; *Student Placement; Teacher Attitudes; *Test Validity; Writing Skills
 IDENTIFIERS New Jersey; *New Jersey College Basic Skills Placement Test

ABSTRACT

This report presents the major available evidence to date on the validity of the New Jersey College Basic Skills Placement Test (NJCBSPT). The findings are as follows: (1) results of two content-validity questionnaires show New Jersey college instructors to be in general agreement that the test content is appropriate and important to assess; (2) test scores from the NJCBSPT are highly correlated with scores from the Comparative Guidance and Placement (CGP) tests; (3) the Sentence Structure and Essay tests correlate slightly more highly with the Test of Standard Written English (TSWE) than with the Scholastic Aptitude Test-Verbal; (4) groups of students with different educational backgrounds show large differences in average NJCBSPT scores; (5) the percentage of students whom instructors thought were placed correctly ranged from 68 percent to 98 percent; (6) the percentage of students who thought they were placed correctly ranged from 60 percent to 98 percent; (7) median predictive validity coefficients were found to be similar to those obtained for other test batteries such as the CGP tests; and (8) median concurrent validity coefficients were found to be as follows: reading comprehension, .27; sentence structure, .33; logical relationships, .36; computation, .48; elementary algebra, .57.
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ED214945

VALIDATION OF THE
NEW JERSEY COLLEGE BASIC SKILLS PLACEMENT TEST

Lawrence W. Hecht
Educational Testing Service
September, 1980

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This report is based on research conducted by Educational Testing Service on behalf of the College Board and supported by the New Jersey Department of Higher Education.

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Acknowledgments

Many thanks go to several individuals who played important roles in the research reported here. Frank Winter, ETS Program Director for the NJCBSPT, offered invaluable assistance during all phases of the project. Nancy Feryok was primarily responsible for organizing the coding of data, which was ably carried out by Robin Gervasio, Karen Zeis, and Margarete Zicha. The secretarial staff, Georgiana Velivis, Nellie Burd, and Magdalene Johnson, exercised patience and care in the preparation of the numerous tables included in the report.

Finally, special thanks go to the administrators, faculty, and students at College A and College B. The anonymous treatment of these institutions in the report should not be interpreted as undervaluing their cooperation. Without their generous assistance, many crucial aspects of this research would not have been possible.

I. Test Validation

The purpose of this report is to summarize the major evidence to date of the validity of the New Jersey College Basic Skills Placement Test (NJCBSPT). The conventional definition of test validity is the extent to which a test measures what it is intended to measure. Upon analyzing this definition, it quickly becomes clear that validity is not solely a characteristic of a test, but is a function of the use to which scores from the test are put. Cronbach (1971, p. 447) states the problem well:

The phrase validation of a test is a source of much misunderstanding. One validates, not a test, but an interpretation of data arising from a specified procedure. A single instrument is used in many different ways--Smith's reading test may be used to screen applicants for professional training, to plan remedial instruction in reading, to measure the effectiveness of an instructional program, etc. Since each application is based on a different interpretation, the evidence that justifies one application may have little relevance to the next. Because every interpretation has its own degree of validity, one can never reach the simple conclusion that a particular test "is valid." (italics in original)

Unlike the assessment of various internal qualities of a test, such as reliability, difficulty level, and speededness, the determination of a test's validity is a multi-faceted process, requiring the collection of data from sources external to the test itself. The validation of the NJCBSPT is no exception to this. Given the variety of evidence for the validity of the NJCBSPT, it is very useful to sort the evidence into meaningful categories. The framework employed in this report consists of three categories of validity: content validity, concurrent/construct

validity, and placement validity. Each of these terms will be defined in the section of the report that deals with it. It is important to note that this classification of validity is somewhat arbitrary, as is any other such system, and that a particular kind of evidence may be justifiably placed in more than one category. The classification system used in this report is merely a convenient way of organizing an otherwise unwieldy mass of evidence.

II. Description of the Test

All freshmen entering New Jersey public colleges are required to take the NJCBSPT, which was first introduced in 1978. In addition to New Jersey public colleges, a number of private New Jersey colleges have chosen to participate in the testing program. The test is administered by the participating colleges on a schedule determined by each college. Students are tested only after they have been admitted to the college; the NJCBSPT is not intended as an admissions test.

The test consists of five separately-timed multiple-choice sections and a 20-minute free response essay question. The five multiple-choice sections are as follows:

<u>Test Section</u>	<u>Number of Items</u>	<u>Timing</u>
Reading Comprehension	40	30 minutes
Sentence Structure	35	30 minutes
Logical Relationships	50	30 minutes
Computation	30	35 minutes
Elementary Algebra	30	35 minutes

Each of these sections is made up of four-choice items and each is scored as number right (i.e., no "correction for guessing").

Responses to the 20-minute essay question are scored at a central Essay Reading by two independent readers on a 4-point scale.* Scores of zero are reserved for papers that either present an insufficient sample

*Beginning with the third year of testing in 1980, a 6-point essay-scoring scale was adopted. All analyses in this report, however, are based on data collected prior to the adoption of the 6-point scale.

of writing or are off-topic. If the two readers' scores differ by more than one point (i.e., 1 vs. 3, 1 vs. 4, or 2 vs. 4), the paper receives a third reading and one of the two discrepant scores is adjusted accordingly. The reported essay score is the simple sum of the two readers' scores, and ranges from 2 to 8.

A scaled score is reported for each of the five multiple-choice sections of the test. The scores were scaled in 1978 to a mean of 65 and a standard deviation of 10, a scale chosen by the New Jersey Basic Skills Council. These scaled scores are equated across the three active forms of the test developed to date.

In addition to the five scaled scores reported for the multiple-choice test sections, two composite scores, reported on the same scale, are also derived. The Composition score is a weighted average of the scores from Sentence Structure, Logical Relationships, and the Essay such that each of these receives approximately equal weight in the composite. The Total English score is a similarly weighted average of the same three scores plus the score from Reading Comprehension.

III. Content Validity

One of the intended purposes of the NJCBSPT is to assess the reading, writing, and mathematics skills of entering freshmen in order to assist colleges in the placement of students in courses appropriate to their levels of skills development. The first step toward achieving this purpose is to determine those reading, writing, and mathematics skills that should be assessed by such a test. If the skills assessed by the test are in fact appropriate to the purpose of the test, then the test is said to have content validity. It is clear from this brief introduction that content validity is characterized by two features. First, it is the most fundamental form of validity, and second, it is a judgmental, not statistical, matter. In this report, the content validity of the NJCBSPT is assessed in two ways: (1) by a review of the test construction process, and (2) by an analysis of the independent judgments of college instructors not involved in the test construction process.

The Test Construction Process*

"Rather than test the validity of measures... after they are constructed, one should ensure validity by the plan and procedures of construction." (Nunnally, 1967, p. 80). In this section, the method of developing the NJCBSPT will be reviewed.

The test construction process starts with the formation of two test development committees, one for reading and writing, and one for mathematics. These committees comprise faculty members representing the variety of New Jersey colleges: two-year community colleges,

* This section on the test development process is based on contributions by Gertrude C. Conlan.

four-year state colleges, Rutgers University, the New Jersey Institute of Technology, and some New Jersey private colleges.

The first responsibility of the development committees is to determine explicit and detailed specifications of what knowledges and skills are to be measured. Once these content specifications have been produced, the committees' work turns to writing, reviewing, and revising test items that measure the specified skills. Questions that pass initial committee review are put into pretests, or trial tests, administered to students in classes in New Jersey colleges. The performance of the students on these new questions is analyzed: Did students who score well on the test tend to choose the right answer? Did many students omit the questions? Is the item too difficult or too easy for the students?

The development committees review the data for individual questions collected from the trial testing. If low-scoring students perform better on a question than do high-scoring students or if many students omit the question, it is reviewed again to determine its flaw. Most likely, such a question is ambiguous or can be interpreted so that more than one answer is correct. Such questions are discarded, as are questions that prove to be so easy that almost all students answer them correctly or that prove to be too difficult for the specified purposes of the test.

Then, after the questions that meet both content and statistical specifications have been selected for each section, the committee reviews the questions again, this time not only to discover problems with individual questions but also to judge whether the relationship

among questions in the test as a whole is satisfactory. . . In the test, for example, question 14 should not test exactly the same thing as question 15, and question 17 should not provide a clue to the answer to question 5. Some questions may be replaced before this process is completed.

Only after the committee has approved each question for accuracy and for relevance to the purpose of the test is the test development process completed. Assisted by the statistical data for each question and by the experience of its members as teachers, the committee has judged that each of the sections for which it is responsible contains fair questions dealing with appropriate problems and is as close as possible in content and in difficulty level to comparable sections in previous test forms.

Independent Evaluation of the Content of the NJCBSPT

The preceding section of this report describes the process of developing the NJCBSPT. A crucial element in that process is the setting of content specifications for the test. As a further check on the appropriateness of the content of the NJCBSPT, the judgments of college instructors uninvolved with the test development process were collected. This was accomplished by means of two questionnaires, one concerning the reading and writing sections, and the other with the mathematics sections. Copies of these questionnaires and the accompanying cover letter are included as Appendix A of this report.

The colleges selected for administering the content-validity questionnaires were chosen to span the variety of New Jersey public colleges. The six participating institutions included two 2-year colleges (Essex County College and Brookdale Community College), two 4-year colleges (Stockton State College and Kean College), Rutgers University (Livingston College) and the New Jersey Institute of Technology. Table 1 contains the number of instructors responding to the questionnaire from each of the six participating colleges.

Insert Table 1 about here.

A total of 73 instructors responded to the reading-writing questionnaire; 49 responded to the mathematics questionnaire.

The design of the questionnaires was guided by Bridgeman's (1980) study of the validity of the Descriptive Test of Mathematics Skills. The questionnaires asked teachers of beginning college freshmen to make judgments about the series of skills that are intended to be measured by the NJCBSPT. Instructors rated each skill as either very important, moderately important, or unimportant. The item numbers for each skill and a test booklet were provided to each instructor. In addition to making judgments about various skills tested in the multiple-choice sections of the test, the reading and writing instructors were also asked the question, "How important is obtaining a writing sample in assessing the writing ability of beginning college students?" The results from the questionnaires are tallied in Table 2 (reading-writing) and Table 3 (mathematics). The tables report the number of

Insert Tables 2 and 3 about here.

instructors rating each skill as very important (VI), moderately important (MI) and unimportant (U). Also given as a more succinct summary for each skill are the mean and the standard deviation of the instructor responses, with VI = 3, MI = 2, and U = 1.

Responses to the reading-writing questionnaire show "understanding main ideas in reading passages" to be judged the most important skill of those listed - all 73 respondents rated it as "very important." The item eliciting the second greatest amount of favorable sentiment is that for the written essay. Only three of the instructors rated the obtaining of a writing sample in assessing the writing ability of beginning college students as less than "very important." There appears to be a strong belief among instructors of freshman reading and writing courses that an actual writing sample is essential to the assessment of writing ability.

The reading-writing skill that generated the greatest negative response was "making analogies in sentences." On the average, however, the college instructors rated this skill as more than moderately important (mean of 2.3 on 3-point scale).

Responses of mathematics instructors to the second questionnaire showed generally less skill-to-skill variability than the reading-writing instructor responses. Only one skill, "solution of linear inequalities," elicited less than a majority of "very important" ratings. Each of the mean ratings for the eleven mathematics skills was considerably above the "moderately important" category (means range from 2.4 to 2.9).

In general, the results of the content-validity questionnaires tend to support the appropriateness of the content of the NJCBSPT for its intended purpose of assessing the reading, writing, and mathematics abilities of beginning college students. Each of the 22 skills received average ratings higher than "moderately important," with most skills receiving average ratings much closer to "very important." These findings tend to confirm the judgments of the test development committees who determined the content specifications for the NJCBSPT.

IV. Concurrent/Construct Validity

Concurrent validation is a process of comparing test scores with another variable (the "criterion") considered to provide a measure of the ability or trait in question. In its purest form, concurrent validation is employed when a purportedly "improved" measurement procedure (e.g., shorter, less expensive, more convenient) is being proposed as a substitute for an already established procedure. The validity of the new measure is demonstrated by a high correlation with the established measure, thus justifying its substitution for the established measure. The more typical application of concurrent validation, however, consists simply of demonstrating correlations between two tests that are intended to measure the same or a similar trait. It is this interpretation of concurrent validity that is drawn upon in the section below regarding the relationship between NJCBSPT scores and scores derived from the Comparative Guidance and Placement (CGP) Program.

Construct validation is an analysis of the meaning of test scores in terms of psychological concepts or "constructs" (Cronbach and Meehl, 1955). A test is considered as having a degree of construct validity if scores from the test behave in ways consistent with some theoretical network of unobservable traits. The kinds of evidence that can illuminate the construct validity of a test are particularly diverse. Three methods of construct validation will be drawn upon in this report: (1) the demonstration of convergence, or the extent to which two tests measure the same thing, (2) the demonstration of divergence,

or the extent to which two tests measure different things, and (3) the analysis of group differences. The first of these, the demonstration of convergence between tests, is very similar to the notion of concurrent validity. In fact, some theorists (e.g. Cronbach, 1970) subsume concurrent validity as a special case of construct validity. It is because of these overlapping classifications that concurrent and construct validity are considered jointly in this report.

Relationship with CGP Scores

One source of data bearing on the concurrent (or "convergent") validity of the NJCBSPT is the set of scores for 822 students at Mercer County Community College who were tested in 1978 with the NJCBSPT as well as with the tests in the College Board's Comparative Guidance and Placement (CGP) Program. The CGP tests are designed to serve purposes similar to those served by the NJCBSPT. The correlations between analogous tests in the two batteries were as follows: NJ Reading Comprehension and CGP Reading, $r = +.75$; NJ Sentence Structure and CGP Sentences, $r = +.73$; NJ Computation and CGP Computation, $r = +.67$; NJ Elementary Algebra and CGP Elementary Algebra, $r = +.72$. The reason for the somewhat lower correlation for the Computation test may be that, even though the two tests are identically named, the NJCBSPT test contains a substantial number of arithmetic reasoning problems while the CGP test does not. The relatively high correlations between the two batteries of tests suggest that they are measuring similar constructs. The CGP tests have been validated extensively through the CGP Program's own validity study service; the

correlations between the already validated CGP tests and the tests of the NJCBSPT suggest that the latter may possess as much validity for certain purposes as the CGP tests.

Relationships with SAT and TSWE Scores

In the fall of 1978 a study was undertaken to determine the statistical feasibility of using Scholastic Aptitude Test (SAT) and Test of Standard Written English (TSWE) scores in exempting students from taking the NJCBSPT (Hecht, 1978). As part of that study, 20,427 students were identified by a computer match who had taken the NJCBSPT, the SAT, and the TSWE. The correlations among the test scores were as follows:

<u>NJCBSPT Score</u>	<u>SAT/TSWE Score</u>	<u>Correlation</u>
Reading Comprehension	SAT-V	.74
Reading Comprehension	TSWE	.68
Sentence Structure	SAT-V	.66
Sentence Structure	TSWE	.75
Logical Relationships	SAT-V	.77
Logical Relationships	TSWE	.74
Essay	SAT-V	.50
Essay	TSWE	.55
Computation	SAT-M	.72
Elementary Algebra	SAT-M	.76

Several things can be noted about these correlations. First, the correlations involving the NJCBSPT Essay score are lower than the other figures. This may be due to the relatively low reliability of the essay score, compared to the multiple-choice scores, or to the

possibility that the Essay measures something different from the multiple-choice sections. A second aspect of these correlations to note is their magnitude. They ranged from .66 to .77, excluding those for the Essay. This suggests a rather substantial element in common within pairs of tests.

A third, and perhaps most informative, aspect of these data are the correlations of the two tests in the NJCBSPT intended primarily as measures of writing ability (Sentence Structure and Essay) with the TSWE, which is also intended as a measure of writing ability. Both the Sentence Structure test and the Essay correlate more highly with the TSWE than with the SAT-V, despite the lower reliability of the TSWE (compared to SAT-V). These differences suggest in a very tentative way that these two NJCBSPT tests are in fact measuring a unique writing ability trait, in addition of course to a large general verbal ability factor.

Relationships with Student Background

A common method of construct validation is to demonstrate that groups of persons who would be expected to differ on some trait actually show mean differences on a test that supposedly measures the trait in question. As part of the NJCBSPT, students are asked to respond to a series of background questions. For some of these questions, one would expect groups of students responding in different ways to also exhibit mean test-score differences. The background questions analyzed as part of this study concerned (1) number of years of high school English, (2) number of years of high school

mathematics, (3) type of high school program (academic, career, or general), and (4) self-perception of writing ability. Data for these analyses came from approximately 44,000 students who took the NJCBSPT in 1979.

The results of these analyses are reported in Tables 4-7. Generally

Insert Tables 4-7 about here.

large mean differences were observed for groups that differed in responses to these background questions. In Tables 4 and 5 a direct relationship can be seen between years of high school study in English and mathematics and NJCBSPT scores. The results in Table 6 show that students from general and career high school programs exhibit very similar test-score patterns but differ greatly from students from academic programs. The findings in Table 7 indicate a substantial relationship between students' assessments of their writing ability and their actual reading-writing test scores. Of course this can be seen as a validation of students' self-assessment as well as a validation of the test scores.

It is important not to interpret these findings in a strictly causal way. The variability in these background factors may not be a cause of the variability in test scores, but rather the variability in both may be explained by some larger underlying variables, such as general academic ability and interests. For purposes of construct validation, it is necessary only to demonstrate a relationship between group background differences and group test-score differences.

A Final Note

It should be pointed out that the evidence presented in this section for the concurrent/construct validity of the NJCBSPT can not be considered definitive. Construct validity evidence is nearly always tentative -- it needs to be accumulated over time and from a variety of perspectives. Cronbach (1970, p. 142) reminds us that "construct validity is established through a long-continued interplay between observation, reasoning and imagination . . . The process of construct validation is the same as that by which scientific theories are developed." Considering that the construct validation of a test is a necessarily large undertaking, the evidence discussed in this section should be thought of as first steps in a long process.

V. Placement Validity

The NJCBSPT is designed to be useful as a placement instrument. Its major intended purpose is to assess the reading, writing, and mathematics skills of entering college students to assist in the placement of students in courses appropriate to their levels of skills development. Because the validity of any test is partially a function of how test scores are used, an adequate assessment of the validity of the NJCBSPT must include an evaluation of the test battery as a placement device. This section of the report discusses the evidence of placement validity for the NJCBSPT.

It is important at this point to distinguish between the effectiveness of a placement test (such as the NJCBSPT) and the effectiveness of a placement program. Although the validation of a placement test must take place in the context of a placement program, the test and the program are not identical. A carefully conceptualized and well managed placement program is necessary in order to adequately evaluate a placement test. Put another way, if a placement test is used in an inappropriately designed placement program, then there is no way to separate the effects of the program from the effects of the test, and the whole venture may be doomed from the start. Despite the interdependency of the placement test and the placement program, it is important to keep the distinction between them in mind. This report is concerned with the validation of the NJCBSPT, not with the evaluation of placement programs that utilize the test.

Because the proper evaluation of a placement test and the proper evaluation of a placement program are so interdependent, the New Jersey Basic Skills Council decided to have two studies conducted simultaneously. The first of these studies deals with the placement validity of the test. The results of that study are presented in this report. The second study deals with the evaluation of remedial placement programs that utilize scores from the NJCBSPT. This latter study is concerned with the reasonableness of the placement process itself and with the effectiveness of the program in promoting student growth, among other things. That study was conducted at the Bureau of Educational Research and Development in the Graduate School of Education of Rutgers University. Its findings are presented in a separate report (Smith and Schavio, 1980). Although the two studies are summarized in separate reports, they were conducted in a coordinated way. Both studies draw on the same data base (to be described below), and in fact many analyses of the data bear upon both the validation of the test and the evaluation of the placement programs. For example, the analysis of gain scores (post-test scores vs. pre-test scores) is relevant to both endeavors. A demonstration of test-score gains as a result of instruction would be evidence for program evaluation (i.e., instructional effectiveness) as well as for test validation (i.e., the test as "sensitive" to basic skills instruction).

Description of the Sample

Two New Jersey public colleges participated in the joint test-validation/program-evaluation study. College A is a two-year county community college; College B is a four-year state college. Data at

these colleges were collected in the fall academic term of 1979. All remedial and developmental courses in reading, writing, and mathematics were included in the study. The sample at College A consisted of 1,148 student records; that at College B consisted of 1,261 student records.* The sexual composition of each of the two college samples was 45 percent male and 55 percent female.

At both colleges, students were placed into remedial/developmental courses on the basis of NJCBSPT scores. The placement procedures, including cut scores, are specified in detail in the report of the placement program evaluation (Smith & Schavio, 1980). College A offers six major remedial/developmental courses, two in reading (Basic Reading Skills 1 and 2), two in writing (Basic Writing Skills 1 and 2), and two in mathematics (Basic Math Skills 1 and 2). College B offers five major remedial/developmental courses: Introduction to Reading and Study Skills (Reading 090), Developmental Reading and Study Skills (Reading 102); Introduction to Writing (English 090), Basic Writing (English 103), and Basic Mathematical Skills (Math 090).

Instructor Satisfaction

If students are placed into courses according to a reasonable placement policy and on the basis of scores from a valid placement test, then instructors should find students in their courses to be appropriately prepared to deal with the demands of the course. Under ideal circumstances, the resulting composition of students should be

* A student record refers to the data for a student in a course. Thus if a particular student is enrolled in two remedial/developmental courses, he or she accounts for two student records.

fairly homogeneous with none overprepared for the course and none underprepared. In order to obtain an indication of how satisfied instructors were with the abilities of the students placed into their courses, the instructors were asked via questionnaire to make the following judgment:

Please estimate the number and percentage of students who are underprepared, properly placed, or overprepared in your course.

	Number	Percent
Underprepared		
Placed Correctly		
Overprepared		

At College A instructors were asked to respond both toward the beginning of the term (less than two weeks into the term) and toward the end of the term (in the last two weeks). College B instructors were asked to respond only once, which was near the end of the term.

The results of this survey are reported in Table 8 for College A and in Table 9 for College B. The findings suggest that most instructors

Insert Tables 8 and 9 about here.

are generally satisfied that their students have been properly placed, although there are some distinct differences among courses. In both colleges, mathematics instructors tended to be less satisfied with the composition of their course sections than the reading and writing instructors. A striking aspect of these data is the number of

students judged to be underprepared for even the lowest course offered in a sequence. At College A, for example, instructors indicated the percent underprepared to be 14.7, 10.5, and 14.7 in the most basic courses offered in reading, writing, and mathematics, respectively (beginning-of-term data). Likewise, at College B, 18.4 percent of students in the first writing course and 20.4 percent in the first math course were thought to be underprepared. Perhaps these findings reflect more of a dissatisfaction with the caliber of students in general than a dissatisfaction with the way the students were placed into courses.

Student Satisfaction

A survey similar to that for course instructors was taken to assess students' satisfaction with their placement into courses. Besides being asked to evaluate the appropriateness of their own placement, students were also asked about the placement of the other students in the class. Specifically they were posed with these two questions:

1. In my opinion, I
 - A. should have been placed in a lower course.
 - B. belong in this course.
 - C. should have been placed in a higher course.

2. In my opinion, most of the other students in this class
 - A. should have been placed in a lower course.
 - B. belong in this course.
 - C. should have been placed in a higher course.

The results of these surveys are reported in Table 10 for College A and in Table 11 for College B. Several interesting patterns can be

Insert Tables 10 and 11 about here.

seen in these findings, especially when compared to the findings from the instructor survey. At College A the students appear to be generally more satisfied with their placement than are the course instructors. The percentage of students who thought they and their classmates were placed correctly ranges from 83.4 (for Basic Math 1) to 97.8 (for Basic Reading 1), while these "satisfaction rates" for instructors range from 67.8 (for Basic Math 1) to 94.8 (for Basic Writing 2). The trend appears to be just the reverse at College B, where students appear to be slightly less satisfied than their instructors with the outcomes of the placement process.

Another interesting trend at both colleges is that the percentage of students who think that they should have been placed in a higher course is invariably higher than the percentage of students who think that the other students in the class should have been placed in a higher course. (The only exception is students at College A in Basic Math 1 where the percentages are equal in the end-of-term survey.) In other words, there is a tendency among these students to feel that they themselves should be in a higher course but that their classmates belong where they are.

In summary, it must be pointed out that the findings reported here regarding instructor and student satisfaction certainly cannot

be taken as "hard" evidence of the placement validity of the NJCBSPT. They are included in this report simply as one more piece of evidence bearing on the overall evaluation of the NJCBSPT.

Relationships with Course Grades

One of the most common methods of validating educational tests is the examination of the relationship between test scores and course grades (or grade point averages). In fact, this is such a common technique that correlations between test scores and grades are called validity coefficients. The relationship between scores and grades can be predictive (i.e., the test scores are obtained at some point in time before instruction begins) or concurrent (i.e., the test is administered at approximately the same time that course grades are assigned). Both predictive and concurrent score-grade correlations were obtained as part of the validation of the NJCBSPT.

Although the use of grades as a criterion against which to evaluate a test has an undeniable appeal, this approach is fraught with methodological limitations. These limitations have the effect of diminishing or "attenuating" the correlations observed between test scores and grades.

One major problem is that such correlations are affected by the reliability of the course grades themselves. End-of-course grades are assigned by one instructor for performance in one course at one point in time. Furthermore, when different sections of a course taught by different instructors are combined for the analysis, any variability in the grading standards from instructor to instructor will tend to

attenuate the eventual correlations. In addition, the typical scale for assigning grades (usually a five-point scale such as A to F) is itself a rather rough index, and may therefore contribute to the unreliability of grades as a criterion measure. Although the reliability of grades has not been investigated in this study of the NJCBSPT, it is undoubtedly the case that this less than perfectly reliable criterion has tended to attenuate the reported correlations.

A second major factor that may attenuate validity coefficients is the placement process itself. A commonly acknowledged principle in correlational statistics is that the correlation between two variables will tend to be attenuated if the range of values for either of the variables is restricted. This is a particular concern for validity studies conducted on groups of students in particular courses. For the two colleges participating in this validity study, students were placed into courses largely on the basis of their NJCBSPT scores. A natural consequence of this process is that students in any particular course are likely to be more homogeneous than the student population at large. When a validity study is conducted on such relatively homogeneous groups of students, the obtained validity coefficients can be expected to be at least somewhat attenuated. Thus a validity coefficient of $+0.30$ between test scores and grades for a course would probably be higher if the correlation were based on a more heterogeneous group of students.

Besides these methodological limitations, there is another factor suggesting that moderate-to-high predictive correlations are not only unlikely to occur, but educationally undesirable. If instruction in a subject is highly effective, then variance in end-of-course achievement (e.g., course grades) would be expected to be very small, as nearly all students would have attained mastery of the subject. In fact, one educational theorist (Bloom, 1976) has pointed out the inadequacy of any educational system in which students' eventual achievement levels are predictable from their entering achievement levels.

With these limitations in mind, the reader is directed to Tables 12-19, which report the results of the test-score versus course-grade correlational analyses. The first four of these tables present the

Insert Tables 12-19 about here.

findings for the reading and writing tests of the NJCBSPT; the latter four provide similar information for the two mathematics portions of the NJCBSPT.

The findings for the reading and writing tests can be summarized as follows. For the Reading Comprehension test, the predictive correlations range from .23 to .35 across the seven reading-writing courses studied at the two colleges. The median of these correlations is .26. The concurrent correlations for Reading Comprehension range from .16 to .52, with a median of .27. For Sentence Structure the validity coefficients are generally higher. The predictive correlations range

from .16 to .50, with a median of .34; the concurrent correlations range from .28 to .50 with a median of .33. The pattern for Logical Relationships is similar; a median of .34 for the predictive correlations and .36 for the concurrent correlations. The median predictive correlation for the Essay is .21. The lower coefficient for the Essay may be due in part to that score's lower reliability, as compared to that of the multiple-choice scores.

The findings for the two mathematics tests show generally higher validity coefficients than for the reading-writing tests. An especially striking aspect of the results is the difference between the predictive and the concurrent correlations. While the two types of correlations were of similar magnitude for the reading and writing tests, in the case of the mathematics tests the concurrent correlations are consistently higher than the predictive correlations. For the two courses that had both predictive and concurrent correlations for the Computation test, these correlations are, respectively, .43 and .63 for Basic Math Skills 1 (College A) and .20 and .33 for Math 090 (College B). Similar differences were found for the Elementary Algebra test. The predictive and concurrent correlations are, respectively, .34 and .63 for Basic Math Skills 2 (College A), and .31 and .51 for Math 090 (College B).

In judging the magnitude of these validity coefficients, a convenient frame of reference may be the results of the great number of validity studies conducted on the tests of the College Board's Comparative Guidance and Placement (CGP) Program. This battery of tests is

designed to serve purposes very similar to those intended for the NJCBSPT. For 64 validity studies conducted on the CGP Reading and Sentences tests from 1975 to 1978, each of which was based on at least 100 students, the median predictive validity coefficients were .28 for Reading and .32 for Sentences. These coefficients are very similar to those observed for the NJCBSPT Reading Comprehension and Sentence Structure tests. Twenty-nine validity studies were conducted on the CGP mathematics tests from 1975 to 1978, also each based on at least 100 students. The median predictive validity coefficient from those studies was .43, likewise quite similar to the predictive validities reported here for the mathematics sections of the NJCBSPT.

VI. Summary

This report presents the major available evidence to date on the validity of the New Jersey College Basic Skills Placement Test. The findings can be summarized as follows:

1. Results of two content-validity questionnaires (one for the reading-writing tests and one for the mathematics tests) show New Jersey college instructors to be in general agreement that the test content is appropriate and important to assess. One skill was unanimously judged to be very important ("understanding main ideas in reading passages"), while others received less positive support (in particular, "making analogies in sentences" and "solution of linear inequalities"). The written Essay was judged to be very important to obtain by all but three of the seventy-two respondents.
2. Test scores from the NJCBSPT are highly correlated with scores from the Comparative Guidance and Placement (CGP) tests, a battery that is intended to serve purposes similar to those of the NJCBSPT.
3. The Sentence Structure and Essay tests, both intended primarily as measures of writing ability, correlate slightly more highly with the Test of Standard Written English (TSWE) than with the SAT-Verbal, suggesting that these tests tap a writing-ability component in addition to a large general verbal factor.

4. Groups of students with different educational backgrounds show large differences in average NJCBSPT scores. This is not a definitive finding in itself, but it does contribute to the overall picture of the validity of the tests.
5. Instructors at two intensively studied colleges were generally satisfied with results of student placement using the NJCBSPT. The percentage of students whom instructors thought were placed correctly ranged from 68 percent to 98 percent.
6. Students at the same two intensively studied colleges were also generally satisfied with the results of their (and their classmates') placement. The percentage of students who thought they were placed correctly ranged from 60 percent to 98 percent.
7. Median predictive validity coefficients (correlations between pretest scores and course grades) were found to be as follows: Reading Comprehension, .26; Sentence Structure, .34; Logical Relationships, .34; Essay, .21; Computation, .40; Elementary Algebra, .31. These coefficients are similar to those obtained for other test batteries such as the CGP tests.
8. Median concurrent validity coefficients (correlations between post-test scores and course grades) were found to be as follows: Reading Comprehension, .27; Sentence Structure, .33; Logical Relationships, .36; Computation, .48; Elementary Algebra, .57. No concurrent coefficients were available for the Essay, as that section of the test was not included in the post-testing.

Table 1
Number of Instructors Responding to
Content-Validity Questionnaires

Institution	Number Responding in Reading-Writing	Number Responding in Mathematics
Stockton State College	8	7
Kean College	16	10
Essex County College	15	9
Brookdale Community College	8	5
Rutgers-Livingston College	13	2
New Jersey Institute of Technology	13	16
Total	73	49

Table 2
 Summary of Instructors' Responses
 to Reading & Writing Content-Validity Questionnaire
 (N=73)

Skill Description	Frequency			Mean	S.D.
	VI	MI	U		
Reading Comprehension:					
1. Understanding main ideas in reading passages	73	0	0	3.0	0.0
2. Understanding direct statements in reading passages	61	11	0	2.8	0.4
3. Making inferences from reading passages	53	20	0	2.7	0.4
Sentence Structure:					
4. Using complete sentences	62	11	0	2.8	0.4
5. Using coordination and subordination appropriately	44	28	1	2.6	0.5
6. Placing modifiers appropriately	27	44	2	2.3	0.5
Logical Relationships:					
7. Categorizing ideas	53	17	3	2.7	0.5
8. Using appropriate connectives in sentences	41	31	1	2.5	0.5
9. Making analogies in sentences	25	43	5	2.3	0.6
10. Recognizing principles of organization and relationships among sentences	60	13	0	2.8	0.4
Essay	69	3	0	2.9	0.2

NOTES: VI = Very Important = 3
 MI = Moderately Important = 2
 U = Unimportant = 1

Not all instructors responded to each question.

Table 3
 Summary of Instructors' Responses
 to Mathematics Content-Validity Questionnaire

(N=49)

Skill Description	Frequency			Mean	S.D.
	VI	MI	U		
Computation:					
1. Operations with whole numbers	42	4	3	2.8	0.5
2. Operations with fractions	42	6	1	2.8	0.4
3. Operations with decimals	44	4	1	2.9	0.4
4. Solution of simple word problems (involving concepts of percent, proportion, and average value)	41	8	0	2.8	0.4
Elementary Algebra:					
1. Substitution in algebraic expressions	42	7	0	2.9	0.3
2. Translating English phrases into appropriate algebraic expressions	41	8	0	2.8	0.4
3. Operations involving algebraic expressions	42	7	0	2.9	0.3
4. Operations involving simple polynomials	43	6	0	2.9	0.3
5. Operations involving exponents and roots	34	14	0	2.7	0.5
6. Solution of linear equations	44	5	0	2.9	0.3
7. Solution of linear inequalities	22	25	2	2.4	0.6

NOTES: VI = Very Important = 3
 MI = Moderately Important = 2
 U = Unimportant = 1

Not all instructors responded to each question.

Table 4
 NJCBSPT Scores for Students With Various
 Self-Reported Years of High School English

Test Score		1 Year	2 Years	3 Years	4 Years
Reading Comprehension	Mean	51.4	56.8	59.8	65.8
	S.D.	14.2	14.4	13.6	10.8
	N	931	2,042	3,870	36,812
Sentence Structure	Mean	51.2	55.8	59.4	65.8
	S.D.	12.4	12.7	12.5	10.5
	N	931	2,042	3,869	36,811
Logical Relationships	Mean	51.4	56.8	59.6	65.8
	S.D.	13.3	13.8	13.2	10.6
	N	929	2,042	3,867	36,812
Essay	Mean	3.64	4.22	4.53	5.18
	S.D.	1.46	1.49	1.45	1.26
	N	921	2,033	3,862	36,887

Table 5
NJCBSPT Scores for Students With Various
Self-Reported Years of High School Mathematics

Test Score		1 Year	2 Years	3 Years	4 Years
Computation	Mean	55.4	59.0	64.3	68.0
	S.D.	10.2	10.3	10.3	10.3
	N	2,780	9,233	15,599	15,673
Elementary Algebra	Mean	54.4	56.8	64.1	71.0
	S.D.	6.5	7.4	10.2	11.8
	N	1,772	7,438	14,334	14,588

Table 6
 NJCBSPT Scores for Students from
 Academic, General, and Career High School Programs

Test Score		Academic H. S. Program	General H. S. Program	Career H. S. Program
Reading Comprehension	Mean	67.5	59.1	59.1
	S.D.	9.8	13.3	13.3
	N	29,991	8,958	7,051
Sentence Structure	Mean	67.6	58.5	59.2
	S.D.	9.6	12.0	12.2
	N	29,991	8,954	7,052
Logical Relationships	Mean	67.5	58.9	59.2
	S.D.	9.6	12.7	13.0
	N	29,989	8,952	7,052
Essay	Mean	5.34	4.46	4.62
	S.D.	1.21	1.39	1.44
	N	30,044	8,947	7,058
Computation	Mean	67.7	58.2	58.0
	S.D.	9.8	11.0	10.8
	N	29,896	8,907	7,035
Elementary Algebra	Mean	68.8	58.5	56.4
	S.D.	11.6	9.5	8.3
	N	28,882	6,788	4,833

Table 7
 NJCBSPT Scores for Students Who Reported
 Being Below Average, Average, and Above Average
 in Written Expression

Test Score	Below Average	Average	Above Average
Reading Comprehension	Mean 55.8	62.1	67.5
	S.D. 13.7	11.8	10.9
	N 2,375	20,620	23,460
Sentence Structure	Mean 55.0	62.0	67.5
	S.D. 12.1	11.0	10.6
	N 2,374	20,617	23,460
Logical Relationships	Mean 55.6	62.1	67.4
	S.D. 13.1	11.4	10.7
	N 2,374	20,615	23,458
Essay	Mean 3.92	4.76	5.40
	S.D. 1.40	1.25	1.30
	N 2,348	20,658	23,486

Table 8

Summary of Responses to Instructor Satisfaction
Questionnaire at College A

Course	Beginning or End of Semester *	Number of Students Represented	Percent Underprepared	Percent Placed Correctly	Percent Overprepared
28-03 Basic Reading Skills 1	Beginning (11)	204	14.7	80.9	4.4
	End (3)	41	14.6	73.2	12.2
28-04 Basic Reading Skills 2	Beginning (8)	152	7.2	83.6	9.2
	End (8)	137	8.0	89.8	2.2
28-07 Basic Writing Skills 1	Beginning (7)	133	10.5	88.7	0.8
	End (7)	122	8.2	89.3	2.5
28-08 Basic Writing Skills 2	Beginning (6)	115	3.5	94.8	1.7
	End (5)	100	21.0	74.0	5.0
52-01 Basic Math Skills 1	Beginning (21)	388	14.7	74.0	11.3
	End (8)	118	16.1	67.8	16.1
52-02 Basic Math Skills 2	Beginning (21)	354	23.7	68.9	7.3
	End (12)	228	22.8	70.6	6.6

* Number of responding sections is given in parentheses.

Table 9
Summary of Responses to Instructor Satisfaction
Questionnaire at College B

Course	Number of Sections Responding	Number of Students Represented	Percent Underprepared	Percent Placed Correctly	Percent Overprepared
Writing 090	2	38	18.4	71.1	10.5
Writing 103	21	383	9.1	88.3	2.6
Reading 090	2	43	0.0	97.7	2.3
Reading 102	12	213	9.4	76.5	14.1
Math 090	21	387	20.4	76.5	3.1

Table 10

Summary of Responses to Student
Satisfaction Questionnaire at College A

Course	Placement of Self or Others	Beginning or End of Semester	Number of Students Responding	Percent Lower Course	Percent This Course	Percent Higher Course
28-03 Basic Reading Skills 1	Self	Beginning	97	5.2	88.7	6.2
		End	51	0.0	92.2	7.8
	Others	Beginning	93	2.2	97.8	0.0
		End	49	6.1	91.8	2.0
28-04 Basic Reading Skills 2	Self	Beginning	121	0.0	87.6	12.4
		End	76	0.0	88.2	11.8
	Others	Beginning	119	0.0	93.3	6.7
		End	76	1.3	90.8	7.9
28-07 Basic Writing Skills 1	Self	Beginning	70	1.4	84.3	14.3
		End	105	1.9	87.6	10.5
	Others	Beginning	65	4.6	95.4	0.0
		End	99	4.0	91.9	4.0
28-08 Basic Writing Skills 2	Self	Beginning	130	0.8	87.7	11.5
		End	97	1.0	81.4	17.5
	Others	Beginning	124	0.0	93.5	6.5
		End	95	1.1	88.4	10.5
52-01 Basic Math Skills 1	Self	Beginning	139	2.2	84.2	13.7
		End	69	2.9	91.3	5.8
	Others	Beginning	134	3.0	93.3	3.7
		End	69	5.8	88.4	5.8
52-02 Basic Math Skills 2	Self	Beginning	169	5.3	83.4	11.2
		End	105	3.8	87.6	8.6
	Others	Beginning	162	3.7	90.1	6.2
		End	103	5.8	90.3	3.9

Table 11.
 Summary of Responses to Student
 Satisfaction Questionnaire at College B*

Course	Placement of Self or Others	Number of Students Responding	Percent Lower Course	Percent This Course	Percent Higher Course
Writing 090	Self	20	0.0	60.0	40.0
	Others	20	0.0	80.0	20.0
Writing 103	Self	253	0.0	81.0	19.0
	Others	251	1.6	87.6	10.8
Reading 090	Self	21	0.0	66.7	33.3
	Others	21	0.0	85.7	14.3
Reading 102	Self	179	1.1	64.2	34.6
	Others	175	1.1	74.3	24.6

* Responses from the sections of Math 090 were too fragmentary to include in the analyses.

Table 12
 Summary of Predictive Score-Grade Correlations for
 Reading and Writing Courses at College A

Course	Reading Comprehension Score	Sentence Structure Score	Logical Relationships Score	Essay Score	Course Grade	Multiple Correlation
28-03 Basic Reading Skills 1 (N = 106)	Mean 42.3 S.D. 6.8 r +.293	48.0 8.7 +.495	44.8 8.4 +.464	3.37 1.21 +.399	2.29 1.15 -	- - .565
28-04 Basic Reading Skills 2 (N = 102)	Mean 57.1 S.D. 6.0 r +.226	57.0 8.2 +.236	57.2 7.6 +.256	4.39 .91 +.097	2.90 .74 -	- - .325
28-07 Basic Writing Skills 1 (N = 128)	Mean 46.4 S.D. 10.3 r +.245	46.6 7.2 +.164	46.3 9.3 +.272	3.15 1.00 +.155	1.79 1.32 -	- - .283
28-08 Basic Writing Skills 2 (N = 113)	Mean 58.5 S.D. 9.1 r +.263	57.1 8.2 +.303	58.0 8.8 +.218	4.14 .94 +.214	2.35 1.14 -	- - .360

Table 13

Summary of Concurrent Score-Grade Correlations for
Reading and Writing Courses at College A

Course	Reading Comprehension Score	Sentence Structure Score	Logical Relationships Score	Course Grade	Multiple Correlation
28-03 Basic Reading Skills 1	Mean 47.4 S.D. 10.2 Number 95 r +.515	51.5 10.0 67 +.503	48.8 10.2 79 +.606	2.42 1.03 48 -	- - 48 .624
28-04 Basic Reading Skills 2	Mean 61.2 S.D. 6.7 Number 96 r +.210	59.6 9.3 47 +.282	61.4 7.2 93 +.275	3.04 .78 47 -	- - 47 .310
28-07 Basic Writing Skills 1	Mean 48.1 S.D. 10.0 Number 92 r +.160	51.1 9.3 104 +.286	47.3 9.6 83 +.260	2.54 .68 48 -	- - 48 .331
28-08 Basic Writing Skills 2	Mean 59.5 S.D. 8.6 Number 51 r +.270	58.4 10.2 58 +.294	60.3 8.6 47 +.362	2.68 .90 25 -	- - 25 .436

Table 14
 Summary of Predictive Score-Grade Correlations for
 Reading and Writing Courses at College B

Course *	Reading Comprehension Score	Sentence Structure Score	Logical Relationships Score	Essay Score	Course Grade	Multiple Correlation
Writing 090 (N = 18)	Mean 54.9 S.D. 14.5 r +.346	57.2 12.8 +.472	55.8 13.0 +.522	3.61 1.10 -.037	.58 .50 -	- - .709
Writing 103 (N = 423)	Mean 66.9 S.D. 9.1 r +.254	66.9 8.8 +.390	66.3 9.0 +.342	5.05 1.00 +.299	2.15* 1.06 -	- - .446
Reading 102 (N = 251)	Mean 61.1 S.D. 8.5 r +.285	62.2 8.3 +.343	60.8 8.5 +.409	5.04 1.08 +.386	2.56 1.15 -	- - .482

* Reading 090 is not included because no students received an unsatisfactory grade (U) in the course.

Table 15
 Summary of Concurrent Score-Grade Correlations for
 Reading and Writing Courses at College B

Course *	Reading Comprehension Score	Sentence Structure Score	Logical Relationships Score	Course Grade	Multiple Correlation
Writing 090 (N = 23)	Mean 57.0 S.D. 12.6 r +.451	59.7 9.1 +.338	54.3 14.6 +.376	.61 .50 -	- - .451
Writing 103 (N = 438)	Mean 68.7 S.D. 8.5 r +.244	68.7 8.2 +.327	68.1 8.5 +.308	2.18 1.03 -	- - .348
Reading 102 (N = 274)	Mean 65.6 S.D. 8.1 r +.411	66.4 7.7 +.427	64.3 8.4 +.481	2.64 1.09 -	- - .526

* Reading 090 is not included because no students received an unsatisfactory grade (U) in the course.

Table 16
 Summary of Predictive Score-Grade Correlations for
 Mathematics Courses at College A

Course	Computation Score	Elementary Algebra Score	Course Grade	Multiple Correlation
52-01 Basic Math Skills 1 (N = 90)	Mean 52.2	54.1	2.01	-
	S.D. 7.5	4.3	1.54	-
	r +.434	+.126	-	.435
52-02 Basic Math Skills 2 (N = 105)	Mean 62.2	55.8	2.29	-
	S.D. 8.5	5.3	1.59	-
	r +.399	+.339	-	.466

Table 17
 Summary of Concurrent Score-Grade Correlations for
 Mathematics Courses at College A*

Course	Computation Score	Elementary Algebra Score	Course Grade
52-01 Basic Math Skills 1 (N = 78)	Mean 63.3	-	2.53
	S.D. 8.7	-	1.34
	r +.629	-	-
52-02 Basic Math Skills 2 (N = 99)	Mean -	66.5	2.70
	S.D. -	7.2	1.44
	r -	+.626	-

*The Computation test was administered as a post-test to only students in Basic Math Skills 1; Elementary Algebra was administered as a post-test to only students in Basic Math Skills 2.

Table 18

Summary of Predictive Score-Grade Correlations for
Mathematics 090 Course at College B

Course	Computation Score	Elementary Algebra Score	Course Grade	Multiple Correlation
Math 090 (N = 461)	Mean 67.6	61.9	.57	-
	S.D. 8.7	6.4	.50	-
	r +.204	+.309	-	.337

Table 19

Summary of Concurrent Score-Grade Correlations for
Mathematics 090 Course at College B

Course	Computation Score	Elementary Algebra Score	Course Grade	Multiple Correlation
Math 090 (N = 393)	Mean 68.2	67.5	.57	-
	S.D. 7.5	7.9	.50	-
	r +.334	+.508	-	.516

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APPENDIX

CONTENT-VALIDITY QUESTIONNAIRES

EDUCATIONAL TESTING SERVICE

PRINCETON, N. J. 08540

Area Code 609
921-9000
CABLE: EDUCTESTSVC

April 18, 1980

College Board Programs

Dear College Instructor:

As you may know, Educational Testing Service is conducting a study of the validity of the New Jersey College Basic Skills Placement Test (NJCBSPT) for the New Jersey Basic Skills Council. One of the key elements in this project is an analysis of the content of the test by New Jersey college faculty who teach beginning college freshman students. As an instructor of reading, writing, or mathematics for beginning freshmen at your college, your judgment of the content of the test is of crucial importance both to the validation of the test and to its improvement.

Enclosed you will find a brief questionnaire as well as a copy of the test itself (Form 3BJP). Would you please complete the questionnaire and return it in the attached envelope, with the test booklet, to the campus coordinator for this project whose name is on the envelope? Please return the materials to your college coordinator by Friday, April 25.

Thank you in advance for your assistance in completing this analysis of the content of the NJCBSPT. If you have any questions, please feel free to call:

Lawrence W. Hecht
Associate Measurement Statistician
Educational Testing Service
(609) 921-9000 Ext. 3467

CONTENT ANALYSIS OF THE READING AND WRITING SECTIONS
OF THE NEW JERSEY COLLEGE BASIC SKILLS PLACEMENT TEST

In this questionnaire you are asked to make a judgment about ten skills that are intended to be measured by the reading and writing portions of the NJCBSPT. For each skill, please indicate whether it is very important, moderately important, or unimportant to the process of good reading or writing at the beginning college freshman level. So that you may get a better idea of what is meant by each skill, the item numbers for the items in Form 3BJP of the test that are intended to assess that skill are also given.

<u>Skill Description</u>	<u>Item Numbers</u>	<u>Importance of Skill</u> (circle one letter)		
		Very Important	Moderately Important	Unimportant
1. Understanding main ideas in reading passages	Reading Comprehension Items 1, 4, 7, 9, 12, 15, 18, 20, 23, 26, 30, 34, 38, 39	A	B	C
2. Understanding direct statements in reading passages	Reading Comprehension Items 2, 6, 11, 14, 16, 24, 29, 31, 32, 33, 37	A	B	C
3. Making inferences from reading passages	Reading Comprehension Items 3, 5, 8, 10, 13, 17, 19, 21, 22, 25, 27, 28, 35, 36, 40	A	B	C
4. Using complete sentences	Sentence Structure Items 1, 3, 5, 8, 14, 17, 21, 23, 26, 34	A	B	C
5. Using coordination and subordination appropriately	Sentence Structure Items 2, 7, 10, 11, 15, 19, 25, 27, 29, 30, 31, 33, 35	A	B	C
6. Placing modifiers appropriately	Sentence Structure Items 4, 6, 9, 12, 13, 16, 18, 20, 22, 24, 28, 32	A	B	C
7. Categorizing ideas	Logical Relationships Items 1-12	A	B	C
8. Using appropriate connectives in sentences	Logical Relationships Items 13-25	A	B	C
9. Making analogies in sentences	Logical Relationships Items 26-37	A	B	C
10. Recognizing principles of organization and relationships among sentences	Logical Relationships Items 38-50	A	B	C

11. The NJCBSPT also contains a 20-minute essay. For Form 3BJP of the test, the essay topic and instructions are as follows:

"The communities and neighborhoods we live in have various concerns, such as high taxes, repeated power failures, water pollution, the clearing of roads in winter, new highway construction, new parks and playgrounds, better street lighting, or increased police and fire protection.

In a well-organized essay, write about a concern in your community or neighborhood, preferably one that has affected or may affect you. Tell what your concern is, and why it is a concern. Indicate what action, if any, you or your fellow citizens have taken or plan to take to deal with that concern. Be sure to be specific."

How important is obtaining a writing sample in assessing the writing ability of beginning college students? Circle one letter below:

- A Very Important
- B Moderately Important
- C Unimportant

12. Please specify below any skills that are important to the reading and writing ability of beginning college students that are not assessed by the NJCBSPT.

13. Please complete the following information:

Your college _____

Your name and title _____

Courses you teach (give number and name):

Please return this questionnaire in the attached envelope, with the test booklet, to the campus coordinator for this project whose name is on the envelope. Return the materials to your college coordinator by Friday, April 25.

CONTENT ANALYSIS OF THE MATHEMATICS SECTIONS
OF THE NEW JERSEY COLLEGE BASIC SKILLS PLACEMENT TEST

In this questionnaire you are asked to make a judgment about eleven skills that are intended to be measured by the two mathematics portions of the NJCBSPT. The Computation Skills section (pages 23-28 in Form 3BJP booklet) is designed to assess students' proficiencies in basic computational skills. The Elementary Algebra Skills section (pages 29-34 in booklet) is designed to assess students' proficiencies in basic algebra. These algebra skills include ability to perform specific operations as well as the ability to carry through operations involving a succession of simple steps.

On the next page you are asked to judge the importance of testing each of the listed skills in assessing students' proficiencies in computation and elementary algebra. You will be rating each skill as very important to assess, moderately important to assess, or unimportant to assess.

Before completing the questionnaire, please provide the following information:

Your college _____

Your name and title _____

Courses you teach (give number and name):

<u>Skill Description</u>	<u>Item Numbers</u>	<u>Importance of Skill</u> (circle one letter)		
		Very Important	Moderately Important	Unimportant
Computation Skills:				
1. Operations with whole numbers	2,4	A	B	C
2. Operations with fractions	1,3,6-13	A	B	C
3. Operations with decimals	14,16-24	A	B	C
4. Solution of simple word problems (involving concepts of percent, proportion, and average value)	5,15,25-30	A	B	C
Elementary Algebra Skills:				
1. Substitution in algebraic expressions	35,36	A	B	C
2. Translating English phrases into appropriate algebraic expressions	45,53	A	B	C
3. Operations involving algebraic expressions	32,34,38,40,58,59	A	B	C
4. Operations involving simple polynomials	31,37,41,48-52	A	B	C
5. Operations involving exponents and roots	39,42-44	A	B	C
6. Solution of linear equations	33,46,47,55-57,60	A	B	C
7. Solution of linear inequalities	54	A	B	C

Please specify on the back of this page any skills that are important to the assessment of computation and elementary algebra proficiency of beginning college students that are not assessed by the NJCBSPT.

Please return this questionnaire in the attached envelope, with the test booklet, to the campus coordinator for this project whose name is on the envelope. Return the materials to your college coordinator by Friday, April 25.

CONTENT ANALYSIS OF THE MATHEMATICS SECTIONS
OF THE NEW JERSEY COLLEGE BASIC SKILLS PLACEMENT TEST

In this questionnaire you are asked to make a judgment about eleven skills that are intended to be measured by the two mathematics portions of the NJCBSPT. The Computation Skills section (pages 23-28 in Form 3BJP booklet) is designed to assess students' proficiencies in basic computational skills. The Elementary Algebra Skills section (pages 29-34 in booklet) is designed to assess students' proficiencies in basic algebra. These algebra skills include the ability to perform specific operations as well as the ability to carry through operations involving a succession of simple steps.

On the next page you are asked to judge the importance of testing each of the listed skills in assessing students' proficiencies in computation and elementary algebra. You will be rating each skill as very important to assess, moderately important to assess, or unimportant to assess.

Before completing the questionnaire, please provide the following information:

Your college. _____

Your name and title _____

Courses you teach (give number and name):

<u>Skill Description</u>	<u>Item Numbers</u>	<u>Importance of Skill</u> (circle one letter)		
		Very Important	Moderately Important	Unimportant
Computation Skills:				
1. Operations with whole numbers	2,4	A	B	C
2. Operations with fractions	1,3,6-13	A	B	C
3. Operations with decimals	14,16-24	A	B	C
4. Solution of simple word problems (involving concepts of percent, proportion, and average value)	5,15,25-30	A	B	C
Elementary Algebra Skills:				
1. Substitution in algebraic expressions	35,36	A	B	C
2. Translating English phrases into appropriate algebraic expressions	45,53	A	B	C
3. Operations involving algebraic expressions	32,34,38,40,58,59	A	B	C
4. Operations involving simple polynomials	31,37,41,48-52	A	B	C
5. Operations involving exponents and roots	39,42-44	A	B	C
6. Solution of linear equations	33,46,47,55-57,60	A	B	C
7. Solution of linear inequalities	54	A	B	C

Please specify on the back of this page any skills that are important to the assessment of computation and elementary algebra proficiency of beginning college students that are not assessed by the NJCBSPT.

Please return this questionnaire in the attached envelope, with the test booklet, to the campus coordinator for this project whose name is on the envelope. Return the materials to your college coordinator by Friday, April 25.

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 CONTENT ANALYSIS OF THE READING AND WRITING SECTIONS
 OF THE NEW JERSEY COLLEGE BASIC SKILLS PLACEMENT TEST

In this questionnaire you are asked to make a judgment about ten skills that are intended to be measured by the reading and writing portions of the NJCBSPT. For each skill, please indicate whether it is very important, moderately important, or unimportant to the process of good reading or writing at the beginning college freshman level. So that you may get a better idea of what is meant by each skill, the item numbers for the items in Form 3BJP of the test that are intended to assess that skill are also given.

<u>Skill Description</u>	<u>Item Numbers</u>	<u>Importance of Skill</u> (circle one letter)			
		Very Important	Moderately Important	Unimportant	
1. Understanding main ideas in reading passages	Reading Comprehension Items 1, 4, 7, 9, 12, 15, 18, 20, 23, 26, 30, 34, 38, 39	A	B	C	
2. Understanding direct statements in reading passages	Reading Comprehension Items 2, 6, 11, 14, 16, 24, 29, 31, 32, 33, 37	A	B	C	
3. Making inferences from reading passages	Reading Comprehension Items 3, 5, 8, 10, 13, 17, 19, 21, 22, 25, 27, 28, 35, 36, 40	A	B	C	
4. Using complete sentences	Sentence Structure Items 1, 3, 5, 8, 14, 17, 21, 23, 26, 34	A	B	C	
5. Using coordination and subordination appropriately	Sentence Structure Items 2, 7, 10, 11, 15, 19, 25, 27, 29, 30, 31, 33, 35	A	B	C	
6. Placing modifiers appropriately	Sentence Structure Items 4, 6, 9, 12, 13, 16, 18, 20, 22, 24, 28, 32	A	B	C	
7. Categorizing ideas	Logical Relationships Items 1-12	A	B	C	
8. Using appropriate connectives in sentences	Logical Relationships Items 13-25	A	B	C	
9. Making analogies in sentences	Logical Relationships Items 26-37	A	B	C	
10. Recognizing principles of organization and relationships among sentences	Logical Relationships Items 38-50	A	B	C	

11. The NJCBSPT also contains a 20-minute essay. For Form 38JP of the test, the essay topic and instructions are as follows:

"The communities and neighborhoods we live in have various concerns, such as high taxes, repeated power failures, water pollution, the clearing of roads in winter, new highway construction, new parks and playgrounds, better street lighting, or increased police and fire protection.

In a well-organized essay, write about a concern in your community or neighborhood, preferably one that has affected or may affect you. Tell what your concern is, and why it is a concern. Indicate what action, if any, you or your fellow citizens have taken or plan to take to deal with that concern. Be sure to be specific."

How important is obtaining a writing sample in assessing the writing ability of beginning college students? Circle one letter below:

A Very Important

B Moderately Important

C Unimportant

12. Please specify below any skills that are important to the reading and writing ability of beginning college students that are not assessed by the NJCBSPT.

13. Please complete the following information:

Your college _____

Your name and title _____

Courses you teach (give number and name):

Please return this questionnaire in the attached envelope, with the test booklet, to the campus coordinator for this project whose name is on the envelope. Return the materials to your college coordinator by Friday, April 25.