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ABSTRACT

The Montgomery County (Maryland) Public Schools (MCPS) provide English language instruction to approximately 3,800 students with limited English proficiency. This report represents results of an evaluation of the English for Speakers of Other Languages (ESOL)/Bilingual services offered during 1981-82. The first phase focuses on the entry/exit testing process, and was designed to evaluate the individual instruments used for testing as well as the entry/exit testing process in general. The entry assessment battery utilized consisted of three instruments: the Language Assessment Scale (LAS), the Minimum English Competency Test (MEC), and the Entry Teacher Evaluation interview. The exit battery consisted of a parallel form of the MEC, the LAS, and the Exit Teacher Evaluation. Major objectives of the evaluation were to determine: (1) the validity of the MEC as an entry/exit assessment of students' English proficiency; (2) whether parts of the battery are redundant; and (3) the reliability and validity of the overall testing process. It was found that: (1) test scores on the MEC and the nationally validated LAS are similar, suggesting that the MEC is a valid measure of English skills for Hispanic students in MCPS; (2) MEC scores successfully correlate with classroom performance; (3) the time required to administer the LAS is probably not justified, given its redundancy; and (4) regardless of their scores on the MEC, Asian students receive higher scores on the Exit Teacher Evaluation and are often mainstreamed with less proficiency than Hispanics. These findings led to the formulation of several recommendations to improve measurement validity and reliability. (GC)

MONTGOMERY COUNTY
PUBLIC SCHOOLS
ROCKVILLE, MARYLAND

Evaluation of the ESOL/Bilingual Program: Validation and Reliability of the Assessment Measures

FEBRUARY 1983

Edward Andrews
Superintendent of Schools

Prepared by the Department of Educational Accountability

MONTGOMERY COUNTY PUBLIC SCHOOLS
Rockville, Maryland

EVALUATION OF THE ESOL/BILINGUAL PROGRAM: VALIDATION AND RELIABILITY OF THE ASSESSMENT MEASURES

by

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EXECUTIVE SUMMARY

EVALUATION OF THE ESOL/BILINGUAL PROGRAM: VALIDATION AND RELIABILITY OF THE ASSESSMENT MEASURES

BACKGROUND

MCPS provides English language instruction to students whose English proficiency is too limited for them to function effectively in regular classes. Approximately 3,800 students, most of whom are foreign born, receive such instruction each year. Students of limited English language proficiency receive language instruction in English for Speakers of Other Languages (ESOL) and/or bilingual classes under the direction of the ESOL/Bilingual Division.

ESOL/Bilingual services are intended to prepare students to function with little or no supplemental English language instruction in regular MCPS classes. It is an intensive program of services that is expected to be of limited duration for any individual student. Normally, a student with limited English language skills will be enrolled in ESOL/Bilingual classes upon entry into MCPS, receive ESOL/Bilingual services in addition to other instructional services until he/she reaches exit-level English language proficiency, and will subsequently move into a regular MCPS instructional program. ESOL/Bilingual services are offered at levels ranging from beginning to advanced, depending on students' English language proficiency. A formal testing process (referred to as "entry/exit testing") has been used to determine students' initial placement in the ESOL/Bilingual program and to evaluate students' readiness for departure from the ESOL/Bilingual program.

At the request of the ESOL/Bilingual Division, the Department of Educational Accountability (DEA) began an evaluation of ESOL/Bilingual services during the 1981-82 school year. The first phase of this study, focusing on the entry/exit testing process, was designed to evaluate the individual instruments used for testing, as well as the overall entry/exit testing process. This report presents the results of this evaluation. The second phase of the evaluation, an evaluation of ESOL/Bilingual service delivery and follow-up on program graduates, is being initiated during the 1982-83 school year.

THE ENTRY/EXIT TESTING PROCESS

When students of limited English proficiency enter MCPS, they are tested with a battery of instruments designed to measure their English language skills. Performance on the assessment battery determines whether and at what level they are placed in ESOL/Bilingual classes.[1] Students are moved from ESOL/Bilingual classes into a "mainstream" MCPS instructional program when they attain the exit-level criterion score on a similar assessment battery. Whereas the timing of students' entry testing is predetermined (upon initial entry into MCPS), students may be exit tested at any point when their teacher(s) or parents request it to determine their readiness for program exit.

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1. For Grades 1-6, there are three levels of proficiency from beginning to advanced; for Grades 7-12, there are five levels of proficiency.

THE ESOL TESTS

Exhibit 1 describes the instruments used for entry/exit testing. The entry assessment battery consists of three instruments: the Language Assessment Scale (LAS), the Minimum English Competency Test (MEC), and the Entry Teacher Evaluation.

The LAS is a commercial test that was nationally standardized on Hispanic students. It assesses receptive and expressive oral language skills and is individually administered. The MEC was developed by MCPS ESOL program staff to assess listening, speaking, reading, and writing skills. The MEC is generally individually administered, although parts of it may be group administered.

Finally, the Entry Teacher Evaluation, an interview individually administered by the ESOL teacher, assesses students' English language pronunciation, grammar, vocabulary, fluency, and comprehension. The Entry Teacher Evaluation was developed by MCPS.

Students' subtest scores on each instrument are weighted and combined into a single total entry score, which provides the basis for determining initial ESOL/Bilingual placement. Appendix A provides more detail on the test instruments and scoring procedures.

The exit assessment battery also consists of three instruments: a parallel form of the MEC, the LAS (a parallel form does not exist), and the Exit Teacher Evaluation. The Exit Teacher Evaluation differs from the entry form in that it looks not only at communication skills but also places a good deal of emphasis on students' classroom performance. Scores from the separate instruments are weighted to provide a single total exit score, which is then compared to a preestablished exit-level criterion to determine students' readiness for departure from the ESOL/Bilingual program. The Exit Teacher Evaluation is usually completed by non-ESOL teachers.

STUDY OBJECTIVES

The entry/exit testing process evaluation has three major objectives:

- To determine the validity of the MEC as an entry/exit assessment of students' English language proficiency. The MEC, unlike the LAS, has not been validated on a large sample of students with limited English language proficiency.

- To determine whether parts of the assessment battery are redundant. Elimination of redundancy would result in a more streamlined testing process without loss of validity. More specifically, the question is whether the LAS, which is extremely time-consuming to administer, could be removed from the testing battery.

- To determine the reliability and validity of the overall entry/exit testing process. Overall performance determines the placement of students and the services received. If the overall assessment battery is not valid, placement decisions are likely to be suspect and the resultant services received of questionable appropriateness.

EXHIBIT 1

ESOL Entry and Exit Test Instruments

Instrument	Skills Assessed	Percentage of Score at Entry	Percentage of Score at Exit	Administration Type	Grade Levels Assessed	Form Used at Entry	Form Used at Exit
Language Assessment Scale	Minimal sound pairs, lexical, phonemes, comprehension, oral production	10	10	Individual	K-6 7-12	A,B(a)	A,B(a)
Minimum English Competency Test	Listening, speaking	60	50	Individual or group	K-2	A	B
	Listening, speaking, reading, writing			Individual or group	3-6 7-8 9-12		
Teacher Evaluation (Entry)	Pronunciation, grammar, vocabulary, fluency, comprehension	30	NA	Individual (structured interview)	K-12	-	NA
Teacher Evaluation (Exit)	Rate of learning, academic performance, work/study habits and motivation, completeness and timeliness of work, class participation	NA (b)	40	Individual (teacher checklist)	K-12	NA	-
	Ability to communicate with the teacher, ability to communicate with peers, teacher's prediction of the student's likelihood of success in school without further ESOL/ Bilingual services	NA (c)	0				

(a) While two forms exist, they are not parallel. Some teachers use Form A for Entry and Exit, and some use Form B.

(b) These skills are included in total score computation.

(c) These skills are not included in total score computation.

SUMMARY OF FINDINGS

The study found that the individual components of the entry/exit testing process differed in reliability and validity and were to some extent redundant. The specific findings are discussed in the following:

- Analyses comparing performance on the MEC and LAS indicate that, in general, test scores on the two measures are similar. Since the LAS is a nationally standardized and validated measure for Hispanic students, this suggests that the MEC may be considered to be a valid measure of English language skills for the MCPS Hispanic students.

- Additional analyses relating MEC scores to classroom performance and to the performance of native English speakers provide further evidence that the MEC is a valid measure of English proficiency. The data show that the test differentiates appropriately between students of different instructional levels from all language groups and measures skills possessed by the native English speaker.

- Considerable time is devoted to the administration of the LAS, which must be given to students individually. However, students' scores on the LAS comprise only 10 percent of their total scores on the entry/exit assessment battery. The MEC, which takes less time to administer than the LAS, has been found to be a valid measure of students' oral and written English language skills and provides data similar to that of the LAS.

- The study found that regardless of performance on the MEC, Asian students received higher scores than Hispanic students on the Exit Teacher Evaluation and because of this were sometimes exited from the program with less proficiency in the English language. This is primarily because the score on the exit instrument, which makes up 40 percent of the total exit score, reflects in large part classroom teachers' assessments of student performance in non-ESOL subjects. This finding raises questions regarding both the goals of the ESOL program and the degree to which the Exit Teacher Evaluation validly assesses students' readiness to function in the mainstream.

- The reliability of the teacher evaluations is at present untested. However, the lack of written objective criteria for their scoring raises questions concerning their use.

The reliability and validity of the overall entry/exit process is questioned from several perspectives.

- First, since the teacher evaluations make up 30 percent of the entry and 40 percent of the exit score, problems with them strongly affect the validity of the overall testing process.

- Second, some teachers had a disproportionately large number of students with total scores of 0. This suggests that at least some of the teachers are not implementing the assessment process at entry but rather are simply assigning a 0 to students and placing them in the lowest level of proficiency.

- Third, the standard errors of the tests are large (10 to 13 points at entry, 6 to 7 at exit) relative to the range of scores associated with placement in different instructional proficiency levels. This problem is especially severe at the secondary level where a standard error of this magnitude could alter a student's placement by as much as two levels in either direction.

- Fourth, for a variety of reasons, including the complexity of the weighting procedure, the need to combine scores from the subtests, and the difficulty of scoring the LAS, computational errors were found in over 30 percent of the scores. In a number of cases, these errors led to students being placed in an instructional level different from that actually indicated by their score.

PROGRESS TO DATE

As a result of informal sharing of the study results with ESOL program managers, the following changes have already taken place in the ESOL testing program:

- The LAS has been eliminated from entry and exit testing, resulting in a time savings of approximately 1,500 student hours and 1,500 staff hours for the 1982-83 academic year alone.

- A testing team has been formulated by the ESOL office to test all entering and exiting ESOL students. Prior to the 1982-83 school year, this team approach was tried on a pilot basis. Results of this evaluation helped justify the need for the team for the overall testing process. The use of the team will eliminate much of the concerns associated with inconsistent test administration and scoring as well as free more teacher and aide time for instruction.

- The Teacher Evaluations now contribute 30 percent of the total battery scores, and the MEC 70 percent. Thus, the total score is now based to a larger extent on an instrument that is valid at least for MCPS ESOL population.

- Discussions have already begun among ESOL staff at all ranks concerning the discrepancy in performance of Hispanic and Asian students on the Exit Teacher Evaluations completed by classroom teachers. Plans are being made by both program and DEA staff to follow up on this finding.

RECOMMENDATIONS

The above steps provide tangible solutions to many of the concerns raised in this report. The following recommendations address the remaining concerns:

- The Exit Teacher Evaluation process needs further examination. As it stands, 30 percent of the student's exit score is based on considerations not directly related to English language proficiency. The philosophical issue of whether classroom performance can or should override a student's opportunity to be mainstreamed from a language program must be addressed. And, if it is decided that this

performance is an important criterion for leaving the ESOL program, the services provided to students need to be examined to assess their adequacy in this area.

- A controlled reliability analysis is suggested for what remains of the entry and exit batteries. Included in this analysis would be an examination of the teacher evaluation instruments in light of their objectivity and appropriateness for the purposes for which they are used, a complete item analysis of the MEC with a view towards possible elimination of some items, and a Rasch calibration of items across grade and language proficiency levels.

- Every effort should be made to further reduce the measurement error associated with the entry and exit batteries. As a short-term solution, reduction of the number of ESOL working levels in Grades 7-12 from five levels to three, thereby widening the range of scores in each level, would offset the problem of unreliability of placement of students in the levels. Furthermore, since staff report that combination classes are now frequently used because there are not enough students at a single level to constitute an entire class, this reduction in the number of levels would serve a practical purpose as well.

MONTGOMERY COUNTY PUBLIC SCHOOLS
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The remainder of this document presents the detailed findings. The general results are contained in the body of the text; the more technical information supporting these findings is presented in the footnotes and appendices.

DETAILED FINDINGS

THE STUDY SAMPLE

During the 1980-81 academic year, 3,746[2] students were enrolled in the ESOL program for part or all of the year. Normally, students are entry tested only once to determine their initial placement in the ESOL program and are exit tested only when they are considered as candidates for mainstreaming in a

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2. This figure includes all students who participated in ESOL classes at any time during 1980-81. The maximum number enrolled at any point in time was 3,200.

regular MCPS instructional program. To provide the necessary data for this study, however, all students who were enrolled in the ESOL program in the fall of 1980 (2,593 students) were given the entry test battery. Similarly, all students who were enrolled in the ESOL program in the spring of 1981 (2,507 students) were given the exit test battery regardless of their perceived readiness for departure from ESOL. For purposes of this study, students who had incomplete, zero, or otherwise erroneous test batteries were eliminated from the sample.[3] This left a total of 2,376 entry tests and 2,406 exit tests, representing 63 percent and 64 percent, respectively, of the population of students who were enrolled in the ESOL program for at least part of the 1980-81 academic year. Unless otherwise noted, the results reported in the subsequent sections are based on this sample of students.

It should be stressed that this sample is more or less representative of students enrolled in ESOL during 1980-81, but is not representative of the smaller number of students who either entered the ESOL program for the first time in the fall of 1980 or exited from the ESOL program in the spring of 1981. In fact, many students who are included in this sample entered ESOL prior to 1980-81, thus inflating the entry test score averages over what would be expected from true program entrants. Similarly, many students were exited from ESOL prior to the end of the 1980-81 school year and were not part of the sample included in the exit testing. Therefore, exit test score averages obtained from this sample would be lower than those expected from bonafide candidates for exit.

To facilitate comparisons among students' average scores on the separate tests, students' scores for some analyses were transformed into standardized scores. For each test at each level (Grades K-2, 3-6, 7-8, 9-12), students' original scores were rescaled into scores with a mean of zero and a standard deviation of one (known as Z scores). Such a transformation yields scores with the same metric that can be straightforwardly compared without a loss of original precision.[4]

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3. A student can receive a total entry or exit score of zero only if he/she receives zero scores on each of the separate tests. In theory, this should occur only for students with no English language skills. However, 187 (8 percent) of the students who were entry tested had total scores of zero. It is suspected that at least some of these zero scores were erroneous for two reasons. First, not all of the students with zero scores were in the beginning ESOL instructional levels at the time of testing. Second, some teachers had a disproportionately large number of students with zero scores, suggesting that at least some of the students were assigned across-the-board zeros rather than being entry tested. Since it was impossible to separate the erroneous total zeros from the valid ones, all students with zero total entry scores were eliminated from the analyses.

4. Standardized scores are computed by subtracting the group mean from each student's raw score and dividing that number by the group standard deviation. In this metric, for example, a score of 1.0 is equivalent to one standard deviation above the mean, and a score of -1.5 is equivalent to one and one-half standard deviations below the mean.

VALIDITY OF THE MEASURES

Three kinds of validity were examined in this study: content validity, concurrent validity, and construct validity. Procedures for assessing these are described briefly in the following:

- The analysis of content validity examined the English language skills and competencies associated with high performance on the test(s).
- Concurrent validity was established by comparing students' performance on the instrument(s) to a predetermined standard (e.g., performance on an alternate instrument whose reliability and validity are established).
- A comparison of students' performance on the test(s) to the way things are expected to operate in the "real world" was used to establish construct validity. Students' test scores, for example, should improve as they progress through the levels of ESOL/Bilingual instruction.

THE MEC

The validity of the MEC was a major consideration since it is a MCPS-developed instrument that had not been subjected to the extensive reliability, validity, and norming analyses that are common for commercially developed instruments prior to their use. The LAS, it will be recalled, is an instrument whose reliability and validity as a measure of English language skills was established on a national sample of Hispanic students. The first step in establishing the validity of the MEC, then, was to compare students' MEC and LAS scores. The study found that results obtained from MEC and LAS testing were very similar for most groups of students,[5] which established the concurrent validity of the MEC for Hispanic students.

The construct validity of the MEC was analyzed by charting students' performance on the MEC as they progressed through the levels of ESOL/Bilingual services. Students' placement in levels of English language instruction (ranging from beginning to advanced) is supposed to be determined by their

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5. Correlations between the total LAS and total MEC scores ranged between .74 and .77 for entry testing results and between .56 and .77 for exit testing results. Correlations between the LAS Total scores and MEC Listening/Speaking scores were of a comparable magnitude, while correlations between LAS Total scores and the MEC Reading or Writing scores were lower. This pattern is expected since the LAS only measures oral English skills.

In addition, when the mean LAS and MEC scores at entry and exit were graphed by ESOL instructional levels, the curves were very similar for both tests, indicating equivalence of the measures for the groups tested. The correlation and graphical findings both support the concurrent validity of the MEC (see Figures B-1 through B-4 of Appendix B).

English language proficiency. The study found that students' assignments to levels of English language instruction were associated with their MEC scores; that is, the average MEC scores for students within ESOL/Bilingual levels increased for each level from beginning to advanced.[6] In addition, students' MEC scores increased significantly over a year's time in the ESOL/Bilingual program.[7] Both sets of analyses uphold the construct validity of the MEC.

The primary emphasis of ESOL/Bilingual instruction varies somewhat by grade levels and by levels of English language proficiency. Instruction for students in the primary grades and those at beginning ESOL/Bilingual levels emphasizes listening and speaking skills, whereas instruction for students who are more advanced in their English language skills and/or at higher grade levels emphasizes reading and writing skills. Scores obtained on the MEC confirmed these expected differences. That is, in the elementary grades it was found that there were significant differences between beginning and intermediate students in the listening and speaking sections; and advanced and exited students differed significantly in reading and writing. By Grades 7-12, however, there was a shift with significant differences observed between beginning and intermediate students' reading and writing skills. No differences in skill level were found between advanced and exited students in Grades 7-12 (see Figures B-5 and B-6).[8] These differential patterns of increased performance correspond to differential emphases in ESOL/Bilingual instruction, which provides further evidence for the content and construct validity of the MEC.

Finally, a sample of 196 native English-speaking students were tested on the MEC in the spring of 1982.[9] Almost all of the students (97 percent)

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6. The one exception to this pattern is that students at Level 6 had a lower mean MEC Reading score at entry than students at Level 5 in Grades 9-12. For more detail, again refer to Figures B-1 through B-4.

7. This finding is based on an analysis of differences in entry and exit test scores from the fall of 1980 and the spring of 1981 testing for the 38 percent of the main sample who were enrolled in the ESOL program at both points in time, eliminating students who had zero total scores at either testing. The gains over the course of the 1980-81 year were quite large, and statistically significant, for all of the MEC scores as well as the LAS and total scores, across all grade levels. See Table B-3 for details.

8. These results were obtained from a sample of 92 students enrolled in ESOL in the spring of 1982 or who had recently been exited from ESOL classes. The students were selected at random to represent the various levels of ESOL language competency and to represent a variety of grades. The MEC Form A was administered to beginning and intermediate students, while Form B was given to advanced and exited students. Results were not compared across forms.

9. These students were drawn from seven schools representing varying levels of average academic performance and were enrolled in Grades 1 through 8 and 11. They were tested with Form A of the MEC. These students represent the standard of English language competency against which the performance of ESOL students is compared, and therefore they should attain scores which would indicate no need of ESOL services.

received total scores at or beyond the exit-level criterion score (see Table B-4). Since attainment of the exit-level criterion indicates a sufficiently advanced level of English language competency for performance in the mainstream, this finding lends support to the concurrent and construct validity of the MEC.

For all of the above reasons, the MEC may be considered to be a valid measure of English language skills for the MCPS ESOL/Bilingual population.

THE LAS

The LAS has been validated and normed on a national sample of Hispanic students, but its validity as a measure of English language proficiency for speakers of other native languages has not been demonstrated. It is a test of receptive and expressive oral language skills, and thus provides no measure of students' reading and writing skills, which are equally important for effective functioning in regular classes. The emphasis on oral language also may bias the test for certain language groups. It is alleged, for example, that some of the items requiring discrimination in pronunciation are biased against Asian students, whose native languages are based integrally on tonal inflections. For these reasons, the content and construct validity of the LAS as a test of general English language proficiency for the MCPS ESOL/Bilingual population is in question.

The computation of total LAS scores is a complex process, involving conversion of raw scores to table values in three decimal places and hand computation of a total score in three decimal places. Many computational errors are made by ESOL teachers and aides, resulting in scores which exceed the accepted score range. In short, although correctly computed LAS total scores may be reliable, the considerable amount of error that is introduced in practice in the scoring process results in unreliable measures. (See Appendix A for details.)

Finally, it has already been shown that individual students' scores on the MEC and the LAS are very similar (the correlations between LAS and MEC scores are fairly high, ranging between .74 and .77 at entry and between .56 and .77 for exit; again see Tables B-1 and B-2). A comparison of average MEC and LAS scores by grades and ESOL levels provides further evidence for the high degree of overlap between the MEC and the LAS (see Table B-5). Across all grades and levels of ESOL instruction, students' mean LAS and MEC scores were very similar. It is apparent that the LAS provides very little information over and above the results based on MEC testing.

While the LAS has been nationally validated and standardized on Hispanic students, its use in across-the-board assessment of all ESOL students is questionable. Additionally, while considerable time is devoted to the individual administration of the LAS, students' scores on the LAS comprise only 10 percent of their total scores on the entry/exit assessment battery. Moreover, the MEC has been found to be a valid measure of students' oral and written English language skills, and it assesses a broader domain of skill area than does the LAS. For these reasons, the LAS is superfluous in the ESOL entry/exit testing process.

THE TEACHER EVALUATIONS

Next to the MEC, the Entry/Exit Teacher Evaluations make the largest contribution to a student's total entry or exit test score. (In 1980-81, the MEC and the Teacher Evaluation made a 60 percent and 30 percent contribution, respectively, to students' total entry scores, and a 50 percent and 40 percent contribution, respectively, to students' total exit scores.) The Entry Teacher Evaluation is based on teacher ratings of student performance on a structured interview in five separate areas. The Exit Teacher Evaluation, on the other hand, is a scale of ratings on aspects of students' classroom performance such as completeness and quality of work, study skills, and work habits. Exit teacher ratings are averaged across all teachers (ESOL and non-ESOL) by student, whereas entry ratings are made only by the ESOL teacher.

Analyses show that the performance ratings which comprise a major portion of the Exit Teacher Evaluation may be affecting the scores of some groups of students more than others. As a group, Hispanic students, for example, generally obtain performance ratings from their teachers that are lower than their MEC scores, while Asian students tend to receive performance ratings that are higher than their MEC scores (see Figures B-7 through B-10).[10] As a result, Hispanic students tend to be retained in ESOL/Bilingual classes longer than they would if their exit scores were determined solely on the basis of their MEC and LAS performance. Asian students, on the other hand, tend to leave ESOL classes with lower English language skills because teachers perceive their classroom performance in a more positive light. Whether or not these differences are reflected in performance once the student is returned to the mainstream setting is not known at this point. It is clear, however, that combining the language and performance scores into one score at exit obscures these profile differences and may be leading to inappropriate decisions regarding whether or not the student is ready to function in the mainstream classroom.

These findings call to the fore some fundamental issues regarding the teacher evaluations, especially the format used for exit testing. Specifically, the inclusion of classroom performance items on the exit evaluation raises critical questions concerning the goals of the ESOL/Bilingual program. Is the program intended to affect student development and classroom performance as well as language proficiency? And, if it is, are the services that are provided appropriate for addressing such performance goals?

Finally, it must be mentioned that it is not known how reliable the ratings are, either at entry or exit, as no objective behavioral criteria are provided

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10. More specifically, average standardized scores on the MEC total from exit testing and the Exit Teacher Evaluation were calculated for Asian and Hispanic students by grade levels and levels of ESOL instruction. With the exception of Level 6 students in Grades 7-8 and 9-12, Asian students' mean MEC totals were always lower than their mean Exit Teacher Evaluation totals. For Hispanic students, there were no major differences between mean MEC and Teacher Evaluation totals at the lower ESOL levels, but at the more advanced ESOL levels across grades, students' mean Exit Teacher Evaluation totals were generally lower than their mean MEC totals. These results are shown in Figures B-7 through B-10.

for the assignment of ratings. Thus, it is not known whether ratings produced by different teachers would be equivalent as regards either language proficiency or behavior.

In summary; the Entry Teacher Evaluation probably introduces a source of unreliability into the entry testing process, and the Exit Teacher Evaluation reduces the validity of the exit assessment procedure as a measure of English language proficiency.

VALIDITY OF THE OVERALL ENTRY/EXIT TESTING PROCESS

The study also examined the validity of the total scores on the entry and exit test batteries, particularly in terms of their usefulness for purposes of assigning students to levels of ESOL instruction and determining their readiness for termination of ESOL services.

The problems discussed above, especially those concerning the teacher evaluations, clearly affect the usefulness of the overall entry/exit testing process. In addition, however, there are three other sources of weakness that challenge the reliability and validity of the overall procedure.

First, one problem with the reliability of the entry testing process is that a relatively large proportion of the total entry test scores were zero (8 percent). It is possible for students with absolutely no English language skills to obtain total entry scores of zero; yet this figure seems excessively large. An analysis of entry test scores assigned by individual teachers showed that some teachers had a disproportionately large number of students with total scores of zero, suggesting that at least some of the zero entry scores may be attributable to a practice of nontesting at entry on the part of some teachers. This practice, if it occurs, reduces the reliability of the entry testing process.

Second, there is also reason to believe that the measurement errors of both entry and exit total batteries are large. The standard deviations of the total scores are large (see Table B-6). If we assume that the total score reliability is in the neighborhood of .8 (a fairly high reliability coefficient for tests of these types), then the standard errors of measurement range from 10 to 13 points for the entry total scores and from 6 to 7 points for the exit total scores (see Table B-6). These numbers are large relative to the range of scores associated with placement in specific ESOL instructional levels (see Table B-7).

A standard error of 10 means that, upon retesting, approximately one-third of the students would be expected to obtain scores more than 10 points higher or lower than their original scores purely by chance. For secondary school students, where a student could be assigned to any one of five levels, score variations of this magnitude could alter a student's entry ESOL placement by as much as two levels in either direction. This suggests that the total test score discriminates poorly for purposes of establishing placement levels that differ in terms of English language proficiency for students in Grades 7-12.

For all of the above reasons, a student who is reassessed on the test battery would be almost as likely to be placed in a different ESOL/Bilingual placement level as the same one due to sources of unreliability and invalidity in the total testing process rather than to students' English language competency.

Third, for a variety of reasons, including the complexity of the weighting procedure, the need to combine scores from the subtests, and the difficulty of scoring the LAS, computational errors were found in over 30 percent of the scores. In a number of cases, these errors led to students being placed in an instructional level different from that actually indicated by their score.

Thus, the overall entry/exit assessment procedure has some critical weaknesses and needs improvement before it can be considered a reliable and valid tool for either assigning students to ESOL/Bilingual instructional levels or determining whether a student may return to the mainstream.

ACCOMPLISHMENTS TO DATE

Based upon the informal sharing of preliminary evaluation findings with the ESOL/Bilingual program managers, several substantial changes which will greatly enhance the ESOL/Bilingual testing process have already been made. To reiterate:

- The LAS has been eliminated from entry and exit testing, resulting in a time savings of approximately 1,500 student hours and 1,500 staff hours for the 1982-83 academic year alone.

- A testing team has been formulated by the ESOL office.[11] This team will conduct all ESOL testing for the 1982-83 year. The use of the team will eliminate much of the concerns associated with inconsistent test administration and scoring as well as free more teacher and aide time for instruction.

- The Teacher Evaluations now contribute 30 percent of the total battery scores, and the MEC 70 percent. Thus, the total score is now based to a larger extent on an instrument that is valid at least for the MCPS ESOL population.

- Discussions have already begun among ESOL staff at all ranks concerning the discrepancy in performance assigned to Hispanic and Asian students on the Exit Teacher Evaluation by classroom teachers. Plans are being made by both program and DEA staff to follow up on this finding.

DEA will continue to work closely with the ESOL/Bilingual Division in the conduct of their program evaluation. Additional activities, which are planned to start in the 1982-83 school year, include a follow-up evaluation of former ESOL students who were mainstreamed into regular MCPS classes. It is suggested that future activities also include the recommendations contained in this document for further study of the test batteries.

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11. This team has been operating on a pilot basis for approximately two years. Findings included in this report helped substantiate the need for this team in all ESOL entry and exit testing.

APPENDIX A

The ESOL Testing Process

THE ESOL TESTING PROCESS

THE ESOL TESTS

Four different instruments are used in the ESOL Entry and Exit Teacher assessment process: the Language Assessment Scale (LAS), published and standardized by Linguametrics Group; the Minimum English Competency Test (MEC) developed in MCPS; a teacher evaluation of student language proficiency (structured interview) utilized at entry; and a teacher checklist of student performance utilized at exit. Both teacher instruments were developed in MCPS. Exhibit A-1 illustrates these tests, the skills they assess, and the levels and forms available.

Examination of Exhibit A-1 indicates that only one of the four measures, the MEC, may be administered in a group setting, although it is usually individually administered. The MEC is primarily multiple choice. The LAS must be individually administered since it assesses solely receptive and productive language. It is time consuming to administer and for this reason is not favored by many teachers.

The teacher evaluation used at entry is a structured interview and is individually administered. The results are somewhat subjective since the teacher must rate the student's performance in five aspects of English usage on a six-point rating scale from beginning language skills to native speaker.

The teacher evaluation used at exit testing is a checklist of performance completed by the student's ESOL and non-ESOL teachers. (The three instruments illustrated above are administered or completed solely by ESOL teachers or aides.) At exit, all of the student's teachers rate him/her on eight aspects of behavior, of which only the first five are included in the student's exit score (see Exhibit A-1). Ratings assigned by all the teachers are averaged into one score per behavior area, thus producing scores that are less dependent on the subjective evaluation of a particular teacher than is the case at entry testing.

EXHIBIT A-1

ESOL Entry and Exit Test Instruments

Instrument	Skills Assessed	Administration Type	Grade Levels Assessed	Form Used at Entry	Form Used at Exit
Language Assessment Scale	Minimal sound pairs, lexical, phonemes, comprehension, oral production	Individual	K-6 7-12	A,B[a]	A,B[a]
Minimum English Competency Test	Listening, speaking	Individual or group	K-2	A	B
	Listening, speaking, reading, writing	Individual or group	3-6 7-8 9-12		
Teacher Evaluation (Entry)	Pronunciation, grammar, vocabulary, fluency, comprehension	Individual (structured interview)	K-12	-	NA
Teacher Evaluation (Exit)	Rate of learning, academic performance, work/study habits and motivation, completeness and timeliness of work, class participation (b)	Individual (teacher checklist)	K-12	NA	-
	Ability to communicate with the teacher, ability to communicate with peers, teacher's prediction of the student's likelihood of success in school without further ESOL/ Bilingual services (c)				

(a) While two forms exist, they are not parallel. Some teachers use Form A for entry and exit, and some use Form B.

(b) These skills are included in total score computation.

(c) These skills are not included in total score computation.

THE SCORING PROCESS

Each of the four instruments has its own scoring algorithm. Exhibit A-2 illustrates the processes by which subscale scores are obtained, and Exhibit A-3 shows final computations for the LAS, MEC, Entry/Exit Teacher Evaluations, and total score.

It may be noted that the LAS, which initially produces a maximum total score of 101 at Grades K-6 and 95 at Grades 7-12, contributes only 10 percent of the total score upon which ESOL program placement is based.[1] The MEC, which produces a maximum total score of 40 at Grades K-2, 100 at Grades 3-6, 130 or 180 at Grades 7-8[2], and 180 at Grades 9-12, contributes 60 percent of the total placement score.[3] Finally, the teacher evaluations, which produce maximum total scores of 30 and 132 at entry and exit, respectively, contribute 30 percent of their respective total scores.[4] Thus, it may be concluded that a student's placement in the ESOL continuum of services is largely influenced by performance on the MEC and by Entry/Exit Teacher Evaluation.

PROGRAM PLACEMENT

Program placement is determined primarily by the student's total score on the ESOL entry or exit test battery. However, the ESOL teacher is empowered to adjust the student's placement level up or down either if it is believed that the test results are inaccurate or if other factors, such as student behavior or motivation, are considerations. Exhibit A-4 displays the placement levels and score ranges utilized in the provision of ESOL/Bilingual services in MCPS. Students in Grades K-2 have two working levels in ESOL into which they may be placed, students in Grades 3-6 have three working levels, and students in Grades 7-12 have five levels.

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1. See the column labeled "Raw Score Maximum" in Exhibit A-2.

2. 130 at entry, 180 at exit.

3. In 1980-81, the MEC contributed 50 percent of the total exit score. This was changed to 60 percent in 1981-82.

4. The Exit teacher evaluation contributed 40 percent of the total exit score in 1980-81. This was changed to 30 percent in 1981-82.

EXHIBIT A-2

Scoring of ESOL Entry and Exit Instruments

Instrument	Grades	Subtest	Raw Score Maximum	Conversion Algorithm	Converted Score Maximum
Language Assessment Scale	K-6	Minimal sound pairs	30	Table lookup of raw score	.125
		Lexical	20	Table lookup of raw score	.125
		Phonemes	36	Table lookup of raw score	.125
		Sentence comprehension	10	Table lookup of raw score	.125
		Oral production	5	Rating scale of six items, rated 1-5, then averaged. Score converted by table lookup.	.5
Language Assessment Scale	7-12	Minimal sound pairs	24	Same as K-6	.125
		Lexical	20	Same as K-6	.125
		Phonemes	36	Same as K-6	.125
		Comprehension	10	Same as K-6	.125
		Oral production	5	Same as K-6	.5
Minimum English Competency Test	K-2	Listening	15	Listening x 2.5 = Listening	37.5
		Listening/speaking	10	(Listening/speaking + Speaking) x 2.5 = Speaking	62.5
		Speaking	15		
	3-6	Listening	15	None	15
		Listening/speaking	10	Listening/speaking + Speaking = Speaking	25
		Speaking	15		
		Reading	35	None	35
		Writing	25	None	25
	7-8	Listening	20	Listening x .5 = Listening	10
		Speaking	20	None	20
		Reading	30-Entry 60-Exit	Reading x .6 = Reading Reading x .5 = Reading	30
		Writing	40-Entry 80-Exit	None Writing x .5 = Writing	40
	9-12	Listening	20	Listening x .5 = Listening	10
		Speaking	20	None	20
		Reading	60	Reading x .5 = Reading	30
		Writing	80	Writing x .5 = Writing	40
Teacher Evaluation Form	K-12	Pronunciation	6	None	6
		Grammar	6	None	6
		Vocabulary	6	None	6
		Fluency	6	None	6
		Comprehension	6	None	6
Teacher Evaluation Form	K-12	Rate of learning	32	Average across all teachers	32
		Academic performance	40	Average across all teachers	40
		Over study habits	12	Average across all teachers	12
		Completeness and timeliness of work	8	Average across all teachers	8
		Class participation	8	Average across all teachers	8
		Ability to communicate with teacher	8	Not computed	0
		Ability to communicate with peers	8	Not computed	0
		Teacher's prediction of success without ESOL	8	Not computed	0

EXHIBIT A-3

Computation Algorithms for Total Score

Grades	Assessment Time	Score Type		Algorithm	Maximum Score
K-12	Entry/Exit	LAS[a]	=	(.125+.125+.125+.125+.5) x 10	10
K-2	Entry	MEC	=	(Listening+Speaking) x .6	60
3-12	Entry	MEC	=	(Listening+Speaking+Reading +Writing) x .6	60
K-12	Entry	Teacher Evaluation	=	[No conversion necessary]	30
K-2	Exit	MEC	=	(Listening+Speaking) x .5	50[b]
3-12	Exit	MEC	=	(Listening+Speaking+Reading +Writing) x .5	50[b]
K-12	Exit	Teacher Evaluation	=	(Rate learn. + acad. perf. + work/study skills + completeness + class particip.) x .4	40[c]
K-12	Entry/Exit	TOTAL	=	LAS + MEC + Teacher Evaluation	100

(a) .125 and .5 are maximum table lookup scores.
(b) Weighting factor was changed to .6 for 1981-82 year.
(c) Weighting factor was changed to .3 for 1981-82 year.

EXHIBIT A-4

ESOL/Bilingual Placement Levels as Determined
By Entry/Exit Test Scores

Grades	Level	Description	Entry/Exit Test Score Range
K-2	1	Beginning	0- 54
	2	Intermediate	55- 74
	6	No ESOL	75-100
3-6	1	Beginning	0- 54
	2	Intermediate	55- 74
	3	Advanced	75- 84
	6	No ESOL	85-100
7-12	1	Low Beginning	0- 40
	2	High Beginning	41- 55
	3	Low Intermediate	56- 64
	4	High Intermediate	65- 74
	5	Advanced	75- 84
	6	No ESOL	85-100

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APPENDIX B

Statistical Tables and Figures

TABLE B-1

Pairwise Correlations Between LAS and MEC Entry Scores

Score Pairs	Grades K-2	Grades 3-6	Grades 7-8	Grades 9-12
LAS Total with MEC Total	.74	.77	.75	.74
LAS Total with MEC Listening and Speaking Combined	.74	.78	.71	.73
LAS Total with MEC Reading	-*	.66	.69	.70
LAS Total with MEC Writing	-	.66	.71	.61
Number of Students in Sample	725	635	242	587

*In Grades K-2 the MEC contains only Listening and Speaking.

TABLE B-2

Pairwise Correlations Between LAS and MEC Exit Scores

Score Pairs	Grades K-2	Grades 3-6	Grades 7-8	Grades 9-12
LAS Total with MEC Total	.73	.56	.64	.77
LAS Total with MEC Listening and Speaking Combined	.73	.59	.70	.72
LAS Total with MEC Reading	-*	.47	.56	.70
LAS Total with MEC Writing	-	.47	.50	.65
Number of Students in Sample	828	716	262	593

*In Grades K-2 the MEC contains only Listening and Speaking.

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TABLE B-3

T-Tests of Significance of Entry to Exit Gains for Students with Nonzero Entry and Exit Total Scores

Grades	Measure	Mean Entry Score	Mean Exit Score	Mean Gain	T	DF	Probability
K-2	MEC Listening and Speaking and MEC Total	19.1	31.4	12.3	30.6	476	.000
	LAS	4.6	7.1	2.5	23.3	476	.000
	Total Battery	45.9	70.7	24.8	26.2	476	.000
3-6	MEC Listening and Speaking	24.2	35.1	10.9	22.7	423	.000
	MEC Reading	12.0	25.1	13.1	29.5	423	.000
	MEC Writing	8.5	15.6	7.1	21.5	423	.000
	MEC Total	44.6	75.7	31.1	30.1	423	.000
	LAS	5.5	7.8	2.3	20.8	423	.000
	Total Battery	45.9	70.3	24.4	23.1	423	.000
7-8	MEC Listening and Speaking	14.4	20.1	5.7	12.7	138	.000
	MEC Reading	13.2	19.7	6.5	12.4	138	.000
	MEC Writing	15.7	23.9	8.2	10.0	138	.000
	MEC Total	43.4	63.9	20.5	13.7	138	.000
	LAS	5.0	7.1	2.1	12.1	138	.000
	Total Battery	44.2	64.2	20.0	13.2	138	.000
9-12	MEC Listening and Speaking	14.0	19.1	5.1	18.4	353	.000
	MEC Reading	15.7	20.7	5.0	17.2	353	.000
	MEC Writing	19.4	25.8	6.4	15.9	353	.000
	MEC Total	49.2	65.7	16.5	22.7	353	.000
	LAS	5.0	7.1	2.1	18.0	353	.000
	Total Battery	47.2	66.2	19.0	23.3	353	.000

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TABLE B-4

Results of MEC Testing of Native English-speaking Students

Score Range	Total N	Total %	Grades K-2 N	Grades K-2 %	Grades 3-6 N	Grades 3-6 %	Grades 7-8 N	Grades 7-8 %	Grades 9-12 N	Grades 9-12 %
Less than 80[a]	0	0	0	0	0	0	0	0	0	0
80-84[b]	7	4	2	5	1	1	4	10	0	0
85-89[c]	15	8	3	7	3	3	6	15	3	12
90-94[c]	52	27	8	18	25	29	9	23	10	38
95-100[c]	122	62	31	70	57	66	21	53	13	50

(a) Failing score at all grade levels.

(b) Passing score for Grades K-2; failing at all other grade levels.

(c) Passing score at all grade levels.

TABLE B-5

Mean Standardized Entry Test Scores by ESOL Proficiency Level*

Grades	Instrument	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6 (No ESOL)
K-2	LAS	- .38	.65	1.00			1.11
	MEC	- .43	.65	1.13			1.25
	Teacher Evaluation	- .43	.56	1.20			1.50
	Total	- .44	.66	1.20			1.38
	Number of Students	385	205	75			59
3-6	LAS	- .54	.55	.85			1.06
	MEC	- .74	.61	1.09			1.41
	Teacher Evaluation	- .64	.54	1.01			1.46
	Total	- .72	.61	1.09			1.46
	Number of Students	289	215	95			34
7-8	LAS	- .62	.15	.53	.86	.99	1.14
	MEC	- .81	.24	.68	.95	1.23	1.51
	Teacher Evaluation	- .80	.06	.57	.82	1.07	1.77
	Total	- .79	.22	.70	.98	1.25	1.67
	Number of Students	87	54	44	35	14	8
9-2	LAS	- .82	- .31	.47	.77	.91	1.18
	MEC	- 1.05	- .17	.43	.83	1.12	1.19
	Teacher Evaluation	- 1.00	- .27	.40	.76	1.16	1.72
	Total	- 1.07	- .23	.45	.86	1.19	1.44
	Number of Students	149	140	124	75	84	15

*Proficiency Levels:
K-2: 1=Beginning; 2=Intermediate; 3=Unknown (there should be no Level 3 students in grades K-2, yet 75 were included in the entry test population).
3-6: 1=Beginning; 2=Intermediate; 3=Advanced.
7-12: 1=Low beginning; 2=High beginning; 3=Low intermediate; 4=High intermediate; 5=Advanced.

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TABLE B-6

Standard Deviations and Standard Errors of Measurement
Of Entry and Exit Total Scores by Grade Levels

Grade	Entry		Exit	
	Standard Deviation	Standard Error* of Measurement	Standard Deviation	Standard Error* of Measurement
K-2	28.8	13.0	16.0	7.2
3-6	28.2	12.7	15.5	7.0
7-8	25.6	11.5	15.0	6.8
9-12	22.4	10.1	14.4	6.5

*The standard errors of measurement are computed on the basis of an assumed total score reliability of .8. If the true total score reliability is lower, the standard errors of measurement would be larger. The formula is $SEM=SD\sqrt{1-r}$ where SEM=Standard Error of Measurement, SD=Standard Deviation, and r=Reliability Coefficient.

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TABLE B-7

ESOL/Bilingual Placement Levels as Determined
By Entry/Exit Test Scores

Grades	Level	Description	Entry/Exit Test Score Range
K-2	1	Beginning	0- 54
	2	Intermediate	55- 74
	6	No ESOL	75-100
3-6	1	Beginning	0- 54
	2	Intermediate	55- 74
	3	Advanced	75- 84
	6	No ESOL	85-100
7-12	1	Low Beginning	0- 40
	2	High Beginning	41- 55
	3	Low Intermediate	56- 64
	4	High Intermediate	65- 74
	5	Advanced	75- 84
	6	No ESOL	85-100

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FIGURE B-1

Entry and Exit Mean LAS and MEC Scores by Level - Grades K-2

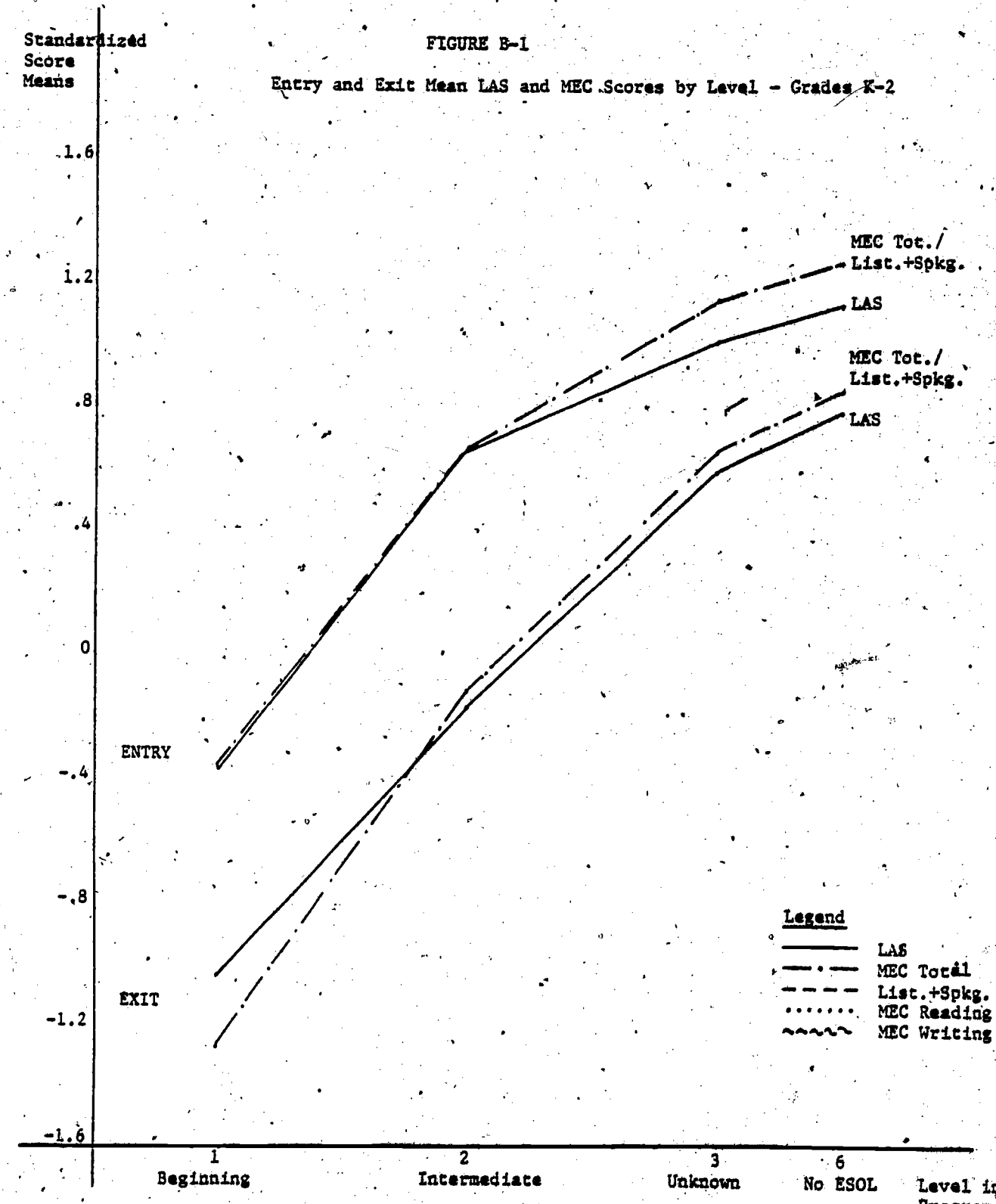

FIGURE E-2

Entry and Exit Mean LAS and MEC Scores by Level - Grades 3-6

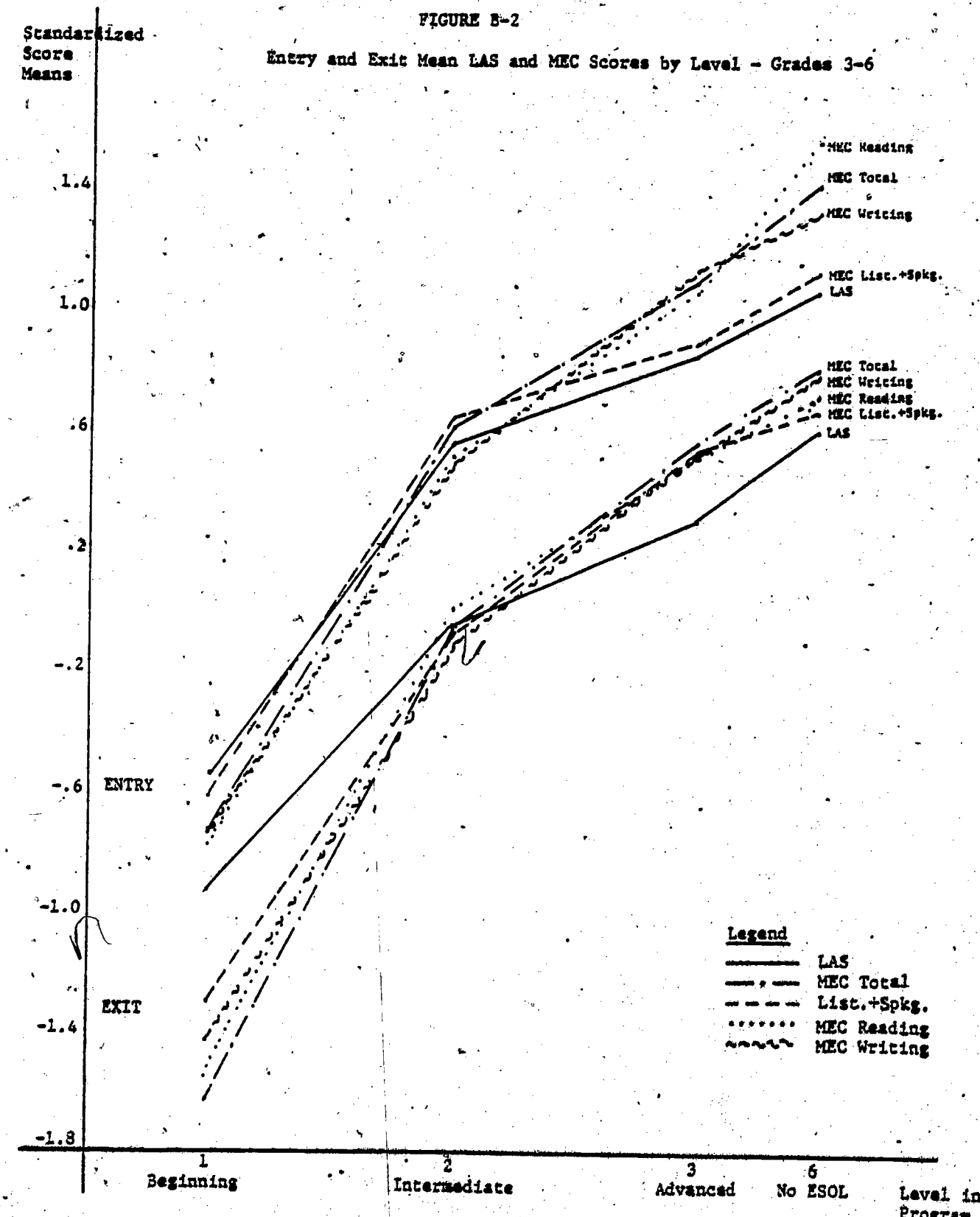

FIGURE B-3

Entry and Exit Mean LAS and MEC Scores by Level - Grades 7-8

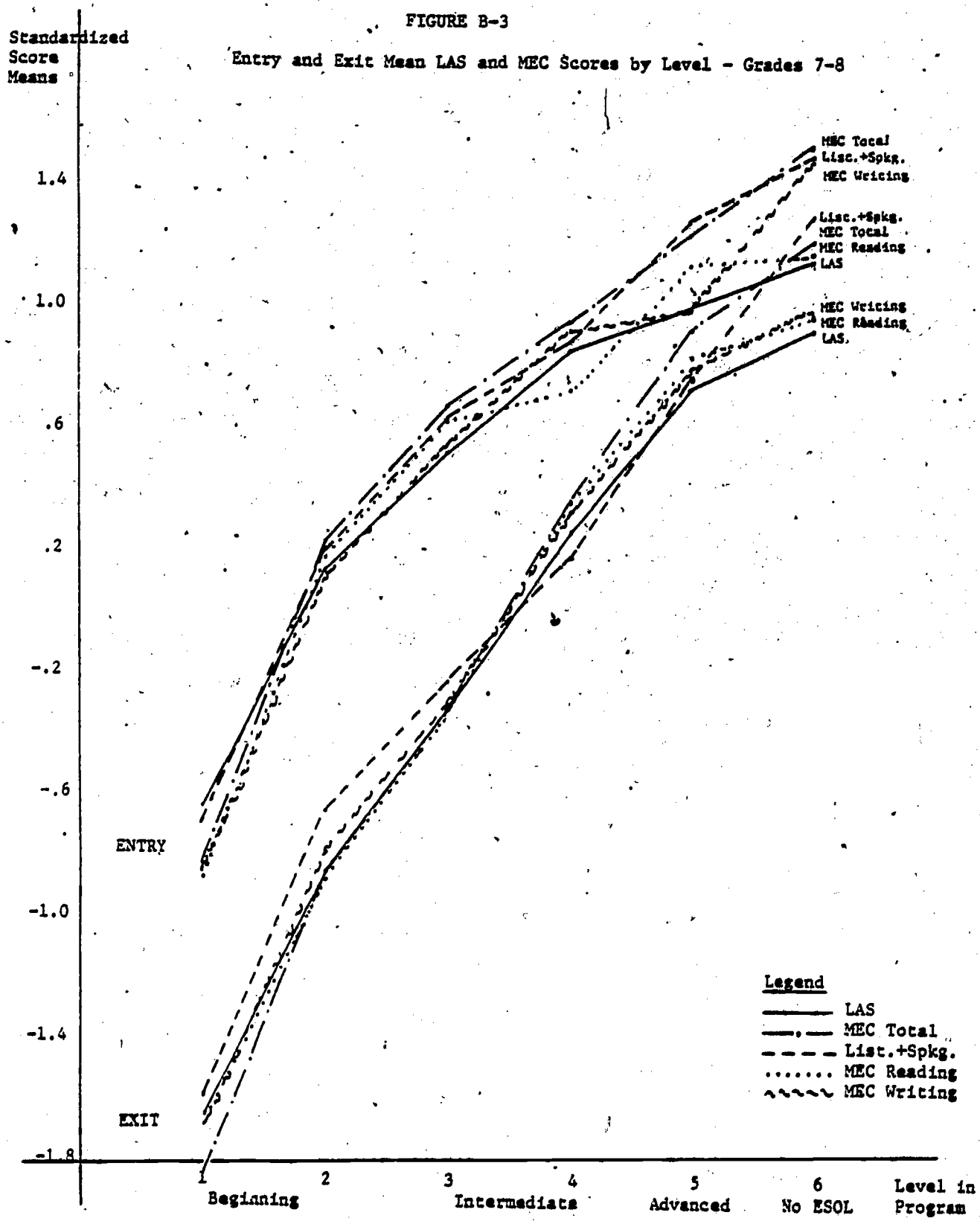

FIGURE B-4

Entry and Exit Mean LAS and MEC Scores by Level - Grades 9-12

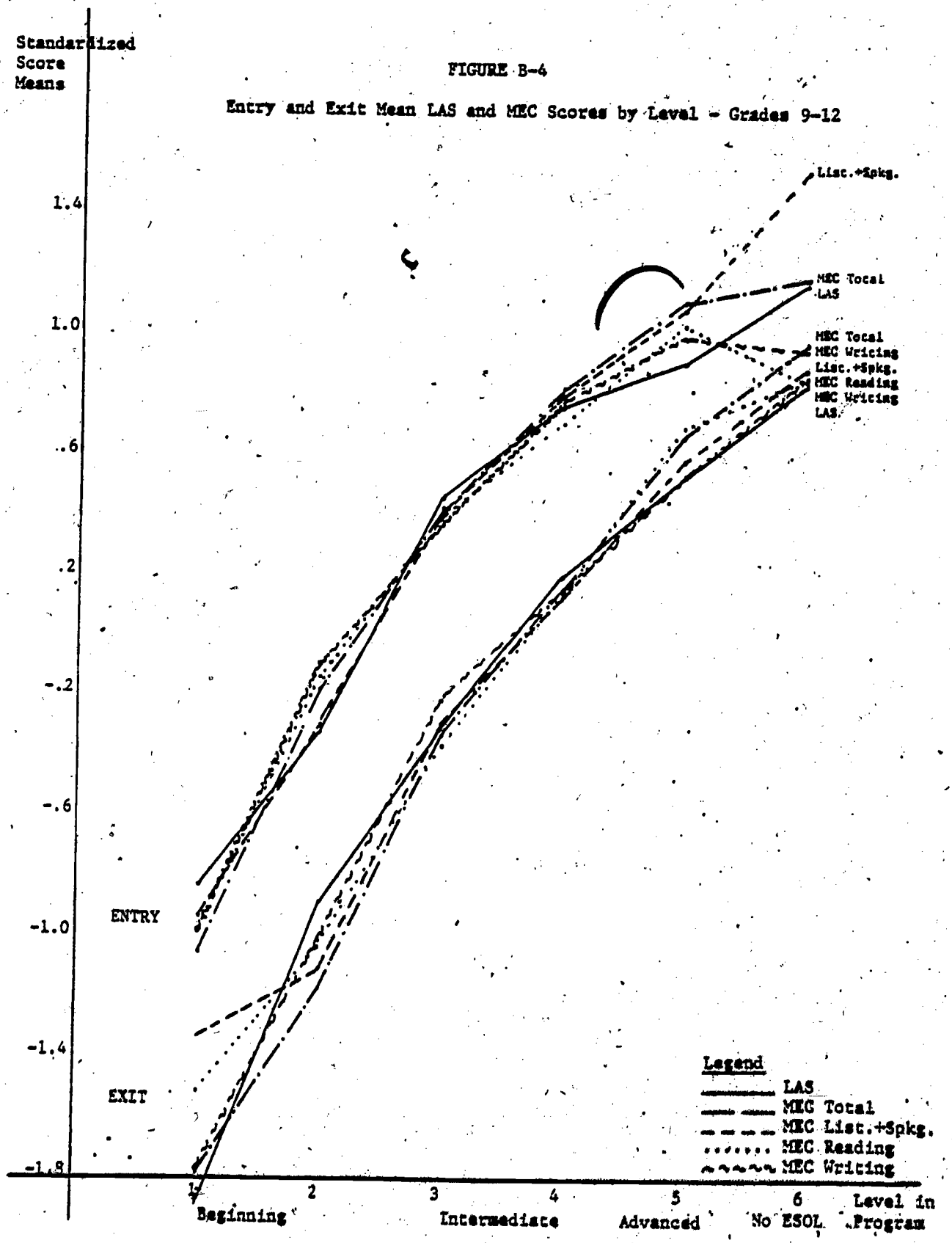

FIGURE B-5

MEC Subtest Scores for Grades 3-6; Forms A and B

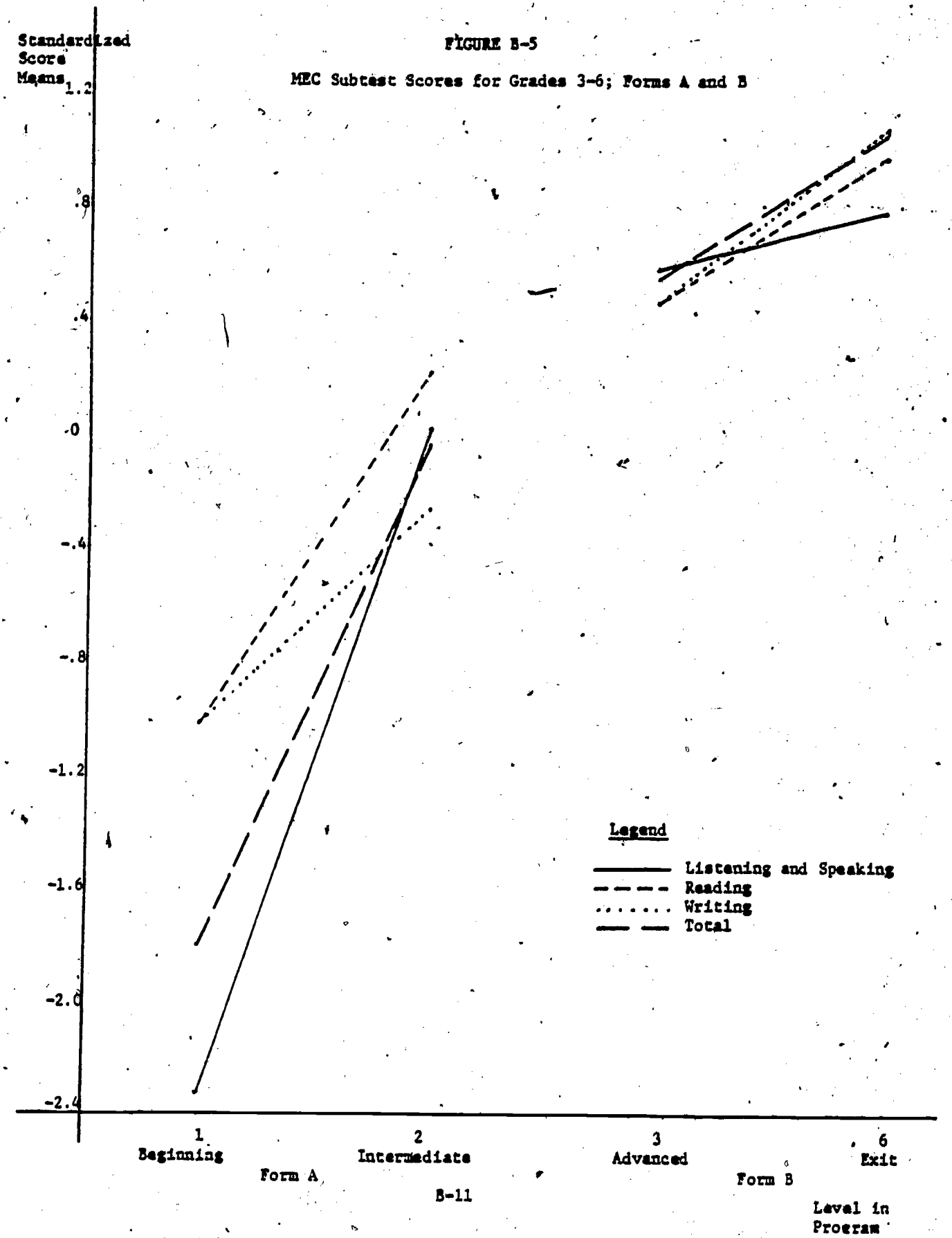

FIGURE B-6

MEC Subtest Scores for Grades 7-12; Forms A and B

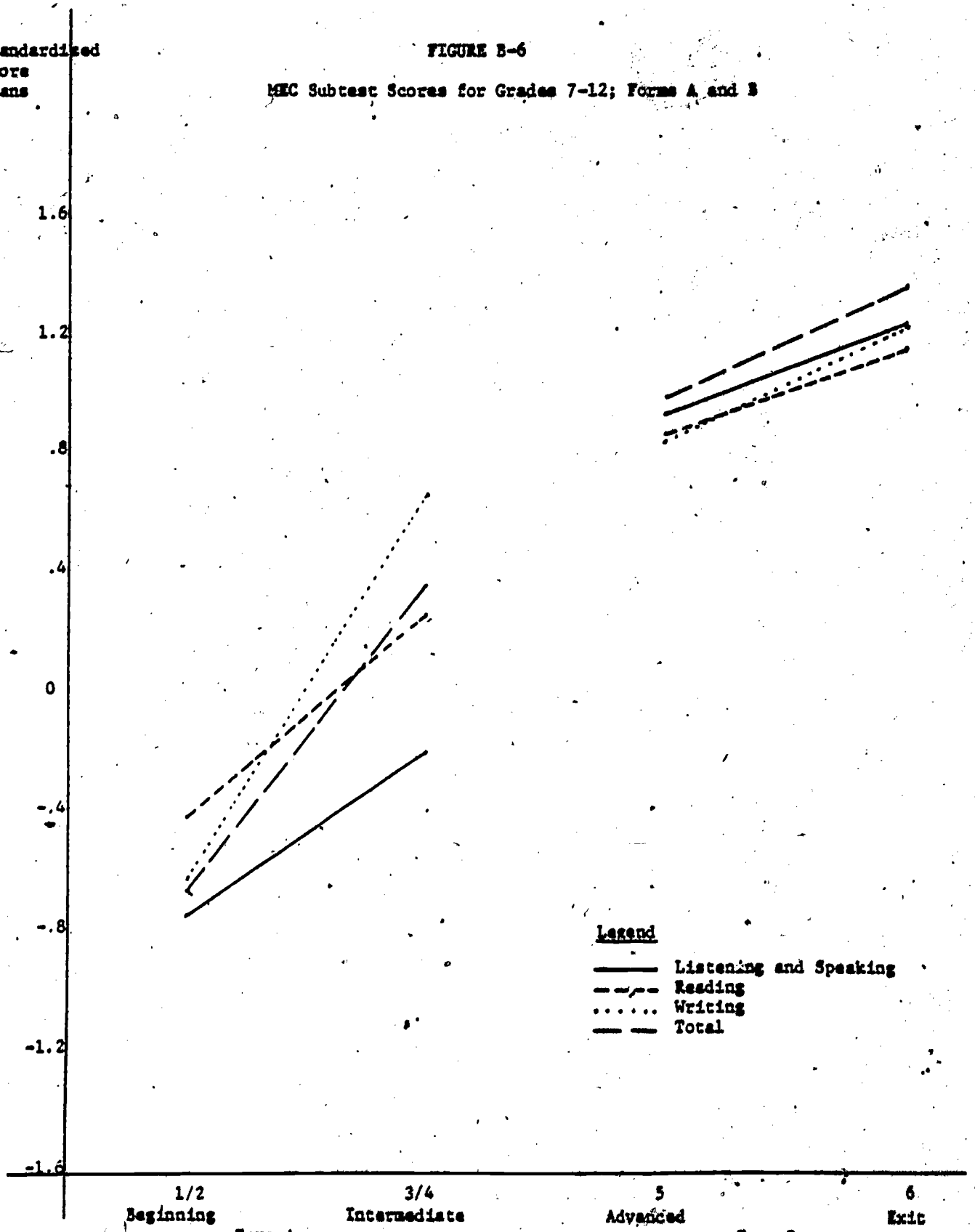

FIGURE B-7

Exit Standardized Score Means, Grades K-2
Asians and Hispanics

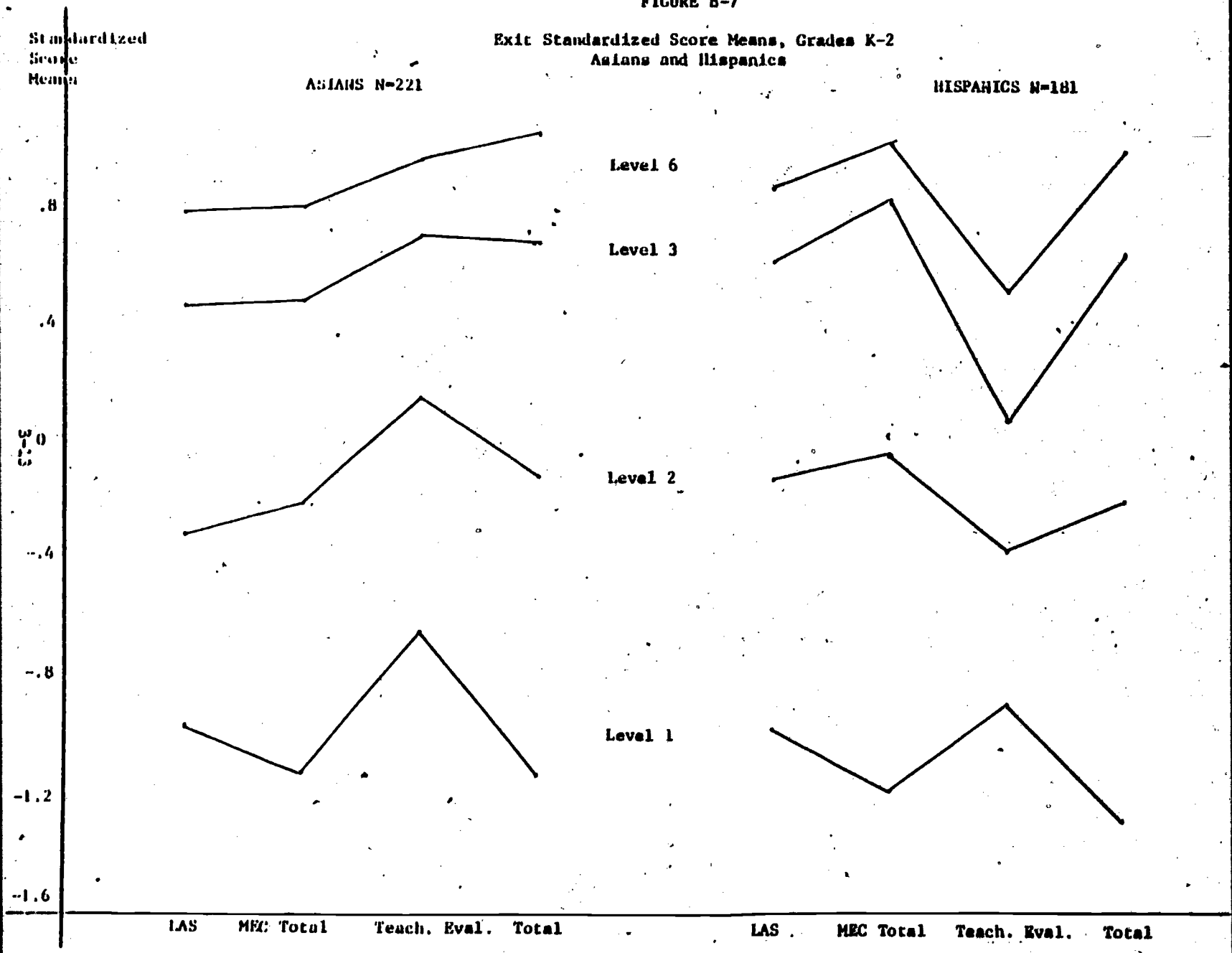

FIGURE B-8

Exit Standardized Score Means, Grades 3-6
Asians and Hispanics

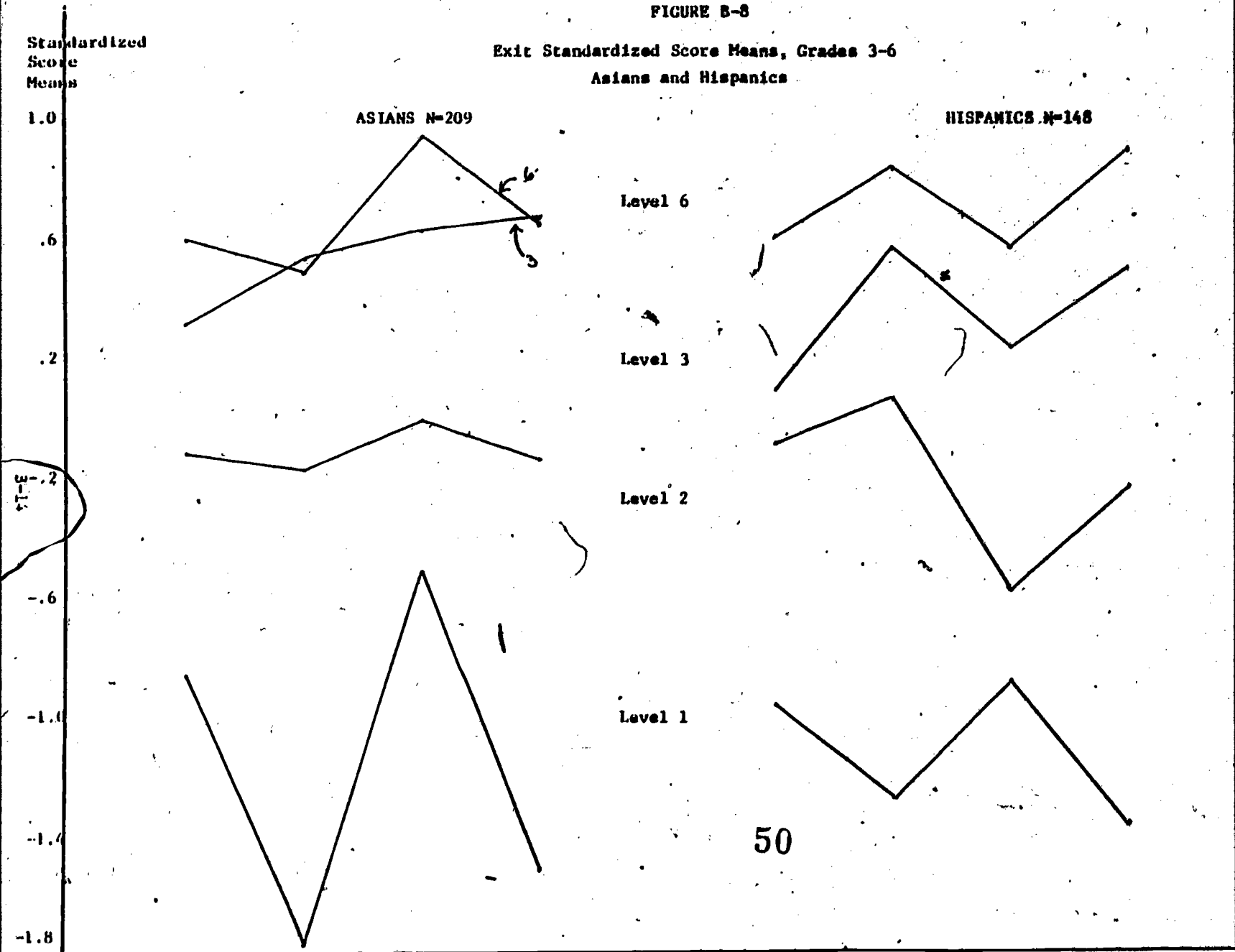

FIGURE B-9

Exit Standardized Score Means, Grades 7-8
Asians and Hispanics

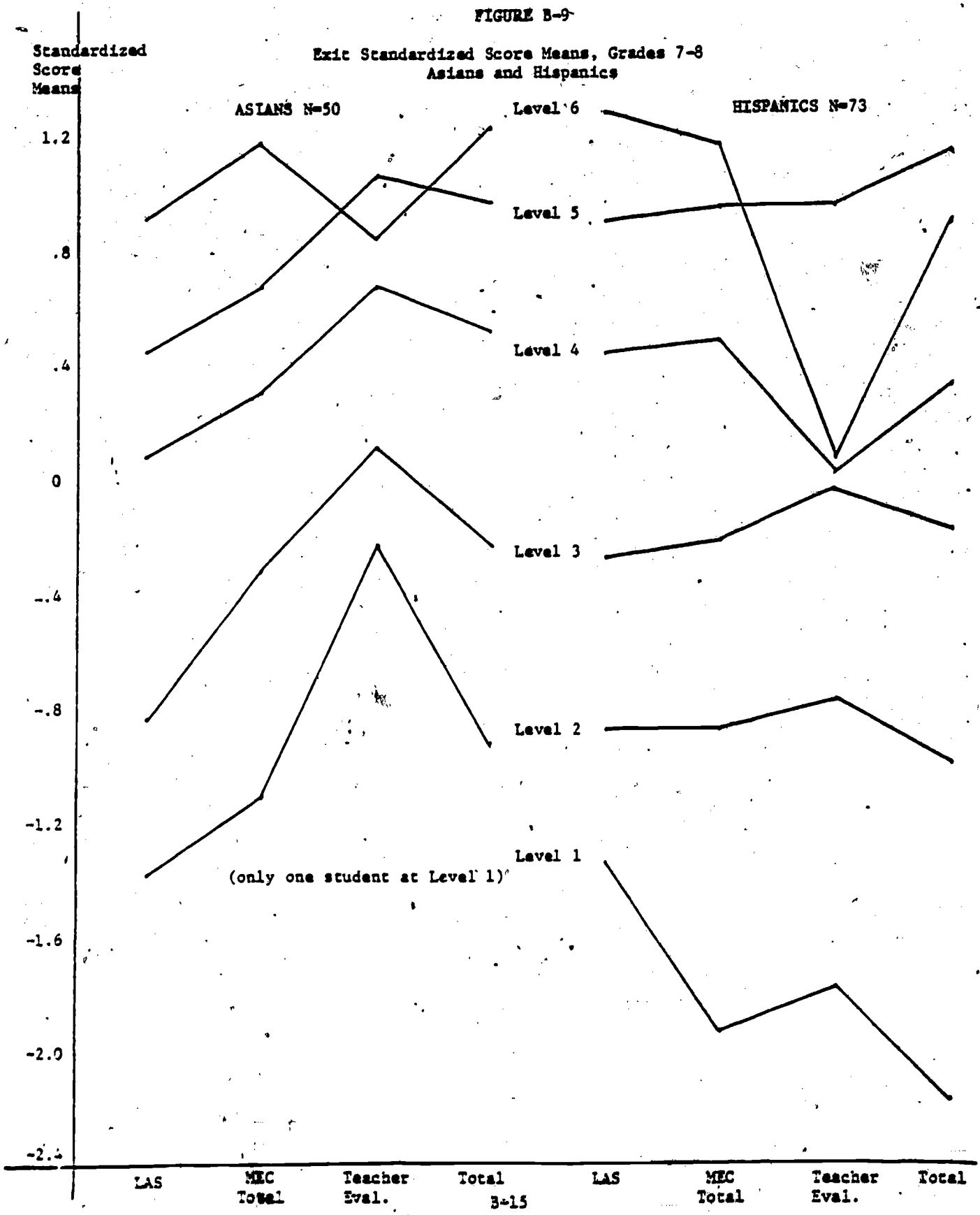

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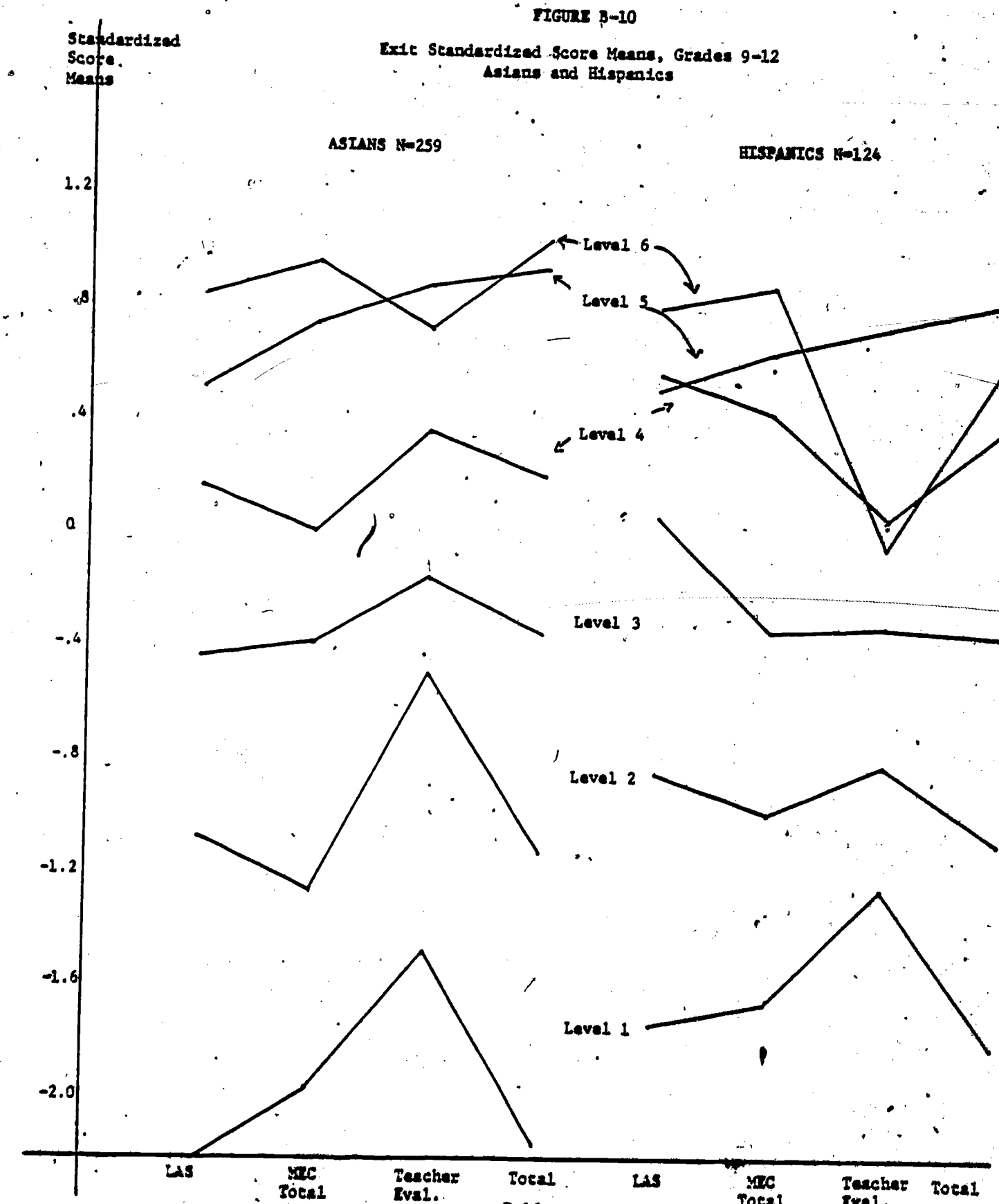
FIGURE B-10

Exit Standardized Score Means, Grades 9-12
Asians and Hispanics



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