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ABSTRACT

The 1990 Summer Academic Skills Achievement Program in Columbus (Ohio) provided 160 hours of instruction in reading comprehension and language mechanics skills needed for entry-level employment to 123 Job Training Partnership Act (JTPA) clients. The program used a "whole language" approach to grammar and composition instruction and also included instruction in preemployment skills. Five evaluation criteria were developed based on student pre- and post-program performance on the Comprehensive Test of Basic Skills (CBTS) and on class attendance. The program failed to meet four of the five objectives. Results indicate that: (1) clients who attended 75 percent of the program failed to demonstrate a gain of at least one grade equivalent from pretest to posttest; (2) clients who attended 75 percent of the program did not improve objective-level mastery by 30 percent from pretest to posttest; (3) 80 percent of the clients who attended 75 percent of the program failed to score 70 percent or higher on the posttest; and (4) 90 percent of the clients who entered the program did not attend at least 75 percent of the program. Clients who attended 75 percent of the program did appear to show greater improvement from pretest to posttest, satisfying the fifth objective, but lack of posttest data prevented statistical analysis. Recommendations for improvement include improving the retention of black male clients and recruiting more non-minority clients. Thirty-one tables of statistical data are appended. (FMW)

Private Industry Council of Franklin County
Job Training Partnership Act

FINAL EVALUATION REPORT
SUMMER ACADEMIC SKILLS ENHANCEMENT PROGRAM
1990

COLUMBUS PUBLIC SCHOOLS

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Private Industry Council of Franklin County
Job Training Partnership Act

FINAL EVALUATION REPORT
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Abstract

Program Description: The Summer Academic Skills Achievement Program was funded by the Private Industry Council (PIC) of Franklin County through the Job Training Partnership Act (JTPA). The purpose of the program was to provide JTPA clients with the reading comprehension and language mechanics skills required for employment into entry-level positions. A total of 160 curriculum hours were used toward this end.

Three selection criteria were used to define program eligibility: (a) JTPA eligible and PIC referred; (b) enrolled in a Columbus high school; and (c) demonstrated skill deficiency in reading, language, or mathematics. Clients accepted into the program used the Houghton-Mifflin New Directions in Reading curriculum, the Houghton-Mifflin "whole language" grammar and composition series, and the same publisher's mathematics curriculum Individualized Computational Skills Program and Essentials for High School Mathematics.

The 1990 program consisted of two segments: testing (May-June) and remediation (June-August). Performance objectives were stated for each of the two remediation foci: reading comprehension, language mechanics.

In addition to the two academic curricula addressed, pre-employment skills also were taught to clients. Using the MPC Educational Publishers' booklet Job Seeker's Guide, these skills were stressed as an integral part of each academic curriculum; i.e., employment skills instruction took place at scheduled times each week, where the instructional topic for the week was mandatory.

Project Evaluation Criteria.

Comprehensive Tests of Basic Skills (CTBS):

1. Clients who attend 75% of the program days will demonstrate a gain of at least one (1) grade equivalent from pretest to posttest in at least one of these areas: reading comprehension, language mechanics, mathematics computation.

2. On average, clients who attend 75% of the program days will improve objective-level mastery by 30% from pretest to posttest across instructional objectives in respective curricula.

3. Contrasted to those who do not, clients who attend at least 75% of the program days will attain objective-level mastery at a statistically-significant point, pretest to posttest.

Employment Skills (ES):

1. Of clients who attend at least 75% of the program days, 80% or more will score 70% or higher on the posttest.

Client Retention:

1. At least 90% of the clients pretested into the program will attend 75% of the program days.

Major Findings: One hundred twenty-three clients were enrolled into the 1990 Summer Program and analysis of pretest answer sheets yielded the following median grade-equivalent values: reading comprehension 5.7; language mechanics 4.5; mathematics computation 6.6. Following remediation, these median values were observed for 96 clients: reading comprehension 6.2 (+0.5); language mechanics 5.0 (+0.5); mathematics computation 6.7 (+0.1).

A client who attended 75% of the available attendance days (30 days minimum) increased the number of instructional objectives mastered (pretest-posttest) by 5%. Eighty-three clients met this attendance criterion. On pretesting of the 16 instructional objectives, the average number mastered was 24%. After treatment and posttesting, the average was 29% mastered. Over the eight-week remediation interval, clients' mastery of the 16 instructional objectives increased from less than four to between five and six.

Analysis of 1990 data was directed toward the five Project Evaluation Criteria stated in the proposal. The first three criteria relate to achievement testing with the CTBS instrument. Criterion Four examines Employment Skills measurement at posttesting, and the fifth criterion addresses Client Retention.

Criterion	Summary
1- 1.0 Grade Equivalent Increase (CTBS)	Eighty-three clients attended 30 or more days of instruction. Of these, 48 (58%) gained at least 1.0 GE on at least one of the three instructional areas. This level is comparable to that observed in 1989. The criterion that all pupils would show a gain of 1.0 on at least one measure was not achieved.
2- Improve Mastery by 30% (CTBS)	In 1989, a 25% increase was measured; i.e., a gain of about four mastered objectives, pretest to posttest. The gain in 1990 was 5%, or perhaps one mastered objective. In part, the 1990 observation is due to the impact of 32 clients who scored extremely low on the pretest. (This type of client was uncommon in the 1989 group.) These clients (all of whom met the 30-day-attendance criterion) mastered far fewer objectives at posttesting than did other clients who also met the attendance criterion. The criterion of 30% gain in objective mastered was not achieved.
3- Attendance and Gain (CTBS)	Although the lack of posttest data for many of those who attended less than 30 days of instruction (27 clients of 40 did not take the posttest) prevented statistical analysis as was planned, clients who attended 30 or more days scored higher on posttesting than did those who attended less than 30 days.
4- Posttest Success (ES)	Looking at clients who attended 30 or more days, 61 (73%) of the 83 possible met the 70% correct criterion. The criterion that 80% would score 70% or better was not achieved.

5- Client Retention

A total of 123 clients were pretested into either a Reading Comprehension or Language Mechanics program. Of these, 83 (67%) attended at least 30 days of instruction. The criterion that 90% would attend at least 30 days was not achieved.

From pretest to posttest, 96 clients were retained (took both tests). Forty-three percent of the pretest group were female; 57% were male; 10% were non-minority; 83% were black. At posttest, male attendance (male/black particularly) decreased such that the percents by sex were about equal. Retention of male blacks is an issue to be addressed in 1991.

Summary/Recommendations

Projection of Evaluation Criteria for the 1991 Summer Program assessment should be tempered by an appreciation of the clientele likely to attend. Grade equivalent analysis is appropriate for a cross-section of learning abilities/levels but mastery change may be misleading; e.g., a client can gain 1.0 GE without reaching mastery of an instructional objective.

Achievement gain in 1990 approximated that observed in 1989. But, certain areas tested with the CTBS suggest that additional emphasis might be given to objectives shown to exhibit little gain. For example, Main Idea (Objective 3, Reading Comprehension) appears to be a target for immediate examination (change in percent mastered from pretest to posttest was 1%). Some objectives seem to be receiving more emphasis than are others (change was in double digits).

Mastery, defined at the objective level as answering 75% of the available items per objective, was evaluated for two groups: special education and others. Lowest Pretest Achievement (LPA) students (N=32) demonstrated a net gain (posttest - pretest) of six objectives mastered. "Others" (N=51) had a net gain of 64 objectives mastered. It is clear that combining these two groups depressed the mastery-gain statistics reported for 1990. If LPA students are included in the 1991 Summer Program, revised evaluation criteria should be used. Overall, given the project clientele consideration should be given to judging the success of the program based on curricular objectives rather than objectives from a norm-referenced test.

If the program is to serve its target group of all economically disadvantaged JTPA eligible clients, recruitment of non-minority clients should be a program priority in 1991. Only 12 such clients were pretested with the CTBS instrument in 1990.

Correlation of demographic attendance, pretest and posttest data in 1990 was possible because a system for student identification was implemented. This system worked and data analysis could be used to contrast groups based on the 75% attendance criterion. These analyses are informative and the system should be retained for 1991

Client retention is crucial for improved achievement. Specifically, male/black clients have the highest attrition rate observed. That is, after pretesting a greater percent of male/blacks will leave the program prior to posttesting than for any other group. Increased attention needs to be given to these clients. Keeping all clients for the program's duration must be a goal for 1991.

Private Industry Council of Franklin County
Job Training Partnership Act

FINAL EVALUATION REPORT
SUMMER ACADEMIC SKILLS ENHANCEMENT PROGRAM
1990

Program Description

The 1990 Summer Program consisted of two distinct phases: testing and remediation. The testing phase was designed to identify youth eligible for the program; remediation strategies were adopted to maximize the potential for improving clients' content mastery in two instructional areas: reading comprehension (six objectives); (b) language mechanics (five objectives). The proposed Description of Services statement summarized these two phases as "Diagnostic Testing" and "Remedial Academic Training." Underlying the remediation phase was a singular goal: provide JTPA clients with the academic skills necessary for "employment into entry level positions."

Referral and Selection

The target group for this program was defined as "All economically disadvantaged JTPA eligible clients who have an interest in remedial/ Pre-Employment/work maturity training.

Three criteria were used to establish client eligibility:

1. JTPA-eligible and PIC referred;
2. enrolled in a Columbus high school; and
3. demonstrated skill deficiency in reading, language, or mathematics.

The selection process was initiated by a referral from the Private Industry Council (PIC). Referrals were tested and the Columbus Public Schools' Department of Community Education notified PIC regarding measurements per criterion three. PIC then indicated names to become clients.

A maximum of 500 PIC-identified youth were to be pretested. Of these, a maximum of 116 PIC-referred youth were to be selected to attend the eight-week remediation phase beginning in mid-June. The remediation phase was conducted at the North Education Center and emphasized prescriptive/individualized instructional strategies and materials.

Recruitment Methods: The Private Industry Council supplied (by way of the PIC-10 referral form) the Department of Community Education with the names of 161 eligible youth who were chosen or self-identified for participation in the Summer Academic Skills Enhancement Program ("Fast Track"). In April, the Department administered a CTBS battery to those youth. One hundred and twenty-three youth were selected by PIC for the "Fast Track" program. The department also assisted PIC officials with orientation and enrollment.

Testing

Commencing May 15, 1990, the Department of Community Education administered the Comprehensive Tests of Basic Skills (CTBS;1981), Form U, Level H reading comprehension, language mechanics, and mathematics computation subtests to 161 PIC-identified youth. The principal assessment activity for students enrolled in the Columbus City School District took place at students' home schools. For youth living outside the Columbus City School District or for youth referred after the testing period was closed, testing was administered by PIC personnel at a site designated by PIC management. The Department of Community Education supplied PIC staff with the test instruments and answer sheets.

The Department of Program Evaluation of the Columbus Public Schools scored completed tests and produced individual diagnostic reports and system summaries. All scores were norm-referenced. The Columbus evaluators used the TESTMATE microcomputer software system to scan, score, and report norm-referenced data.

The Department of Community Education, in concert with the Department of Program Evaluation selected Form U, Level H of the Comprehensive Tests of Basic Skills (third edition) as the most appropriate level of difficulty for the identified client group. The CTBS is a norm-referenced achievement test, the content categories of which were defined by examining current state and district curriculum guides, published texts and instructional programs, and criterion-referenced assessment instruments. Columbus evaluation professionals selected the reading comprehension, language mechanics, and mathematics computation subtests for administration to clients. Total time for actual testing was 93 minutes; test administration protocols added approximately 35 minutes to the testing session.

Reading. At the lowest levels, the reading comprehension test measures visual and sound recognition of letters, words, vowels, and consonants. Items measuring comprehension skills are related to sentences and stories. Reading comprehension items measure skills in understanding sentence meaning, passage details, character analysis, main ideas, generalization, written forms, and author techniques.

Language Mechanics. These items measure the student's ability to identify the correct use of capital letters, periods, commas, exclamation points, question marks, quotation marks, colons, semicolons in sentences and in extended passages.

Mathematics. The mathematics computation items measure the operations of addition, subtraction, multiplication, and division of decimals. Also, integers are covered.

Testing Methodology Used. The tests' designers used a three-parameter Item Response Theory to scale the CTBS and to develop norms. Application of IRT methodology provides a number of direct benefits to the user of CTBS U, including more accurate descriptions of client performance. Consultants from the educational community, represented by native American, Asian, Hispanic, and Black ethnic and cultural groups, reviewed all items for possible racial, ethnic, and gender bias. Consequently, the standardized instruments do not contain items that appeared statistically biased in item tryouts. In the standardization, the sample reflects ethnic minorities as they are represented in the general population.

Remediation

One hundred and twenty-three PIC-referred youth were enrolled in an eight-week summer prescriptive and individualized instructional program at the North Education Center as part of the Summer Youth Employment Training Program operated by the Private Industry Council. The instructional phase of the remedial program took place from June 18, 1990, until August 10, 1990. Those clients who successfully completed course work were eligible to receive 0.5 unit of academic credit for reading, 0.5 unit of academic credit for language arts, or 0.5 unit of academic credit for mathematics computation.

Clients attended daily classes in reading comprehension and language arts. Client instructional hours began at 8:10 a.m. and concluded at 11:50 a.m. Monday through Friday. (All training was delivered by instructors certificated by the State of Ohio.)

At the conclusion of the summer instructional phase, staff administered the CTBS (UH) to clients retained to that point. The Department of Program Evaluation analyzed data with appropriate statistical tests to determine whether the summer remedial treatment was effective in improving clients' basic academic skills.

The Department of Community Education chose instructional materials based on research findings that have correlated student learning with patterns of curriculum organization. Specifically, researchers discovered that highly structured instructional formats are most effective when working on basic skills competencies with lower achieving students. The following curricula were designed to achieve maximum mastery over a short time through rigorous instructional organization:

Reading Comprehension. The curriculum employed was Houghton-Mifflin's New Directions in Reading program, which has been designed as a reading comprehension achievement series for high school students who have not yet mastered reading comprehension skills. The three-part instructional plan consists of (a) preparation in vocabulary building, (b) enrichment of comprehension skills through guided reading, and (c) review and extension exercises to verify comprehension and provide skills reinforcement through immediate practice. The comprehension domain is the central focus of each instructional unit, and the curriculum stresses 10 comprehension skills: understanding punctuation, understanding word referents, using context to reveal word meanings, and to understand figurative language, noting important details, understanding sequence of events, recognizing the main idea of paragraphs, making inferences and drawing conclusions or predicting outcomes, understanding cause-effect relationships, understanding comparisons, and distinguishing between fact and opinion. In addition to quizzes for individual lessons, instructors administered both mid-level and end-of-level testing.

Language Mechanics. The language curriculum used Houghton-Mifflin's "whole language" grammar and composition series. This curriculum integrates grammar with reading and writing skills. Grammar units begin with the presentation of the basic lesson, and from that base they progress to vocabulary building activities. These activities are capped by exercises that assist students to make the crucial grammar-writing connection. Students then move to "checkup" activities that assess mastery levels attained. A cumulative review follows, which in turn is supplemented by enrichment work or differentiated additional practice (easy, average, or challenging). Reading and writing units commence with literature selections and are followed by activities that give students

practice in using the three modalities of literature response: listening, speaking, and thinking (inferring/drawing conclusions). Composition skills are taught through the five-step writing process: pre-writing, drafting, revising, proofreading, and publishing (final drafting). Students master spelling skills using Houghton-Mifflin's spelling program, which supports a complete testing program in standardized test format.

Employment Skills

The Department of Community Education also addressed the issue of improving clients' employment potential. Because many clients do not have the non-academic basic skills essential if one is to secure a position, instruction in this important area was continued in the 1990 Summer Program. The Job Seeker's Guide curriculum by MPC Educational Publishers was used. To be counted as a success for this program a client pretest score of less than 38 and a posttest of 38 or more were required.

Employment skills were taught as an integral part of both academic curricula: (a) reading comprehension and (b) language mechanics. So, no matter which particular academic curriculum a client entered, employment skills also were emphasized. The objective was to improve job readiness of clients by improving pre-employment skills. A segment of instructional time in each class was alloted each week during which the instructor covered a specific employment-skills topic. These topics were covered during the remediation phase of the program:

1. Determining Your Strengths
2. Professional Development and Your Personal Qualities
3. Begin Your Job Search
4. Your Social Security Card and Other Preparation
5. Locating Job Possibilities
6. How to Prepare Resumes and Application Forms
7. Telephoning for an Interview
8. Understanding Application Forms and Dealing with Problems
9. Filling out Application Forms
10. Planning a Successful Interview
11. Job Applicant Rating Form
12. Performance and Success on the Job

Evaluation Design

Pretesting of program candidates was used to discern skills deficiencies and to constitute the final of three eligibility tests. Candidates who became program clients were then guided through the remediation phase as described above. Clients who completed the eight-week instructional program were then posttested to reveal pre/posttest change with respect to reading comprehension, language mechanics, and mathematics computation observed scores.

Because the Summer 1989 Program evaluation design could not be implemented due to a student ID number problem, this year care was taken to standardize the number-assignment process. The Department of Program Evaluation (DPE) pre-printed CTBS answer forms and prepared lists of students who were pretested for use by the summer Program Coordinator. Summer 1990 program personnel used these lists to code student numbers on all forms returned to the DPE for analysis. Thus, it was possible this year to conduct analysis as intended, analyses based on attendance.

Five Project Evaluation Criteria were investigated, three regarding achievement data (CTBS) and one each regarding Employment Skills (ES) and Client Retention.

CTBS:

1. Clients who attend 75% of the program days will demonstrate a gain of at least one (1) grade equivalent from pretest to posttest in at least one of these areas: reading comprehension, language mechanics, mathematics computation.

2. On average, clients who attend 75% of the program days will improve objective-level mastery by 30% from pretest to posttest across instructional objectives in respective curricula.

3. Contrasted to those who do not, clients who attend at least 75% of the program days will attain objective-level mastery at a statistically-significant point, pretest to posttest.

Employment Skills:

1. Of clients who attend at least 75% of the program days, 80% or more will score 70% or higher on the posttest.

Client Retention:

1. At least 90% of the clients pretested into the program will attend 75% of the program days.

One hundred sixty-one prospective clients were pretested with the CTBS. One hundred twenty-three ES pretest forms were administered. Ninety-two CTBS posttest forms and 94 ES posttest forms were administered. Demographic and attendance data were recorded on revised PCF forms for all youth pretested with the CTBS. File folder reports for all 161 youth were computer-generated by the Department of Program Evaluation. These reports were customized to include demographic/attendance data and the results of each test taken by the pupil, even though a pupil might not have been determined eligible for service.

Achievement data were scanned and scored using TESTMATE computer software. Employment skills data were scanned and scored using SCANTOOLS computer software. Demographic and attendance data were encoded by this consultant. Preliminary reports to program administration were provided each time new data were added to the datasets. These analyses were conducted using an IBM PS/2 Model 80. This hardware and SPSS/PC+ were used to analyze both CTBS and ES data, in terms of grade-equivalent change.

At CTBS pretesting, 69 (43%) were female and 92 (57%) were male. Regarding ethnicity, 12 (10%) were non-minority, 102 (83%) black, one (1%) Spanish surname, and eight (7%) were Asian (only 123 forms included ethnic-group identification).

At CTBS posttesting, including the 75% attendance requirement (30 out of 39 days), the sex ratio changed markedly. Eighty-three clients attended at least 30 days of instruction. Females (41, 49%) about equaled males (42, 51%); 28 females did not meet the attendance criterion while 50 males attended less than 30 days of instruction.

Clients were enrolled into one of two programs: reading comprehension, language mechanics. The 123 enrolled clients were split 85 into the reading comprehension program and 38 into the language mechanics program.

Major Findings

The 123 clients entered into programs were diverse regarding sex, race, and ability. Forty-two percent (52) were female, 58% (71) were male. Eighty-three percent (102) were black. Twelve were non-minority; one Spanish surname, eight Asian. Thirty-eight percent (47) were black females and 45% (55) were black males.

At posttesting, 83 clients met the 30 day criterion: 41 (49%) female and 42 (51%) male. Seventy black clients remained: 37 (45%) female and 33 (40%) male.

Forty clients in the 1990 Summer Program did not meet the attendance criterion: 11 (27.5%) female and 29 (72.5%) male. About 25% of this group was black/female (10); about 55% was black/male (22).

Based on CTBS pretest scores, 46 of these 123 clients were classified into a group called "Lowest Pretest Achievement" (LPA). These clients scored at about the 4.0 GE point on Reading Comprehension. Of these 46 clients, 32 were retained (attended 30 or more days of instruction). That is, of the 83 total clients carried forward to the analysis stage, almost 39% of the evaluation sample was LPA. A documented comparison statistic from 1989 is not available; the Program Coordinator reported to the program evaluation consultant that there were at least twice as many LPA clients this year as in 1989. For this reason, certain data analyses reported below were partitioned into "Regular" and "LPA" subsets to clarify the "change" or "gain" values observed.

Achievement Testing Results (CTBS)

CTBS Evaluation Question:

> Clients who attend 75% of the program days will demonstrate a gain of at least one (1) grade equivalent from pretest to posttest in at least one of these areas: reading comprehension, language mechanics, mathematics computation.

To be included in this analysis, a client attended 30 days of instruction. Of the 83 clients who met this requirement, 48 (58%) gained at least one GE in at least one of the three possible areas. And, these 48 clients actually met the GE criterion (at least 1.0) 68 times: reading comprehension 26, language mechanics 22, mathematics computation 20. Average grade-equivalent gain was +0.6 for reading comprehension, +0.6 for language mechanics, and +0.2 for mathematics computation. The criterion for this evaluation question was not achieved.

In contrast, clients attending less than 30 days rarely met the criterion. Only three clients gained at least 1.0 in reading comprehension, one in language mechanics, and one in mathematics computation. Moreover, in each instance the client attended between 26-28 days of instruction. Tables 1-6 present data for pupils tested who attended at least 30 days of instruction.

The Wide Range Achievement Test (WRAT R2), was administered to the two LPA classes. Since the CTBS measures from grade equivalent four, the WRAT R2, which measures from grade equivalent three was used to obtain a progress measure for the lowest achievement levels. A pre-post WRAT R2 test comparison involving 35 students showed that 30 students netted a gain of at least a 0.5 grade level in either reading, spelling or arithmetic. Sixteen students achieved a 0.5 grade level advancement in at least two of the three above mentioned areas. Twenty-six students at this level achieved grade level advances of 1.0 to 6.0.*

CTBS Evaluation Question:

> On average, clients who attend 75% of the program days will improve objective level mastery by 30% from pretest to posttest across instructional objectives in respective curricula.

Data for this evaluation question are summarized as Table 7. Note that this table is not directly comparable to Table 1 in the 1989 report; the 1989 table included all clients either/both pre- and posttested. Table 7 includes only clients who met the 30-or-more-days-attendance criterion.

"Mastery" refers to the proportion of clients who successfully answer questions regarding a particular instructional objective. Scoring of items results in assigning to each client, a "+" if the objective was mastered, a "P" if partially mastered, or a "-" if the objective was not mastered. Then, dividing the number of "mastered" by the total respondents for that objective yields the proportions in Table 7.

A client who attended 75% of the available attendance days (30 days minimum) increased the number of instructional objectives mastered (pretest-posttest) by 5%. Eighty-three clients met this attendance criterion. On pretesting of the 16 instructional objectives, the average number mastered was 24%. After treatment and posttesting, the average was 29% mastered. Over the eight-week remediation interval, clients' mastery of the 16 instructional objectives increased from less than four to between five and six.

The change increment of 30%--on average--was not reached in 1990. The average change observed for 1990 was +5%; i.e., across the 16 achievement objectives, the average was a 5% increase from pretest to posttest.

Writing Techniques improved from 22% mastery to 34%, representing the greatest positive change observed. Beginning Work/Titles, on the other hand, decreased from 24% to 20%, a net loss of 4% mastery. Fourteen objectives improved while two objectives had posttest percents-mastered less than on pretesting.

*WRAT information was provided by the 1990 Summer Program Coordinator.

CTBS Evaluation Question:

> Contrasted to those who do not, clients who attend at least 75% of the program days will attain objective-level mastery at a statistically significant point, pretest to posttest.

Table 8 presents the contrast (to Table 7) group. Clients included in Table 8 attended less than the required 30 days of instruction needed to meet the 75% attendance criterion. Note that 27 of the 40 clients in this attendance group did not take the CTBS posttest. Thus, only 13 clients actually are included in Table 8. The 13 clients who did take the posttest averaged more than 20 days of attendance. Results from such low-frequency analysis are to be interpreted with care.

The intent was to evaluate "mastery change" for two groups: <30 days attendance (A), ≥30 days attendance (B). The null hypothesis was that the proportion attaining mastery at posttest time for A would be lower (significant at the 0.05 level) than that for B. That is, for example, given 10 in each group at pretest with no mastery in either group, at posttest A might have 3 mastery while B would have 6. Underlying the evaluation question is the assumption that one would be unlikely to attain mastery of any objective without attending instructional sessions. Or, the more sessions attended the more likely that posttest mastery could be realized.

However, after careful consideration of posttest data for the <30 days group, use of this information for statistical purposes was rejected. The reason for rejection was the small number (13) of clients who completed the posttest. Preliminary non-parametric tests using this group contrasted with the ≥30 day group produced data of questionable stability. Thus, use of this group for further analysis did not appear to be productive.

Therefore, attention was given to the 83 clients who attended 30 or more days of instruction. Tables 9-24 display analysis information for each of the 16 instructional objectives. These tables are in the same objective order as are Tables 7 and 8. "RC1" is the descriptor for Reading Comprehension, Objective 1 (Passage Details)-pretest. "PRC1" is the descriptor for the same objective-posttest.

Columns/rows labeled "+" indicate mastery. So, using Table 9, 16 clients mastered Passage Details on both the pretest and the posttest. Twelve clients who did not master this objective on the pretest did master it at posttest. On the other hand, eight clients who mastered Passage Details on pretest failed to obtain mastery on posttest. Therefore, a net gain of four clients was realized. A summary of these data is reported as Table 25. Clearly, regarding improved mastery counts, the major achievement gains were in the areas of Writing Techniques, Quotation Marks and Adds Decimals or Fractions.

But, consider Tables 26 and 27. Here, data from Table 25 is split to show the effect of the LPA group (N=32) on "change" in Table 25. Clearly, any report of mastery using Table 25 data for this Evaluation Question is seriously biased by the LPA effect. That is, most change reported in Table 25 is attributable to the non-LPA group. Mastery, as a concept, is not a good change indicator for the LPA group.

ES Evaluation Question:

> Of clients who attend at least 75% of the program days, 80% or more will score 70% or higher on the posttest.

Tables 26-29 summarize Employment Skills (ES) pre/posttest. Tables 26 and 27 report distributions for all clients taking the test, if accepted into the program. Tables 28 and 29 report ES pre- and posttest values. Tables 26 and 27 are for all 123 students entered into a program; Tables 28 and 29 are for clients in the program who attended at least 30 program days.

To meet the criterion a client had to score a 38 or more on the ES posttest. From Table 29 it can be observed that 61 clients met or exceeded this value on posttesting, among those who attended 30 or more days of instruction. This number--61--represents 73% of the 83 possible. Thus, the criterion for this evaluation question was not achieved. The average pretest and posttest scores for clients who met the attendance criterion were 32.9 and 40.3 respectively.

Compare Tables 27 and 29. Note that the full range of scores represented by the 123 clients in Table 27 also appears in Table 29. That is, there does not seem to be the same attendance factor operating with ES as was observed for CTBS.

Client Retention Evaluation Question:

> At least 90% of the clients pretested into the program will attend 75% of the program days.

Of the 123 clients pretested into one of the two instructional programs, 40 (38%) failed to attend the minimum of 30 or more days attendance). About all clients would have to have been retained to meet the criterion.

Although the 90% level was not reached during the 1990 Summer Program, achievement results are similar to those observed in 1989. Taken as a whole, recognizing that it was not possible--in 1989--to evaluate achievement with respect to attendance, 1990 grade-equivalent "gain" does not seem appreciably at variance with observations from 1989. However, the 90% criterion seems worthwhile to retain for use in 1991. As a goal to strive for, this criterion--if attained--would indicate that most of the clients accepted into the program have a good chance of realizing success regarding the achievement criterion.

Summary/Recommendations

The 1990 Summer Program in several ways replicated findings similar to those reported in 1989. Clearly, achievement progress during the eight-week instructional period is dependent to a large extent on attendance. Clients whose attendance is less than the 75% criterion are unlikely to succeed (have at least one GE gain of 1.0 or more). Although, it is not unusual for clients who attend more than just a few days to demonstrate "gain" on one or more of the measurements; a gain of 1.0 or more for clients attending less than 30 days is rare.

Twenty clients met the GE criterion on mathematics computation. Since no specific program of this type was offered during the 1990 Summer Program, it is reasonable to suggest that transfer of reading skills may have played a role in this regard. Or, positive gain may be due to an improved attitude toward knowledge acquisition in general.

The picture is not so clear regarding Employment Skills improvement. While "gain" was observed, the relationship with attendance was by no means as remarkable as that between attendance and achievement gain. This evaluation issue did not reach the 80% level but 73% of the clients did score above the criterion level.

It is important to clarify the evaluation philosophy/methodology to be followed for analysis of the 1991 Summer Program. Clarification is needed to avoid the Lowest Achievement Group (LPA) problem identified this year. That is, about four of every 10 clients in 1990 were LPA clients. Assessment in terms of norm-referenced testing of LPA clients (a) is not recommended and (b) insures that evaluation criteria stated with non-LPA clients in mind probably will fail to reveal programmatic gain. Two groups, LPA and Regular, should be analyzed, using evaluation criteria written for and appropriate to respective groups.

Client retention did not meet the criterion. This is an important factor in achievement gain and increased emphasis should be given to promoting the retention factor. For those retained in the program, achievement results were impressive. Exactly what percent represents a realistic retention level is yet to be determined. Comparison with similar Summer Programs elsewhere should be used to assess the 90% value used for the present program's evaluation.

Client retention is weakest for male/black clients. Of the 102 blacks enrolled, 47 were female and 55 were male. At posttest time, adding in the 30-day retention factor, 70 black clients remained, 37 female and 33 male. That is, female/black retention was 79% and male/black retention was 60%, among blacks pretested into either reading comprehension or language mechanics.

Participation in the 1990 Summer Program was heavily weighted toward black clients. Only 12 non-minority clients were pretested/enrolled into a program; i.e., less than 10% of all enrolled clients were non-minorities. Additional effort should be made to recruit non-minority clients for the 1991 Summer Program. This recruitment effort would aid the project in serving its target population, i.e., all economically disadvantaged JTPA eligible clients interested in project services.

Observing achievement change with respect to attendance patterns is fruitful. It is recommended that subsequent assessments of PIC Summer Programs focus on this issue, that client retention be afforded additional emphasis, particularly regarding male/black clients. It is well understood that predictable learning can and does take place for clients who attend most of the total instructional days available.

Reference

CTB/McGraw-Hill Staffwriters. Comprehensive Tests of Basis Skills. Monterey, California: CTB/McGraw-Hill, 1981.

Table 1

Pretest Reading Comprehension
Clients Attending 30 or More Days
Grade-Equivalent Distribution
1990 PIC Summer Program

G.E. Value	Frequency	Percent	Cumulative Percent
4.0	16	19.5	19.5
4.3	4	4.9	24.4
4.7	3	3.7	28.0
4.9	6	7.3	35.4
5.0	1	1.2	36.6
5.2	2	2.4	39.0
5.3	2	2.4	41.5
5.4	2	2.4	43.9
5.6	3	3.7	47.6
5.7	2	2.4	50.0
6.0	2	2.4	52.4
6.2	4	4.9	57.3
6.5	5	6.1	63.4
6.9	1	1.2	64.6
7.3	4	4.9	69.5
7.7	1	1.2	70.7
8.1	3	3.7	74.4
8.3	4	4.9	79.3
8.5	1	1.2	80.5
8.7	2	2.4	82.9
8.9	2	2.4	85.4
9.1	2	2.4	87.8
9.3	1	1.2	89.0
9.6	1	1.2	90.2
9.9	3	3.7	93.9
10.5	2	2.4	96.3
12.9	3	3.7	100.0
.	1	Missing	
Total	83	100.0	

Table 2

Posttest Reading Comprehension
Clients Attending 30 or More Days
Grade-Equivalent Distribution
1990 PIC Summer Program

G.E. Value	Frequency	Percent	Cumulative Percent
4.0	13	15.9	15.9
4.3	5	6.1	22.0
4.6	2	2.4	24.4
4.9	2	2.4	26.8
5.0	1	1.2	28.0
5.2	7	8.5	36.6
5.3	1	1.2	37.8
5.4	2	2.4	40.2
5.6	3	3.7	43.9
5.7	2	2.4	46.3
5.8	2	2.4	48.8
6.0	1	1.2	50.0
6.2	1	1.2	51.2
6.5	1	1.2	52.4
6.9	7	8.5	61.0
7.	1	1.2	62.2
8.1	2	2.4	64.6
8.3	3	3.7	68.3
8.5	1	1.2	69.5
8.7	3	3.7	73.2
8.9	3	3.7	76.8
9.1	1	1.2	78.0
9.3	3	3.7	81.7
9.6	3	3.7	85 4
9.9	4	4.9	90.2
10.5	1	1.2	91.5
12.2	1	1.2	92.7
12.9	6	7.3	100.0
.	1	MISSING	
Total	83	100.0	

Table 3

Pretest Language Mechanics
Clients Attending 30 or More Days
Grade-Equivalent Distribution
1990 PIC Summer Program

G.E. Value	Frequency	Percent	Cumulative Percent
4.0	31	38.3	38.3
4.3	5	6.2	44.4
4.5	2	2.5	46.9
4.8	5	6.2	53.1
5.0	3	3.7	56.8
5.3	4	4.9	61.7
5.6	3	3.7	65.4
6.1	5	6.2	71.6
6.7	5	6.2	77.8
7.3	3	3.7	81.5
7.9	2	2.5	84.0
8.4	1	1.2	85.2
9.0	1	1.2	86.4
9.5	4	4.9	91.4
10.1	1	1.2	92.6
10.8	2	2.5	95.1
11.8	1	1.2	96.3
12.9	3	3.7	100.0
.	2	MISSING	
Total	83	100.0	

Table 4

Posttest Language Mechanics
Clients Attending 30 or More Days
Grade-Equivalent Distribution
1990 PIC Summer Program

G.E. Value	Frequency	Percent	Cumulative Percent
4.0	26	31.7	31.7
4.3	6	7.3	39.0
4.5	1	1.2	40.2
4.8	5	6.1	46.3
5.0	4	4.9	51.2
5.3	4	4.9	56.1
5.6	2	2.4	58.5
6.1	7	8.5	67.1
6.7	4	4.9	72.0
7.3	3	3.7	75.6
7.9	2	2.4	78.0
9.0	2	2.4	80.5
9.5	4	4.9	85.4
10.1	2	2.4	87.8
10.8	4	4.9	92.7
11.8	3	3.7	96.3
12.9	3	3.7	100.0
.	1	MISSING	
Total	83	100.0	

Table 5

Pretest Mathematics Computation
Clients Attending 30 or More Days
Grade-Equivalent Distribution
1990 PIC Summer Program

G.E. Value	Frequency	Percent	Cumulative Percent
4.3	7	8.6	8.6
4.6	8	9.9	18.5
5.0	3	3.7	22.2
5.4	7	8.6	30.9
5.8	3	3.7	34.6
6.1	4	4.9	39.5
6.4	5	6.2	45.7
6.6	7	8.6	54.3
6.8	5	6.2	60.5
7.0	1	1.2	61.7
7.2	1	1.2	63.0
7.3	6	7.4	70.4
7.4	1	1.2	71.6
7.5	2	2.5	74.1
7.7	1	1.2	75.3
8.0	1	1.2	76.5
8.1	2	2.5	79.0
8.2	1	1.2	80.2
8.3	4	4.9	85.2
8.5	2	2.5	87.7
8.7	3	3.7	91.4
8.9	2	2.5	93.8
10.3	2	2.5	96.3
11.1	1	1.2	97.5
11.7	2	2.5	100.0
.	2	MISSING	
Total	83	100.0	

Table 6

Posttest Mathematics Computation
Clients Attending 30 or More Days
Grade-Equivalent Distribution
1990 PIC Summer Program

G.E. Value	Frequency	Percent	Cumulative Percent
4.3	13	15.7	15.7
4.6	4	4.8	20.5
5.0	4	4.8	25.3
5.4	1	1.2	26.5
5.8	1	1.2	27.7
6.1	5	6.0	33.7
6.4	6	7.2	41.0
6.6	6	7.2	48.2
7.0	2	2.4	50.6
7.2	4	4.8	55.4
7.3	2	2.4	57.8
7.4	6	7.2	65.1
7.5	2	2.4	67.5
7.7	1	1.2	68.7
7.8	1	1.2	69.9
8.0	2	2.4	72.3
8.1	1	1.2	73.5
8.2	5	6.0	79.5
8.3	4	4.8	84.3
8.7	3	3.6	88.0
8.9	2	2.4	90.4
9.3	1	1.2	91.6
9.6	1	1.2	92.8
10.3	1	1.2	94.0
11.1	1	1.2	95.2
11.7	3	3.6	98.8
12.5	1	1.2	100.0
Total	83	100.0	

Table 7

Percent of Objectives Mastered
Attended 30 or More Days
CTBS Form U, Level H
1990 PIC Summer Program

Content Area	Test/Objective	Percent Mastered Pretest	Posttest	Change
Reading	Comprehension			
	Passage Details	29	35	6
	Character Analysis	33	39	6
	Main Idea	39	40	1
	Generalizations	46	48	2
	Written Forms	18	24	6
	Writing Techniques	22	34	12
	Subtest Average	32	37	5
Language	Mechanics			
	Pronoun/Noun/Adjectives	33	38	5
	Beginning Words/Titles	24	20	-4
	Period/Question Mark Exclamation Point/Comma	7	11	4
	Quotation Marks	31	44	13
	Editing Skills	26	34	8
	Subtest Average	24	29	5
Mathematics	Computation			
	Adds Decimals or Fractions	21	31	10
	Subtracts Decimals or Fractions	25	25	0
	Multiply Decimals or Fractions	10	15	5
	Divide Decimals or Fractions	4	6	2
	Integers	21	18	-3
	Subtest Average	16	19	3
	Total Test Average =	24	29	5
	N =	83	83	

Table 8

Percent of Objectives Mastered
Attended Less Than 30 Days, Both Pretest and Posttest
CTBS Form U, Level H
1990 PIC Summer Program

Content Area	Test/Objective	Percent Mastered Pretest	Posttest	Change
Reading	Comprehension			
	Passage Details	8	39	31
	Character Analysis	31	23	-8
	Main Idea	31	69	38
	Generalizations	39	69	30
	Written Forms	0	8	8
	Writing Techniques	15	15	0
	Subtest Average	21	37	17
Language	Mechanics			
	Pronoun/Noun/Adjectives	31	39	8
	Beginning Words/Titles	23	8	-15
	Period/Question Mark Exclamation Point/Comma	15	15	0
	Quotation Marks	23	31	8
	Editing Skills	23	23	0
	Subtest Average	23	23	0
Mathematics	Computation			
	Adds Decimals or Fractions	8	23	15
	Subtracts Decimals or Fractions	8	15	7
	Multiply Decimals or Fractions	15	15	0
	Divide Decimals or Fractions	8	0	-8
	Integers	15	0	-15
	Subtest Average	11	11	0
	Total Test Average =	18	25	6
	N* =	13	13	

*Since these 13 clients--for the most part--did attend nearly as many days of instruction as did the 83 clients represented in Table 7, it is not surprising that these posttest percent-mastery values are what they are. Moreover, given only 13 respondents here, these data should be interpreted knowingly; a group of 80-100 respondents might or might not appear similar regarding posttest scores.

1990 PIC Summer Program

Objective Mastery-Change Summary

Clients Who Attended at Least 30 Days

TABLE OF RC1 BY PRC1

RC1(Passage Details (pretest))
PRC1(Passage Details (posttest))

Frequency Percent Row Pct Col Pct	+	0	Total
+	16 19.75 66.67 57.14	8 9.88 33.33 15.09	24 29.63
0	12 14.81 21.05 42.86	45 55.56 78.95 84.91	57 70.37
Total	28 34.57	53 65.43	81 100.00

Frequency Missing - 2

STATISTICS FOR TABLE OF RC1 BY PRC1

Statistic	DF	Value	Prob
Chi-Square	1	15.536	0.000
Likelihood Ratio Chi-Square	1	15.223	0.000
Continuity Adj. Chi-Square	1	13.585	0.000
Mantel-Haenszel Chi-Square	1	15.344	0.000
Fisher's Exact Test (Left)			1.000
(Right)			1.33E-04
(2-Tail)			2.72E-04
Phi Coefficient		0.438	
Contingency Coefficient		0.401	
Cramer's V		0.438	

Effective Sample Size - 81
Frequency Missing = 2

Table 9

1990 PIC Summer Program

Objective Mastery-Change Summary

Clients Who Attended at least 30 Days

TABLE OF RC2 BY PRC2

RC2(Character Analysis (pretest))
PRC2(Character Analysis (posttest))

Frequency Percent Row Pct Col Pct	+	10	Total
+	19 23.46 70.37 59.38	8 9.88 29.63 16.33	27 33.33
0	13 16.05 24.07 40.63	41 50.62 75.93 83.67	54 66.67
Total	32 39.51	49 60.49	81 100.00

Frequency Missing = 2

STATISTICS FOR TABLE OF RC2 BY PRC2

Statistic	Df	Value	Prob
Chi-Square	1	16.143	0.000
Likelihood Ratio Chi-Square	1	16.271	0.000
Continuity Adj. Chi-Square	1	14.264	0.000
Mantel-Haenszel Chi Square	1	15.948	0.000
Fisher's Exact Test (Left)			1.000
(Right)			7.12E-05
(2-Tail)			9.16E-05
Phi Coefficient		0.446	
Contingency Coefficient		0.408	
Cramer's V		0.446	

Effective Sample Size = 81
Frequency Missing = 2

Table 10

Objective Mastery-Change Summary

Event who Attended at least 30 Da

TABLE OF RC3 BY PRC3

RC3(Main Idea (pretest))
PRC3(Main Idea (posttest))

Frequency Percent Row Pct Col Pct	10	Total
+	21 25.93 65.63 63.64	11 13.58 34.38 22.92	32 39.51
0	12 14.81 24.49 36.36	37 45.68 75.51 77.08	49 60.49
Total	33 40.74	48 59.26	81 100.00

Frequency Missing = 2

STATISTICS FOR TABLE OF RC3 BY PRC3

Statistic	DF	Value	Prob
Chi-Square	1	13.568	0.000
Likelihood Ratio Chi-Square	1	13.760	0.000
Continuity Adj. Chi-Square	1	11.917	0.001
Mantel-Haenszel Chi-Square	1	13.400	0.000
Fisher's Exact Test (Left)			1.000
(Right)			2.61E-04
2-Tail)			4.28E-04
Phi Coefficient		0.409	
Contingency Coefficient		0.379	
Cramer's V		0.409	

Effective Sample Size = 81
Frequency Missing = 2

Table 11

1990 PIC Summer Program

Objective Mastery-Change Summary

Clients Who Attended at Least 30 Days

TABLE OF RC4 BY PRC4

RC4(Generalizations (pretest))
PRC4(Generalizations (posttest))

Frequency Percent Row Pct Col Pct	+	0	Total
+	28 34.57 73.68 71.79	10 12.35 26.32 23.81	38 46.91
0	11 13.58 25.58 28.21	32 39.51 74.42 76.19	43 53.09
Total	39 48.15	42 51.85	81 100.00

Frequency Missing = 2

STATISTICS FOR TABLE OF RC4 BY PRC4

Statistic	DF	Value	Prob
Chi-Square	1	18.697	0.000
Likelihood Ratio Chi-Square	1	19.475	0.000
Continuity Adj. Chi-Square	1	16.820	0.000
Mantel-Haenszel Chi-Square	1	18.466	0.000
Fisher's Exact Test (Left)			1.000
(Right)			1.51E-05
(2-Tail)			1.92E-05
Phi Coefficient		0.480	
Contingency Coefficient		0.433	
Cramer's V		0.480	

Effective Sample Size = 81
Frequency Missing = 2

Table 12

1990 PIC Summer Program

Objective Mastery-Change Summary

Clients Who Attended at Least 30 Days

TABLE OF RC5 BY PRC5

RC5(Written Forms (pretest))
PRC5(Written Forms (posttest))

Frequency / Percent / Row Pct / Col Pct	+	0	Total
+	11 13.58 73.33 55.00	4 4.94 26.67 6.56	15 18.52
0	9 11.11 13.64 45.00	57 70.37 86.36 93.44	66 81.48
Total	20 24.69	61 75.31	81 100.00

Frequency Missing = 2

STATISTICS FOR TABLE OF RC5 BY PRC5

Statistic	DF	Value	Prob
Chi-Square	1	23.424	0.000
Likelihood Ratio Chi-Square	1	20.571	0.000
Continuity Adj. Chi-Square	1	20.324	0.000
Mantel-Haenszel Chi-Square	1	23.135	0.000
Fisher's Exact Test (Left)			1.000
(Right)			1.13E-05
(2-Tail)			1.13E-05
Phi Coefficient		0.538	
Contingency Coefficient		0.474	
Cramer's V		0.538	

Effective Sample Size = 81
Frequency Missing = 2
WARNING: 25% of the cells have expected counts less than 5. Chi-Square may not be a valid test.

Table 13

1990 PIC Summer Program

Objective Mastery-Change Summary

Clients Who Attended at least 30 Days

TABLE OF RC6 BY PRC6

RC6(Writing Techniques (pretest))
PRC6(Writing Techniques (posttest))

Frequency Percent Row Pct Col Pct	+ 	0 	Total
+	15 18.52 83.33 53.57	3 3.70 16.67 5.66	18 22.22
0	13 16.05 20.63 46.43	50 61.73 79.37 94.34	63 77.78
Total	28 34.57	53 65.43	81 100.00

Frequency Missing = 2

STATISTICS FOR TABLE OF RC6 BY PRC6

Statistic	DF	Value	Prob
Chi-Square	1	24.332	0.000
Likelihood Ratio Chi-Square	1	24.082	0.000
Continuity Adj. Chi-Square	1	21.639	0.000
Mantel-Haenszel Chi-Square	1	24.032	0.000
Fisher's Exact Test (Left)			1.000
(Right)			2.01E-06
(2-Tail)			2.01E-06
Phi Coefficient		0.548	
Contingency Coefficient		0.481	
Cramer's V		0.548	

Effective Sample Size = 81
Frequency Missing = 2

Table 14

1990 PIC Summer Program

Objective Mastery-Change Summary

Clients Who Attended at Least 30 Days

TABLE OF LM1 BY PLM1

LM1(Pronoun/Noun/Adjectives (pretest))
PLM1(Pronoun/Noun/Adjectives (posttest))

Frequency Percent Row Pct Col Pct	+	10	Total
+	22	5	27
	27.50	6.25	33.75
	81.48	18.52	
	70.97	10.20	
0	9	44	53
	11.25	55.00	66.25
	16.98	83.02	
	29.03	89.80	
Total	31	49	80
	38.75	61.25	100.00

Frequency Missing = 3

STATISTICS FOR TABLE OF LM1 BY PLM1

Statistic	DF	Value	Prob
Chi-Square	1	31.354	0.000
Likelihood Ratio Chi-Square	1	32.652	0.000
Continuity Adj. Chi-Square	1	28.696	0.000
Mantel-Haenszel Chi-Square	1	30.962	0.000
Fisher's Exact Test (Left)			1.000
(Right)			2.61E-08
(2-Tail)			2.61E-08
Phi Coefficient		0.626	
Contingency Coefficient		0.531	
Cramer's V		0.626	

Effective Sample Size = 80
Frequency Missing = 3

Table 15

Objective Mastery-Change Summary

Clients Who Attended at Least 30 Days

TABLE OF LM2 BY PLM2

LM2(Beginning Words/Titles (pretest))
PLM2(Beginning Words/Titles (posttest))

Frequency Percent Row Pct Col Pct	+	0	Total
+	10 12.50 52.63 62.50	9 11.25 47.37 14.06	19 23.75
0	6 7.50 9.84 37.50	55 68.75 90.16 85.94	61 76.25
Total	16 20.00	64 80.00	80 100.00

Frequency Missing = 3

STATISTICS FOR TABLE OF LM2 BY PLM2

Statistic	DF	Value	Prob
Chi-Square	1	16.583	0.000
Likelihood Ratio Chi-Square	1	14.559	0.000
Continuity Adj. Chi-Square	1	14.016	0.000
Mantel-Haenszel Chi-Square	1	16.376	0.000
Fisher's Exact Test (Left)			1.000
(Right)			2.08E-04
(2-Tail)			2.08E-04
Phi Coefficient		0.455	
Contingency Coefficient		0.414	
Cramer's V		0.455	

Effective Sample Size = 80
Frequency Missing = 3
WARNING: 25% of the cells have expected counts less than 5. Chi-Square may not be a valid test.

Table 16

Objective Mastery-Change Summary

Clients Who Attended at Least 30 Days

TABLE OF LM3 BY PLM3

LM3(Period/Question Mark/E. Point (pretest))
PLM3(Period/Question Mark/E. Point (posttest))

Frequency Percent Row Pct Col Pct	+	0	Total
+	6 7.50 100.00 66.67	0 0.00 0.00	6 7.50
0	3 3.75 4.05 33.33	71 88.75 95.95 100.00	74 92.50
Total	9 11.25	71 88.75	80 100.00

Frequency Missing = 3

STATISTICS FOR TABLE OF LM3 BY PLM3

Statistic	DF	Value	Prob
Chi-Square	1	51.171	0.000
Likelihood Ratio Chi-Square	1	31.164	0.000
Continuity Adj. Chi-Square	1	42.013	0.000
Mantel-Haenszel Chi-Square	1	50.532	0.000
Fisher's Exact Test (Left)			1.000
(Right)			2.80E-07
(2-Tail)			2.80E-07
Phi Coefficient		0.800	
Contingency Coefficient		0.625	
Cramer's V		0.800	

Effective Sample Size = 80
Frequency Missing = 3
WARNING: 25% of the cells have expected counts less than 5. Chi-Square may not be a valid test.

Table 17

1990 PIC Summer Program

Objective Mastery-Change Summary

Clients Who Attended at least 30 Days

TABLE OF LM4 BY PLM4

LM4(Quotation Marks (pretest))
PLM4(Quotation Marks (posttest))

Frequency Percent Row Pct Col Pct	+	0	Total
+	20 25.00 80.00 55.56	5 6.25 20.00 11.36	25 31.25
0	16 20.00 29.09 44.44	39 48.75 70.91 88.64	55 68.75
Total	36 45.00	44 55.00	80 100.00

Frequency Missing = 3

STATISTICS FOR TABLE OF LM4 BY PLM4

Statistic	DF	Value	Prob
Chi-Square	1	17.998	0.000
Likelihood Ratio Chi-Square	1	18.756	0.000
Continuity Adj. Chi-Square	1	16.000	0.000
Mantel-Haenszel Chi-Square	1	17.773	0.000
Fisher's Exact Test (Left)			1.000
(Right)			2.41E-05
(2-Tail)			2.77E-05
Phi Coefficient		0.474	
Contingency Coefficient		0.429	
Cramer's V		0.474	

Effective Sample Size = 80
Frequency Missing = 3

Table 18

1990 PIC Summer Program

Objective Mastery-Change Summary

Clients Who Attended at Least 30 Days

TABLE OF LM5 BY PLM5

LM5(Editing Skills (pretest))
PLM5(Editing Skills (posttest))

Frequency Percent Row Pct Col Pct	+	0	Total
+	17 21.25 80.95 62.96	4 5.00 19.05 7.55	21 26.25
0	10 12.50 16.95 37.04	49 61.25 83.05 92.45	59 73.75
Total	27 33.75	53 66.25	80 100.00

Frequency Missing = 3

STATISTICS FOR TABLE OF LM5 BY PLM5

Statistic	DF	Value	Prob
Chi-Square	1	28.374	0.000
Likelihood Ratio Chi-Square	1	28.148	0.000
Continuity Adj. Chi-Square	1	25.584	0.000
Mantel-Haenszel Chi-Square	1	28.020	0.000
Fisher's Exact Test (Left)			1.000
(Right)			2.56E-07
(2-Tail)			2.56E-07
Phi Coefficient		0.596	
Contingency Coefficient		0.512	
Cramer's V		0.596	

Effective Sample Size = 80
Frequency Missing = 3

Table 19

1990 PIC Summer Program

Objective Mastery-Change Summary

Clients Who Attended at Least 30 Days

TABLE OF MC1 BY PMC1

MC1(Adds Decimals or Fractions (pretest))
PMC1(Adds Decimals or Fractions (posttest))

Frequency Percent Row Pct Col Pct	+	0	Total
+	15 18.07 88.24 57.69	2 2.41 11.76 3.51	17 20.48
0	11 13.25 16.67 42.31	55 66.27 83.33 96.49	66 79.52
Total	26 31.33	57 68.67	83 100.00

STATISTICS FOR TABLE OF MC1 BY PMC1

Statistic	DF	Value	Prob
Chi-Square	1	32.186	0.000
Likelihood Ratio Chi-Square	1	31.409	0.000
Continuity Adj. Chi-Square	1	28.945	0.000
Mantel-Haenszel Chi-Square	1	31.798	0.000
Fisher's Exact Test (Left)			1.000
(Right)			6.20E-08
(2-Tail)			6.20E-08
Phi Coefficient		0.623	
Contingency Coefficient		0.529	
Cramer's V		0.623	

Sample Size = 83

Table 20

1990 PIC Summer Program

Objective Mastery-Change Summary

Clients Who Attended at Least 30 Days

TABLE OF MC2 BY PMC2

MC2(Sub. Decimals or Fractions (pretest))
PMC2(Sub. Decimals or Fractions (posttest))

Frequency Percent Row Pct Col Pct	+	0	Total
+	16 19.28 76.19 76.19	5 6.02 23.81 8.06	21 25.30
0	5 6.02 8.06 23.81	57 68.67 91.94 91.94	62 74.70
Total	21 25.30	62 74.70	83 100.00

STATISTICS FOR TABLE OF MC2 BY PMC2

Statistic	DF	Value	Prob
Chi-Square	1	38.522	0.000
Likelihood Ratio Chi-Square	1	36.078	0.000
Continuity Adj. Chi-Square	1	35.001	0.000
Mantel-Haenszel Chi-Square	1	38.057	0.000
Fisher's Exact Test (Left)			1.000
(Right)			5.50E-09
(2-Tail)			5.50E-09
Phi Coefficient		0.681	
Contingency Coefficient		0.563	
Cramer's V		0.681	

Sample Size - 83

Table 21

Objective Mastery-Change Summary

Clients Who Attended at Least 30 Days

TABLE OF MC3 BY PMC3

MC3(Mult. Decimals or Fractions (pretest))
PMC3(Mult. Decimals or Fractions (posttest))

Frequency / Percent / Row Pct / Col Pct	+	0	Total
+	3 3.61 37.50 25.00	5 6.02 62.50 7.04	8 9.64
0	9 10.84 12.00 75.00	66 79.52 88.00 92.96	75 90.36
Total	12 14.46	71 85.54	83 100.00

STATISTICS FOR TABLE OF MC3 BY PMC3

Statistic	DF	Value	Prob
Chi-Square	1	3.801	0.051
Likelihood Ratio Chi-Square	1	2.965	0.085
Continuity Adj. Chi-Square	1	2.019	0.155
Mantel-Haenszel Chi-Square	1	3.755	0.053
Fisher's Exact Test (Left)			0.987
(Right)			0.086
(2-Tail)			0.086
Phi Coefficient		0.214	
Contingency Coefficient		0.209	
Cramer's V		0.214	

Sample Size = 83
WARNING: 25% of the cells have expected counts less than 5. Chi-Square may not be a valid test.

Table 22

Objective Mastery-Change Summary

Clients Who Attended at Least 30 Days

TABLE OF MC4 BY PMC4

MC4(Div. Decimals or Fractions (pretest))
PMC4(Div. Decimals or Fractions (posttest))

Frequency Percent Row Pct Col Pct	+	0	Total
+	2 2.41 66.67 40.00	1 1.20 33.33 1.28	3 3.61
0	3 3.61 3.75 60.00	77 92.77 96.25 98.72	80 96.39
Total	5 6.02	78 93.98	83 100.00

STATISTICS FOR TABLE OF MC4 BY PMC4

Statistic	DF	Value	Prob
Chi-Square	1	20.219	0.000
Likelihood Ratio Chi-Square	1	8.381	0.004
Continuity Adj. Chi-Square	1	10.632	0.001
Mantel-Haenszel Chi-Square	1	19.975	0.000
Fisher's Exact Test (Left)			1.000
(Right)			8.60E-03
(2-Tail)			8.60E-03
Phi Coefficient		0.494	
Contingency Coefficient		0.443	
Cramer's V		0.494	

Sample Size = 83
WARNING: 75% of the cells have expected counts less than 5. Chi-Square may not be a valid test.

Table 23

1990 PIC Summer Program

Objective Mastery-Change Summary

Clients Who Attended at Least 30 Days

TABLE OF MC5 BY PMC5

MC5(Integers (pretest))
PMC5(Integers (posttest))

Frequency Percent Row Pct Col Pct	+	0	Total
+	10 12.05 58.82 66.67	7 8.43 41.18 10.29	17 20.48
0	5 6.02 7.58 33.33	61 73.49 92.42 89.71	66 79.52
Total	15 18.07	68 81.93	83 100.00

STATISTICS FOR TABLE OF MC5 BY PMC5

Statistic	DF	Value	Prob
Chi-Square	1	23.978	0.000
Likelihood Ratio Chi-Square	1	19.985	0.000
Continuity Adj. Chi-Square	1	20.642	0.000
Mantel-Haenszel Chi-Square	1	23.690	0.000
Fisher's Exact Test (Left)			1.000
(Right)			..50E-05
(2-Tail)			1.50E-05
Phi Coefficient		0.537	
Contingency Coefficient		0.473	
Cramer's V		0.537	

Sample Size = 83
WARNING: 25% of the cells have expected counts less than 5. Chi-Square may not be a valid test.

Table 24

Table 25

Mastery Change
Attended 30 or More Days
1990 PIC Summer Program

Content Area	Test/Objective	Number Mastered* A	B	Change
Reading	Comprehension			
	Passage Details	12	8	4
	Character Analysis	13	8	5
	Main Idea	12	11	1
	Generalizations	11	10	1
	Written Forms	9	4	5
	Writing Techniques	13	3	10
Language	Mechanics			
	Pronoun/Noun/Adjectives	9	5	4
	Beginning Words/Titles	6	9	-3
	Period/Question Mark Exclamation Point/Comma	3	0	3
	Quotation Marks	16	5	11
	Editing Skills	10	4	6
Mathematics	Computation			
	Adds Decimals or Fractions	11	2	9
	Subtracts Decimals or Fractions	5	5	0
	Multiply Decimals or Fractions	9	5	4
	Divide Decimals or Fractions	3	1	2
	Integers	5	7	-2

*Using those who did not master the objective at pretest but did at posttest (A) minus those who did at pretest but not at posttest (B).

Table 26

Mastery Change
Non-Lowest Pretest Achievement Clients
Attended 30 or More Days
1990 PIC Summer Program

Content Area	Test/Objective	Number Mastered* A	B	Change
Reading	Comprehension			
	Passage Details	11	7	4
	Character Analysis	10	6	4
	Main Idea	9	9	0
	Generalizations	9	8	1
	Written Forms	9	3	6
	Writing Techniques	11	2	9
Language	Mechanics			
	Pronoun/Noun/Adjectives	6	3	3
	Beginning Words/Titles	5	6	-1
	Period/Question 2ark Exclamation Point/Comma	2	0	2
	Quotation Marks	1'	3	10
	Editing Skills	8	4	4
Mathematics	Computation			
	Adds Decimals or Fractions	1J	2	8
	Subtracts Decimals or Fractions	4	3	1
	Multiply Decimals or Fractions	8	4	4
	Divide Decimals or Fractions	3	1	2
	Integers	3	6	-3

*Using those who did not master the objective at pretest but did at posttest (A) minus those who did at pretest but not at posttest (B).

Table 27

Mastery Change
Lowest Pretest Achievement Clients
Attended 30 or More Days
1990 PIC Summer Program

Content Area	Test/Objective	Number Mastered* A	B	Change
Reading	Comprehension			
	Passage Details	1	1	0
	Character Analysis	3	2	1
	Main Idea	3	2	1
	Generalizations	2	2	0
	Written Forms	0	1	-1
	Writing Techniques	2	1	1
Language	Mechanics			
	Pronoun/Noun/Adjectives	3	2	1
	Beginning Words/Titles	1	3	-2
	Period/Question Mark Exclamation Point/Comma	1	0	1
	Quotation Marks	3	2	1
	Editing Skills	2	0	2
Mathematics	Computation			
	Adds Decimals or Fractions	1	0	1
	Subtracts Decimals or Fractions	1	2	-1
	Multiply Decimals or Fractions	1	1	0
	Divide Decimals or Fractions	0	0	0
	Integers	2	1	1

*Using those who did not master the objective at pretest but did at posttest (A) minus those who did at pretest but not at posttest (B).

Table 28

Pretest Employment Skills
Pupils Entered into a PIC Program
Raw Score Values
1990 PIC Summer Program

Raw Score	Frequency	Percent	Cumulative Percent
9	2	1.7	1.7
10	1	.8	2.5
13	1	.8	3.3
17	2	1.7	5.0
18	1	.8	5.8
19	2	1.7	7.4
20	1	.8	8.3
22	1	.8	9.1
23	3	2.5	11.6
24	1	.8	12.4
25	4	3.3	15.7
26	6	5.0	20.7
27	1	.8	21.5
28	5	4.1	25.6
29	6	5.0	30.6
30	2	1.7	32.2
31	4	3.3	35.5
32	9	7.4	43.0
33	4	3.3	46.3
34	5	4.1	50.4
35	8	6.6	57.0
36	8	6.6	63.6
37	9	7.4	71.1
38	11	9.1	80.2
39	8	6.6	86.8
40	6	5.0	91.7
41	3	2.5	94.2
42	2	1.7	95.9
43	4	3.3	99.2
44	1	.8	100.0
.	2	MISSING	
Total	123	100.0	

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Table 29

Posttest Employment Skills
Pupils Entered into a PIC Program
Raw Score Values
1990 PIC Summer Program

Raw Score	Frequency	Percent	Cumulative Percent
23	1	1.1	1.1
25	1	1.1	2.1
26	1	1.1	3.2
27	1	1.1	4.3
28	1	1.1	5.3
29	1	1.1	6.4
30	1	1.1	7.4
31	1	1.1	8.5
33	4	4.3	12.8
34	2	2.1	14.9
36	4	4.3	19.1
37	5	5.3	24.5
38	4	4.3	28.7
39	10	10.6	39.4
40	4	4.3	43.6
41	5	5.3	48.9
42	16	17.0	66.0
43	3	3.2	69.1
44	12	12.8	81.9
45	4	4.3	86.2
46	6	6.4	92.6
47	4	4.3	96.8
48	2	2.1	98.9
49	1	1.1	100.0
.	29	MISSING	
Total	123	100.0	

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Table 30

Pretest Employment Skills
Clients Attending 30 or More Days
Raw Score Values
1990 PIC Summer Program

Raw Score	Frequency	Percent	Cumulative Percent
9	1	1.2	1.2
13	1	1.2	2.4
17	2	2.4	4.9
18	1	1.2	6.1
19	1	1.2	7.3
20	1	1.2	8.5
22	1	1.2	9.8
23	1	1.2	11.0
25	2	2.4	13.4
26	4	4.9	18.3
27	1	1.2	19.5
28	5	6.1	25.6
29	5	6.1	31.7
30	1	1.2	32.9
31	3	3.7	36.6
32	4	4.9	41.5
33	2	2.4	43.9
34	4	4.9	48.8
35	5	6.1	54.9
36	4	4.9	59.8
37	6	7.3	67.1
38	8	9.8	76.8
39	5	6.1	82.9
40	4	4.9	87.8
41	3	3.7	91.5
42	2	2.4	93.9
43	4	4.9	98.8
44	1	1.2	100.0
.	1	MISSING	
Total	83	100.0	

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Table 31

Posttest Employment Skills
Clients Attending 30 or More Days
Raw Score Values
1990 PIC Summer Program

Raw Score	Frequency	Percent	Cumulative Percent
23	1	1.2	1.2
25	1	1.2	2.4
26	1	1.2	3.7
27	1	1.2	4.9
28	1	1.2	6.1
29	1	1.2	7.3
30	1	1.2	8.5
31	1	1.2	9.8
33	2	2.4	12.2
34	2	2.4	14.6
36	4	4.9	19.5
37	5	6.1	25.6
38	4	4.9	30.5
39	6	7.3	37.8
40	3	3.7	41.5
41	3	3.7	45.1
42	13	15.9	61.0
43	3	3.7	64.6
44	12	14.6	79.3
45	4	4.9	84.1
46	6	7.3	91.5
47	4	4.9	96.3
48	2	2.4	98.8
49	1	1.2	100.0
.	1	MISSING	
Total	83	100.0	

VALID CASES 82 MISSING CASES 1

END

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