

THE INFLUENCE OF SELECTED VARIABLES  
ON THE PERFORMANCE OF ADULTS  
TAKING THE GENERAL EDUCATIONAL DEVELOPMENT TESTS (GED)

by

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DEDICATION

TO MY MOTHER AND FATHER

IN DEEPEST APPRECIATION

FOR A LIFETIME OF DAILY

AFFECTION AND SUPPORT

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## Chapter I

### INTRODUCTION

Like many other adult learning centers throughout the state of Kansas and the United States as a whole, the Manhattan Adult Learning Center is a federally designated testing center. During the time-frame of this study, 1,321 adults enrolled at the Center. Of these twenty-five percent were there to study English as a second language with the remainder expressing a desire to study for, take, and hopefully "pass" the five tests of General Educational Development (GED). In an average year 248 people completed the battery (pass and fail) with 117 achieving state minimum scores for certification. Testing is available at the Center without appointment during regular hours: Monday through Friday mornings from 9-12 and Monday-Thursday evenings from 6:30-9:30 for a total of 27 hours a week. Free babysitting is provided and the tests are hand-scored on completion. Students can take the tests in any order of their choosing and are not held to any completion date. Kansas law requires a standard score of 35 on each test and a standard score average for the battery of 44.6 (223 total standard score points) to meet equivalency requirements. A student lacking minimum requirements may either re-test to pass a particular exam or to increase standard score point totals sufficiently to meet state requirements. Re-testing is arranged after an agreed-upon period of study; this review must take place at the Center with an instructor.

The adult student who is actively involved in the testing

process and successfully completes it is quite different from the adult basic education (ABE) learner who is the subject of most of the research and philosophical contemplation in the field of adult education. The former usually is handicapped by varying levels of illiteracy, both functional and academic, and is often counted among the hard-core unemployed with personal aspirations proportionally sublimated.<sup>1</sup> It is the recruitment and retention of this group that ostensibly justify 80 percent of a program's federal and matching state funds.

It is their unemployability that has made economics the dry focus of so many "adult" materials although there is not ample evidence that vocationally oriented curriculums are more conducive to improve literacy skills.<sup>2</sup>

This study is concerned with a specific sub-group within the almost twenty-four million adults who have not completed twelve years of formal schooling in an accredited system.<sup>3</sup> In terms of their earnings, they tend to exist on the fringes of middle class life; philosophically they are generally in harmony with middle class values, traditional in expectation levels and conservative in their responses.<sup>4</sup> Eighty percent fall into the potentially high productive age range of 18-44, a period

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<sup>1</sup>Curtis Ulmer, Teaching the Disadvantaged Adult (Washington: National Association Public Continuing Education, 1972), p. 8.

<sup>2</sup>Melvin Howards, "The GED in Adult Education," Materials and Methods in Adult Education, ed. Chester Klevins (New York: Klevins Publications, 1972), p. 66.

<sup>3</sup>Annual Report, (Washington: National Advisory Council on Education, 1974), p. 13.

<sup>4</sup>Howards, op. cit., p. 65.

research has demonstrated to be preparatory in nature with a definite search for a vocation and an attempt to expand the dimensions of individual self-knowledge.<sup>5</sup>

Adults who have been credentialized at the Manhattan Adult Learning Center generally acknowledge the tests to be an essential and not particularly burdensome requirement towards greater participation in American life. They recognize that to pass the tests, ability is incidental to performance and their success confirms this. The average GED graduate has spent only thirty clock hours in review with an instructor. It is not unusual for a student to take and pass five tests in three consecutive days.

Those who interact daily with adults actively involved in the testing process see their work in the context of Alfred Benjamin's description of help as "an enabling act."<sup>6</sup> The GED tests, no matter what their shortcomings, are a reality in our over-credentialized society and have become a major hurdle in the progression of the under-schooled adult. Yet in the "load-power"<sup>7</sup> dichotomy that every adult should assess and must deal with, a GED provides an essential increase in personal "margin", that block of enriching and supportive experiences that expand alternatives and cushion interruptions in the passage through life.

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<sup>5</sup>Gail Sheehy, Passages (New York: E. P. Dutton, 1976), p. 84.

<sup>6</sup>Alfred Benjamin, The Helping Interview (Boston: Houghton Mifflin, 1974), p. xii.

<sup>7</sup>Irvin Lorge, Howard Y. McClusky and Gale E. Jensen, Psychology of Adults (Washington: Adult Education Association, 1963), p. 17.

## STATEMENT OF THE PROBLEM

This study seeks to bring into focus a hitherto amorphous group to define it in terms of specific behaviors. There is ample demographic information on GED graduates but few attempts to explain their behaviors contextually in pursuit of a basic objective in the life of an under-educated adult. To create such a student profile, moderator variables were compared to the test performances of adults earning their GED equivalency certificates at the Manhattan Adult Learning Center during a three year period. Significant differences were sought between variables and performance in an attempt to answer the following questions:

1. Do men perform better than women on any or all of the five GED tests?
2. Does the length of prior formal schooling affect subsequent test performance?
3. Do adults from different areas of the United States and the world show differences in scores?
4. Does the stress of unemployment cause an adult to perform poorly in a testing situation?
5. Does motivation in all its disguises significantly affect test results?
6. Does increasing age predicate decreasing test scores?

## HYPOTHESIS TO BE TESTED

The variables of age, sex, employment, marital status, motivation, area of last formal schooling, and number of years of formal

education, had no significant effect on test performance of those taking the five tests of General Education Development (GED) and successfully receiving an equivalency certificate.

#### LIMITATIONS

Limitations inherent in this study concerned the following:

1. The scope of this study did not permit an analysis of interactions among variables.
2. The numbers of students for geographical area of prior schooling were proportionately low for Riley County (8) and foreign-born (19).
3. Students with 5,6,7, and 12 years of formal schooling were under-represented (5 years-1, 6 years-0, 7 years-5, 12 years-3).
4. Numbers were unbalanced for the motivation variable (raise and promotion-7, retain present job-6).

#### SIGNIFICANCE OF THE STUDY

Research on adults working for a GED certificate has been limited, and usually conducted within single institutions qualifying variables and modifying results. As a group, adults receiving their equivalency certificates at the Manhattan Adult Learning Center, are more representative of similar students throughout the United States. The physical proximity of the Manhattan Adult Learning Center to Kansas State University and the Fort Riley Military Installation, issues a more varied clientele than the heterogenous populations typically described. The relationships between variables and performance considered in this study have been controlled only by the time-

frame imposed by the author.

This study supports Curtis Ulmer's contention that the lack of a formal education may cultivate shrewdness, the ability to think, and a high level of common sense.<sup>8</sup> An adult student is seldom proud of his personal history, the particulars of which provided the variables for this study. These variables, singly or in combination, traditionally provide a negative frame of reference for the adult returning to school, limiting aspiration and inducing a resignation to minimum standards of performance. These data strongly suggest that the variables studied here should be periphereal rather than focal in the sequential process of earning a GED equivalency certificate.

#### DEFINITION OF TERMS

The following terms were defined as they applied to this study:

Adult Basic Education (ABE). The teaching of academic competencies commensurate with eight years of formal schooling.

Adult Student. An individual 16 years of age or older not enrolled in any other public or private institution of education.

Area. The geographical location of an adult student's last formal schooling.

Foreign-born. Adult students whose birthplace is other than the United States and whose first language is not English.

Formal Education. An adult student's final grade level in an accredited public school.

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<sup>8</sup>Ulmer, loc. cit.

GED. General Educational Development. "GED" is also a colloquialism for a high school equivalency certificate.

GED Tests. The five norm-referenced tests of General Educational Development.

Grammar Test. A commonly used substitution for the sub-test "Correctness and Effectiveness of Expression" (in this study this test is referred to as the "expression test").

Literature Test. A commonly used substitution for the sub-test "Interpretation of Literary Materials."

Math Test. A commonly used substitution for the sub-test "General Mathematical Ability."

Motivation. That singular influence or influences which prompt an adult to continue an interrupted education.

Percentile Rank. An indication of the proficiency of an individual GED candidate in comparison with the test scores of all students in the norming population.

Science Test. A commonly used substitution for the sub-test "Interpretation of Reading Materials in the Natural Sciences."

Social Studies Test. A commonly used substitution for the sub-test "Interpretation of Reading Materials in the Social Studies."

Standard Score. A test reporting method that transforms a raw GED test score (total number of correct responses to one comparable to other forms of the same test.



## Chapter II

### REVIEW OF LITERATURE

The tests of General Educational Development initiated in the immediate post World War Two years, were non-traditional in design and unique in execution. F. F. Lindquist first described the general philosophy of the newly-developed GED tests:

The final and most important requirement was that the tests should be of such character that they would not penalize the serviceman unfairly because of his lack of recent academic or classroom experience, or because of the unorthodox or informal manner in which his education had been acquired. This meant to us immediately that these tests could not be constructed of questions of the types which constitute the usual final achievement examination for high school courses. We felt that for use with the informally educated or self-educated serviceman, the typical course examination places too much emphasis upon the detailed factual content of classroom instruction, upon the unique and arbitrary organization of the content which characterizes school textbooks and courses of study, and upon the shop-talk or technical vocabulary of the teacher-specialist in a given field. It is generally recognized that the lasting outcomes of a high school course are not the detailed descriptive facts which are taught... but the broad concepts, the generalizations, attitudes, skills, and procedures that are based upon or developed through the detailed materials of instruction.<sup>1</sup>

At first administered only to active or "mustered-out" servicemen, the testing program was eventually expanded to include military dependents and then the civilian population. Gradually the tests became popularly recognized as a respectable educational alternative. The GED Annual

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<sup>1</sup>F. F. Lindquist, "The Use of Tests in the Accreditation of Military Experience and in the Educational Placement of War Veterans," reprinted from Educational Record, October, 1944.

Statistical Report for 1974 lists 39,016 adults as taking advantage of this alternative in 1949; in 1970 561,203 people had continued their education in this way.<sup>2</sup>

As the social and economic upheaval that characterized two decades of depression and war settled, those taking the GED tests coalesced into a recognizable group, economically unabsorbed, under-educated and often illiterate, with more than half of them women. The National Advisory Council's "Annual Report" on Adult Education lists 1.4 million unemployed adults who have not completed high school.<sup>3</sup> Of those who were employed either full or part-time, 50 percent earned less than \$4,999 annually. Lorge<sup>4</sup> and Scharles<sup>5</sup> consider economics to be a prime motivator in the decision to take the GED tests.

Of the thousands recorded as receiving a GED equivalency certificate, thousands more have tried and failed. The existence of any test that attempts to credentialize specific skills and knowledges, requires a reasonably correspondent curriculum that provides some opportunity for review and re-learning. Many, dealing with under-educated adults, feel that work-related subjects should be the foci

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<sup>2</sup>Annual Statistical Report (GED) (Washington: General Educational Development Testing Service of the American Council on Education, 1974), p. 12.

<sup>3</sup>Annual Report, (Washington: National Advisory Council on Education, 1974), p. 15.

<sup>4</sup>Irvin Lorge, Howard Y. McClusky and Gale E. Jensen, Psychology of Adults (Washington: Adult Education Association, 1963), p. 3.

<sup>5</sup>Henry Scharles, "Overview of Illiteracy Economics," Adult Basic Education: The State of the Art (Chicago: Department of Education, The University of Chicago Press, 1970), p. 3.

of review work<sup>6</sup> although there is no demonstrated correlation between such curriculum emphasis and the academic requirements of the GED tests. Conversely, Howards feels that the tests too often serve as the basis of adult curriculums and subsequent testing serves as an evaluation of such curriculums.<sup>7</sup>

No matter what materials and/or curriculum is eventually decided on, the process of review and re-education is often difficult and always subject to interruption, temporary or permanent. Houle,<sup>8</sup> Kidd,<sup>9</sup> Knowles<sup>10</sup> and Ulmer<sup>11</sup> cite the multiple distractions of the adult learner, the pressures of employment or its lack, the responsibilities of family, the lack of formal schooling and the feelings of inadequacy such a deficiency generates, and the continual displacement of Americans from one community to another.

Axford<sup>12</sup> notes that adults returning to school are generally overwhelmingly non-academic, choosing primarily non-credit courses; GED students are a substantial exception. The median age of adults

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<sup>6</sup>Mary Davis, "Basic Educational and Job Training," Manpower (Washington: U.S. Department of Labor and Manpower Administration, 1973), p. 3.

<sup>7</sup>Melvin Howards, "The GED in Adult Education," Materials and Methods in Adult Education, ed. Chester Klevins (New York: Klevins Publications, 1972), p. 66.

<sup>8</sup>Cyril Houle, The Design of Education (San Francisco: Jossey-Bass, 1972), p. 75.

<sup>9</sup>J. R. Kidd, How Adults Learn (New York: Association Press, 1973), p. 35.

<sup>10</sup>Malcom Knowles, "Issues in Adult Learning Psychology," Adult Leadership, 22, No. 19 (1974), 301

<sup>11</sup>Curtis Ulmer, Teaching the Disadvantaged Adult (Washington: National Association Public Continuing Education, 1972), p. 9.

<sup>12</sup>Roger Axford, Adult Education: The Open Door (Indiana:

working towards a GED is 25; Peck (guided by Lorge) found this to be a generally explorative and preparative period where career choices are considered and eventually consolidated.<sup>13</sup> Philosophically, it is life's most positive period, a time when a return to the educational process holds the most potential for success. Benjamin bases subsequent adult counseling on the helping interview, where life's variables are modified and realistically acted upon.<sup>14</sup>

Any involvement in a review and testing process requires some degree of self-direction and the literature reveals the motivation of adults to be a multi-faceted area. Maloney describes the "impractical curiosity" that directs adult learners.<sup>15</sup> Houle talks about changing one's life in desirable ways.<sup>16</sup> Knowles discusses heightened curiosity and increased self-direction.<sup>17</sup> Axford describes all resulting educational activities as an attempt to transcend the passive state.<sup>18</sup> A survey concerned with research priorities in adult education was

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Halldin, 1969), p. 74

<sup>13</sup>Lorge, op. cit., p. 11

<sup>14</sup>Alfred Benjamin, The Helping Interview (Boston: Houghton Mifflin, 1974), p. 7.

<sup>15</sup>Martin Maloney, "Six O'Clock Scholars," Leader's Digest No. 3 (Washington: Adult Education Association, 1968), p. 9.

<sup>16</sup>Houle, op. cit., p. 43.

<sup>17</sup>Knowles, op. cit., p. 302

<sup>18</sup>Axford, op. cit., p. 79

circulated among twenty-eight prominent professionals in the field and sixty-five percent listed some aspect of motivation, as it concerned adults, to be of paramount importance; motivation remains a mercurial intangible.<sup>19</sup>

The literature reveals no particular difficulties in assimilation and/or continued training for those holding a GED certificate. An Associated Press article in October 1975, states that within the last ten years, employers have come to prefer GED graduates as prospective workers; such people have demonstrated pragmatic, translatable competencies in reading and computational skills, competencies not enumerated in a formal high school diploma.<sup>20</sup> Amiel Sharon studied groups of non-high school graduates in college and found that their success/failure rate was not significantly different from those with traditional in-residence 8-12 schooling.<sup>21</sup>

Relevant scholarship on under-educated adults has been mainly either demographic or philosophical and then mainly concerned with the illiterate, hard-core unemployed, a distinct sub-group of the larger population discussed in this study. Research concerned with those taking and/or passing the GED tests has been largely confined to small

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<sup>19</sup>Burton W. Kreitlow, "Research in Adult Education," Handbook of Adult Education in the United States, ed. Malcolm Knowles (Washington: Adult Education Association, 1960), p. 115.

<sup>20</sup>Victoris Graham, "High School Diploma Not Proof of Ability," Associated Press, Topeka Daily Capitol, October 23, 1975.

<sup>21</sup>Amiel Sharon, The Non High School Graduate Adult in College and His Success as Predicted by the Tests of General Educational Development (Princeton: Educational Testing Service, 1972), p. 11.

insular populations, e.g. prisons, freshman classes of junior colleges, etc. An accurate student profile of the average GED graduate needs to be drawn and constantly updated if materials and teaching are to be relevant and expeditious.

## Chapter III

### METHODOLOGY

#### POPULATION

This study was based on the total population (350) of adult students receiving their high school equivalency certificates in the year 1973, 1974 and 1975. Each graduate was classified as a Basic III student (reading level 8-12) and began and completed testing within an average of three months (3.4 mo.). The median age was 25 with approximately ten years of prior formal schooling (9.95). Fifty-eight percent of those sampled were residents of Kansas with 20.8 percent of these coming from the Manhattan public school system. More than half were female (65 percent) and 64 percent were married. Only 38 percent were employed during the period of testing. Table 1 features a sub-matrix of those variables.

#### METHOD OF SAMPLING

The data sampling was based on two sources of information:

- 1) Personal data required to complete the application for the Kansas State High School Equivalency Diploma, Kansas State Department of Education.
- 2) Test data collected from individual standard scores and percentile rankings as noted on the official score sheet sent to the Kansas State Department of Education.

The population was automatically randomized by the exigencies

of an open center; students study and test at their personal discretion and convenience.

#### MATERIALS AND INSTRUMENTATION

The GED testing program is designed by the Educational Testing Service (ETS) and administered through the American Council on Education, General Educational Development Testing Service. A battery of GED tests is comprised of five examinations in the academic areas of English grammar, social studies, natural science, literature and mathematics--(tests 2,3, and 4 determine the candidate's ability to interpret and evaluate reading selection in the designated areas.) The tests minimize formal pedagogical achievements and instead measure concept retention and evaluative generalizations. The format is multiple-choice with an examination booklet and separate answer sheet, total questions for the five tests vary between 375-400 questions. Upon completion each test is hand-scored by the examiner and results noted on official score sheets in each student's folder. Completion time for each test is 2 hours.

The English version of the Tests of General Educational Development have been nationally normed in 1943, 1955, and 1967. The 1943 and 1955 studies included only accredited public high schools, while the 1967 study sampled black high schools and private high schools. All schools were categorized by size and randomly selected from state alphabetical listings. Of 1,965 schools invited, 476 chose to participate (24.2 percent); the participation rate has dropped 31.2 percent since 1943 (63.6 percent) and 1955 (55.4 percent) reflecting an increasing tendency of schools to resist "outside" testing



of this nature.

In May 1967 a total of 28,773 twelfth-grade students took all five tests in the GED battery. Form 0 was used in 1967 Norming Studies since it best reflected contemporary secondary curricula. Raw scores were translated into percentile, cumulative percentile and "normalized" standard scores (McCall T-scores).

All GED test forms developed yearly since 1967 have been equated directly or indirectly to Form 0 so as to integrate them into scales derived in the 1967 Norming Study. In each equating process, new and old forms of each test are administered to a random sample of students; each new form contains a selected number of items that duplicate concepts in older forms. The equating design mandates each new form of each test to two old forms of the same test. Reliability estimates are computed by the Kuder-Richardson Formula.

#### RESEARCH DESIGN

The research design of this study emphasized totality and simplicity. All who received their equivalency certificates between September 1, 1973 and June 30, 1975 were included. Testing records at the Center are filed alphabetically by year and randomization was assured by a lack of manipulation of this existing arrangement. Students were numbered sequentially from 1 through 350, beginning with September, 1973., e.g. 1973, A-#1 through Z-#114; 1974, A-#115 through Z-#241; 1975, A-#242 through Z-#350. A fortran statement using only these numbers as identification was then designed; the code key had 50 characters (See Appendix, Table 1).

The data were analyzed by using the unequal subclass analysis

of variance as modified for the computer.<sup>1</sup> The model used to test the variables was:

$Y = \text{mean} + \text{sex} + \text{educational level} + \text{area} + \text{marital status} + \text{employment} + \text{motivation} + \text{age} + \text{error}.$

All variables had discrete values except age, which was considered as a continuous variable. Right hand members (data on scores) were standard scores and percentile rankings of expression, social science, science, literature and general mathematics. Duncan's new multiple range test was used to test differences between means whenever a significant effect ( $P < .05$ ) was observed among scores.<sup>2</sup>

#### SUMMARY

This study was based on the total population of adults receiving their high school equivalency certificates during the years 1973, 1974 and 1975. The data sampling was based on two sources of information; the testing application provided the variables and individual score sheets specified test performance. The population was automatically randomized because all graduates were included in the study.

Because of the complexity of the study, a computer analysis was used. A specially designed program compensated for unequal numbers within subclasses.

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<sup>1</sup>Kenneth E. Kemp, "Least Squares Analysis of Variance, a Procedure, a Program, and Examples of Their Use," Kansas Agricultural Experiment Station, (Research Paper 7), 1972.

<sup>2</sup>Holley C. Freyer, Concepts and Methods of Experimental Statistics (Boston; Allyn and Bacon, 1966), pp. 78-85.

## Chapter IV

### RESULTS AND FINDINGS

The data was discussed in similar order as outlined in Table 1.

TABLE 1

#### DISTRIBUTION OF STUDENTS ACCORDING TO VARIABLES

Moderator variable	Number
Sex:	
Females	228
Males	122
Education level:	
5	1
7	5
8	31
9	69
10	115
11	126
12	3
Area of education:	
Manhattan	73
Riley county	8
Kansas	123
United States	127
Foreign	19
Marital status:	
Single	125
Married	225
Employed:	
Yes	133
No	217
Motivation:	
Retain job	6
Salary raise	7
Vocational training	25
Other reasons	27
Personal satisfaction	40
College entrance	47
New job	92
Employment	106

The moderator variables were sex, formal educational level, area of formal schooling, marital status, employment status, motivation, and age.

Between 1973 and 1975, 2 out of 3 adults receiving their GED certificates were women. This reflects national figures (9 out of 11 students are women) and shows women to be more alert and receptive to the possibilities of further education. Of the 228 women studied, 40 listed "personal satisfaction" as their motivating force. The 122 males successfully meeting GED certification requirements were all interested in either finding employment or improving existing job status.

Ninety-seven of each one hundred students had completed one of grades 8-11; the median grade level was tenth.

Twenty-three percent of those studied had received their last formal schooling in the Manhattan-Riley County area; another 35 percent came from Kansas at-large. Thirty-six percent had last attended high school in other parts of the United States; these people were usually dependents of Ft. Riley personnel or military careerists requiring a GED for further advancement. Five percent were internationals, wives of university students; there were no refugees or resident aliens in this group.

Two out of three graduates were married. Of the one-third that were single, an unspecified number were responsible for one or more children.

Only 38 percent of this group were employed; perhaps explaining the 60 percent that listed employment as their primary motivation for working towards a GED. However, only 6 percent of the group concerned with economics checked such specifics as salary raise, promotion or job retention as a source of motivation, suggesting some uneasiness

with their personal potential and the realities of the job market. One out of five needed the GED as a required credential in the sequential process of further training and/or education.

Performance on four of the five GED tests was not significantly affected by sex (Table 2).

TABLE 2  
MEANS AND STANDARD ERRORS OF STANDARD  
SCORES AND PERCENTILE RANKINGS  
AS AFFECTED BY SEX

Test	Female	Male
EXPRESSION		
Standard score	48.66 (1.44) a	44.64 (1.47) b
Percentile ranking	43.94 (4.83) a	30.32 (4.93) b
SOCIAL STUDIES		
Standard score	50.05 (1.54)	49.69 (1.57)
Percentile ranking	48.76 (4.92)	48.27 (5.01)
SCIENCE		
Standard score	51.64 (1.33)	51.59 (1.35)
Percentile ranking	55.91 (4.40)	55.55 (4.49)
LITERATURE		
Standard score	51.38 (1.47)	49.73 (1.50)
Percentile ranking	53.92 (4.76)	48.69 (4.85)
GENERAL MATHEMATICS		
Standard score	46.54 (1.38)	46.12 (1.40)
Percentile ranking	37.92 (4.68)	36.19 (4.77)

a,b  $p < .0001$

There was some variance between men and women on the literature test with the latter achieving a slightly higher mean ranking ( $P < .08$ ),

but it was on the first test "Correctness and Effectiveness of Expression" that women achieved superior scores ( $P < .0001$ ). Percentile rankings for both men and women were low; grammar is often viewed by both sexes as a very peripheral part of the review process.

Considering the median age of the graduates (25), the difference in verbal abilities might be explained by role conditioning. Written and spoken speech patterns are a commonly recognized indicator of personality, background, and aspiration and at all socio-economic levels women have traditionally been cautioned to cultivate a facade acceptable to society, immediate and at-large. To study grammar, even at the minimum level required to pass the GED, is to analyze the interactions of agreed upon systematic abstractions and women seem more amenable to the discipline required. However, as the scores reveal, they are so far behind due to cultural conditioning and erratic learning behaviors in prior formal schooling, that they seldom make the total effort required to learn the system. Men seldom see the intricacies of language as relevant to their goals; they require immediate application of what they learn.<sup>1</sup>

Both men and women scored lowest on the test of General Mathematical Ability, reflecting national statistics.<sup>2</sup> This test is commonly viewed by both sexes as "something to be gotten through". Less than half of the test (40 percent) is familiar territory, e.g. "old fashioned arithmetic"; algebra, mensurational geometry, algebra/

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<sup>1</sup>Roger Axford, Adult Education: The Open Door (Indiana: Halldin, 1969), p. 74.

<sup>2</sup>Norvelle Northcutt, "Adult Functional Competency: A Summary," University of Texas Division of Extension, 1975, p. 6.

coordinate geometry, and data interpretation comprise the remaining 60 percent. While relevance is again an issue, adults tend to avoid skills not learned in their youth,<sup>3</sup> and few of our students feel they have internalized the arithmetical concepts and procedures they were once exposed to. Most surprising was the lack of significant variation in the performance of men and women. The folklore of Western civilization is redolent with myths and anecdotes concerning women's inherent difficulties with numbers; as recently as September 1976 MS Magazine<sup>4</sup> published an article dealing with the "I can't do math" syndrome, common among women confronting anything other than the printed word. Yet the logical approach used in learning grammar is easily transferred to acquiring improved math skills and women should be made aware of this reality. The Science test, its content popularly associated with math skills, presented no particular difficulties for women; again there was no significant difference between the sexes.

Women, when first considering the requirements of the GED tests, express apprehension at the prospect of demonstrating competency in math (and often in science). This negative frame of reference must be modified through counseling and successful study experiences in the hopes of creating a more realistic self-assessment that will lead to continued growth.

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<sup>3</sup>Irvin Lorge, Howard Y. McClusky and Gale E. Jensen, Psychology of Adults (Washington: Adult Education Association, 1963), p. 6.

<sup>4</sup>Sheila Tobia, "Math Anxiety: Why is a Smart Girl Like You Counting on Your Fingers," MS Magazine, September 1976, p. 56

The effects of years of formal education on test scores are summarized in Table 3.

TABLE 3  
MEANS AND STANDARD ERRORS OF STANDARD SCORES  
AND PERCENTILE RANKINGS AS AFFECTED BY  
LEVEL OF FORMAL EDUCATION

	GRADE LEVEL ATTAINED			
	8	9	10	11
EXPRESSION				
Standard score	46.64 (1.40)	47.15 (1.06)	47.69 (0.91)	48.61 (0.93)
Percentile ranking	37.40 (4.71)	39.02 (3.57)	41.25 (3.07)	44.95 (3.15)
SOCIAL STUDIES				
Standard score	59.57 (1.50)	51.15 (1.14)	51.66 (0.98)	51.36 (1.01)
Percentile ranking	52.69 (4.80)	52.24 (3.64)	54.51 (3.12)	53.54 (3.21)
SCIENCE				
Standard score	52.13 (1.29)	50.80 (0.98)	52.41 (0.84)	52.34 (0.87)
Percentile ranking	57.15 (4.29)	52.59 (3.25)	58.66 (2.79)	57.71 (2.87)
LITERATURE				
Standard score	50.81 (1.43)	50.10 (1.09)	50.10 (1.09)	51.49 (0.96)
Percentile ranking	53.27 (4.64)	50.39 (3.52)	53.37 (3.07)	54.48 (3.11)
GENERAL MATHEMATICS				
Standard score	47.12 (1.34)	47.61 (1.02)	47.06 (0.87)	48.07 (0.90)
Percentile ranking	39.43 (4.56)	41.60 (3.46)	39.90 (2.97)	42.96 (3.05)

There were too few students in grade levels five (1), seven (5) and twelve (3) to give reliable results (Table 1) so these levels have been removed from the discussion even though these cumulated values appear in the probability table (Table 9).

The number of years of formal schooling (8-12) had no signif-



ificant effect on test performance in any subject area. In relation to the enrolling and counseling process, this is vitally important since adults are often inherently defensive in initial communications. Without exception they are apologetic about their "lack" of formal schooling and see it as a major obstacle in achieving many of their goals. The GED certificate is often the first positive achievement in a hitherto hostile academic world, mitigating the feelings of inadequacy and incompleteness that influence the learning process.<sup>5</sup>

This study is concerned with a unique clientele and it appears that typical high school curricula have little measurable effect on this group; perhaps it is true that such curricula are basically elitist in their services and priorities. Political rhetoric to the contrary, we are not a classless society.

Formal schooling had a slight effect on reading scores through it was not statistically significant. A study of approaches to teaching reading divide the skills required into three areas; decoding and encoding skills usually refined in grades K-3, vocabulary/ comprehension skills, grades 4-6, and adult efficiency skills, e.g. processing materials, grades 7-9.<sup>6</sup> It is the latter group that are paramount for success on the three reading tests. Since the adult students at the Manhattan Learning Center have an average of 10 years of formal schooling an opportunity to sophisticate the techniques

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<sup>5</sup>Stephen Udvari, "Insights into the Nature of the Culturally Unique," Materials and Methods in Adult Education, ed. Chester Klevins (New York: Klevins Publications, 1972), p. 104.

<sup>6</sup>Walter Porvers, "An Overview of the Reading Skills Development Laboratories Concept," abstracted from chapter 2, Reading Laboratory Directors Management Manual (Professional Services, Inc. 1973).

TABLE 4

MEANS AND STANDARD ERRORS OF STANDARD SCORES  
AND PERCENTILE RANKINGS AS AFFECTED BY  
AREA OF FORMAL EDUCATION

Tests	Manhattan	Riley County	Kansas	United States	Foreign
EXPRESSION					
Standard score	48.14 (1.51)	45.15 (2.68)	45.96 (1.40)	47.41 (1.41)	46.57 (1.92)
Percentile ranking	42.15 (5.08)	35.26 (9.00)	34.81 (4.71)	39.49 (4.72)	36.63 (6.45)
SOCIAL STUDIES					
Standard score	51.98 (1.62) <sup>a</sup>	50.41 (2.88) <sup>a</sup>	49.02 (1.51) <sup>a</sup>	50.26 (1.51) <sup>a</sup>	47.67 (2.06) <sup>b</sup>
Percentile ranking	54.28 (5.17)	51.35 (9.17)	46.19 (4.80)	49.58 (4.81)	41.18 (6.56)
SCIENCE					
Standard score	52.75 (1.40)	54.10 (2.47)	51.20 (1.29)	51.59 (1.30)	48.44 (1.77)
Percentile ranking	59.05 (4.63)	65.08 (8.21)	54.15 (4.30)	55.22 (4.30)	45.14 (5.88)
LITERATURE					
Standard score	52.47 (1.55) <sup>c</sup>	51.47 (2.74) <sup>c</sup>	50.32 (1.43) <sup>c</sup>	52.31 (1.44) <sup>c</sup>	46.21 (1.96) <sup>d</sup>
Percentile ranking	57.32 (5.01) <sup>c</sup>	55.88 (8.87) <sup>c</sup>	49.70 (4.64) <sup>c</sup>	56.61 (4.65) <sup>c</sup>	36.98 (6.35) <sup>d</sup>
GENERAL MATHEMATICS					
Standard score	47.53 (1.45)	44.36 (2.56)	46.05 (1.34)	46.22 (1.34)	47.48 (1.84)
Percentile ranking	40.76 (4.92)	31.12 (8.73)	35.55 (4.57)	36.55 (4.58)	41.51 (6.25)

a, b  $p < .05$ c, d  $p < .005$

necessary for adequate performance on these particular tests is substantially abbreviated.

The science test which of the three reading tests, gave students at all levels of comparison in this study, their highest scores of the total battery, showed only .56 difference in percentile rankings between the 8th and 11th grades, surprising considering the almost daily increase in this subject's complexity. It can be safely assumed that besides their daily interactions with the technological accoutrements of twentieth century life, adults also read newspapers and magazines and keep up to date with their world through television.

Math percentile scores showed no relation to formal education, fluctuating vertically on an annual basis. Math teachers that have evaluated this particular test have found it to be haphazard in the extreme and more concerned with minutia than basic and sequential generalizations. There seems to be no pattern in the information required and the scores reflect this.

The lack of effect of formal schooling on subsequent performance might be explained by the Center's approach to adult learners. All teaching is tutorial using programmed materials, with the total review process cooperatively planned by teacher and student. A student's "entry level" is the basis of program planning with immediate credence given to the knowledges and skills already internalized.

Adults from Manhattan and Riley County generally achieve higher scores on all tests than adults from outside this area (Table 4). That may be attributable to the fact that many from this town hear about the Center through friends and local referral persons and agencies; they are thus moving to an unfamiliar milieu from a secure base within their own community. Students at the Center who had their last formal

schooling outside the state of Kansas are generally dependents of military personnel at Fort Riley, and while not significantly higher, their scores are slightly better on all tests than those from other parts of Kansas and foreign students. Many of these people have gone through pre-testing procedures (Metropolitan Achievement Test) at the Education Center at Fort Riley and due to the influence of local counseling come to us only when they have achieved MAT scores of 8-10. (Scores at this level predict success on the GED tests.)

International students had no appreciable differences in test results in Expression, Science and Math. With one exception, all were women from "third world" nations who had mastered an academic English in primary and secondary schools in their respective countries, schools usually accredited through the British colonial system.<sup>7</sup> Compared to U.S. citizens, these women had the greatest difficulty with the literature test ( $P < .005$ ), which requires a sophistication of inference and interpretation based on Western culture and philosophy that the Center's materials and review techniques cannot encompass in the time student's allow themselves to study. Social Studies presented similar difficulties inherent in acculturation ( $P < .05$ ); the economics and history of the industrialized nations is often a totally new field of knowledge to this group.

Marital status (Table 5) was not a significant factor in its effect on test results.

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<sup>7</sup>Robert Verscheldon and Elizabeth Harbers, "Practical Considerations in Organizing and Maintaining a Viable ESL Program," Adult Leadership, 24, No. 5 (1976), 174.

TABLE 5  
MEANS AND STANDARD ERRORS OF STANDARD  
SCORES AND PERCENTILE RANKINGS  
AS AFFECTED BY MARITAL STATUS

Test	Marital status	
	Single	Married
EXPRESSION		
Standard score	47.12 (1.49)	46.17 (1.41)
Percentile ranking	38.21 (5.01)	36.05 (4.75)
SOCIAL STUDIES		
Standard score	49.99 (1.60)	49.75 (1.52)
Percentile ranking	48.47 (5.10)	48.16 (4.83)
SCIENCE		
Standard score	51.59 (1.38)	51.64 (1.31)
Percentile ranking	55.55 (4.57)	55.90 (4.33)
LITERATURE		
Standard score	50.43 (1.46)	50.69 (1.51)
Percentile ranking	51.33 (4.96)	51.27 (4.68)
GENERAL MATHEMATICS		
Standard score	46.18 (1.43)	46.48 (1.35)
Percentile ranking	36.33 (4.86)	37.48 (4.60)

As already noted, students actively testing generally look on the whole study process as one of selective and expeditious review. Such a program is rarely strenuous enough to be influenced by the pressures of family or single life. The Center has no attendance requirements and with a generally self-directed clientele, studying is pursued at the convenience and inclination of the learner.

Most writing on adult students identify the "outside distractions" that inhibit learning and academic performance, and the demands of a family is always enumerated. While Manhattan's "open-center" policy and free nursery work to the good of the student, they still seem capable of sufficient concentration and purposefulness to achieve their goals.

The same holds true for single parents, not specifically enumerated in this study. The National Advisory Council's "Annual Report"<sup>8</sup> based on the 1970 census, identifies five and one-half million families with a woman as sole head of the household and the single female parent is an increasingly observable phenomenon at the Center. (Although the GED testing application doesn't query the existence of children, their presence as a potential distraction in the planning of a study program is always considered.)

Many of the unmarried men studied here may also be single parents but they have not, in the enrolling process, identified themselves as such.

The fact that married, unmarried, and single parents perform equally successfully on the total GED test battery should alleviate a basic concern of the busy people who come to the Center to resume their education.

In 1970 there were 23,963,300 American adults (16 years of age and over) who lacked a high school diploma of its equivalency.<sup>9</sup> Of these, 1.4 million were unemployed with the rest labor force participants,

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<sup>8</sup> Annual Report, (Washington: National Advisory Council on Education, 1974), p. 15.

<sup>9</sup> Ibid., p. 12.

either part-time or full-time. Of the 350 students completing their GED's over a 3 year period, 217 were unemployed, more than half. More women than men were unemployed--more than half of those studied were women (see Table 1). Most men and women in the Manhattan study considered themselves, when working, under-employed and not performing tasks commensurate with what they felt to be their abilities. All viewed their return to school with an apprehension based on either lack of a job or a job with a low status. Table 1 shows that almost as many wanted a better job (92) as those who were unemployed (106).

The concern with personal economics is a basic motivational force in those working for a high school equivalency. Security for most adults is predicated on employment. Yet employment, or the lack of it, has no significant effect on test scores in any area, nor are the scores "competitive", percentile rankings on the reading tests are average and scores in grammar and math rank in the lower third of the achievement scale.

TABLE 6

MEANS AND STANDARD ERRORS OF STANDARD SCORES  
AND PERCENTILE RANKINGS AS AFFECTED BY  
EMPLOYMENT STATUS

Test	Employment	
	Yes	No
EXPRESSION		
Standard score	46.47 (1.43)	46.82 (1.48)
Percentile ranking	36.55 (4.81)	37.71 (4.96)

TABLE 6 continued

Test	Employment	
	Yes	No
<b>SOCIAL STUDIES</b>		
Standard score	50.10 (1.58)	49.63 (1.59)
Percentile ranking	49.28 (4.90)	47.75 (5.05)
<b>SCIENCE</b>		
Standard score	51.99 (1.32)	51.24 (1.36)
Percentile ranking	56.80 (4.38)	54.65 (4.52)
<b>LITERATURE</b>		
Standard score	50.43 (1.46)	50.69 (1.51)
Percentile ranking	50.71 (4.74)	51.89 (4.89)
<b>GENERAL MATHEMATICS</b>		
Standard score	46.84 (1.37)	45.82 (1.41)
Percentile ranking	38.69 (4.66)	35.41 (4.81)

These figures give some credence to Howard's contention that those passing the GED tests with the minimum average required are not automatically employable.<sup>10</sup>

Employment or the desire to up-grade existing economic status did not motivate students to a higher performance level. Those that successfully completed the test battery were not significantly affected by their employment status; neither apprehension nor ambition was dominant enough to modify statistical variations.

As profiled in Table 1, adult students pursue a GED equivalency certificate for a variety of reasons; the GED testing application provides eight sub-headings diagrammed in Table 7.

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<sup>10</sup> Melvin Howards, "The GED in Adult Education," Materials and Methods in Adult Education, ed. Chester Klevins (New York: Klevins Publications, 1972), p. 67.



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TABLE 7

MEANS AND STANDARD ERRORS OF STANDARD SCORES  
AND PERCENTILE RANKINGS AS  
AFFECTED BY MOTIVATION

	PERSONAL SATISFACTION	EMPLOYMENT	NEW JOB	RAISE	COLLEGE ENTRANCE	VOCATIONAL TRAINING	RETAIN JOB	OTHER
<u>EXPRESSION</u>								
Standard Score	46.52 (1.67)	47.47 (1.46)	47.34 (1.40)	44.07 (2.91)	47.93 (1.60)	46.75 (1.86)	47.75 (3.07)	45.36 (1.76)
Percentile Ranking	36.91 (5.61)	40.72 (4.90)	39.45 (4.69)	38.59 (9.78)	41.50 (5.36)	38.25 (6.19)	38.92 (10.29)	32.30 (5.92)
<u>SOCIAL STUDIES</u>								
Standard Score	49.48 (1.79)	51.40 (1.57)	51.14 (1.50)	48.57 (3.12)	51.46 (1.71)	49.80 (1.98)	47.68 (3.29)	49.41 (1.89)
Percentile Ranking	47.78 (5.71)	54.54 (4.99)	52.99 (4.77)	44.92 (9.95)	54.13 (5.46)	49.17 (6.30)	36.28 (10.48)	48.31 (6.03)
<u>SCIENCE</u>								
Standard Score	52.98 (1.54)	52.74 (1.35)	52.88 (1.29)	50.88 (2.69)	52.34 (1.47)	52.28 (1.70)	48.03 (2.83)	50.79 (1.63)
Percentile Ranking	60.17 (5.11)	59.56 (4.46)	59.82 (4.27)	54.85 (8.91)	57.07 (4.89)	58.43 (5.64)	42.58 (9.38)	53.33 (5.40)
<u>LITERATURE</u>								
Standard Score	51.53 (1.71)	51.89 (1.49)	50.80 (1.43)	48.97 (2.97)	51.15 (1.63)	50.26 (1.88)	50.05 (3.13)	49.82 (1.80)
Percentile Ranking	54.35 (5.53)	55.73 (4.83)	51.98 (4.62)	47.66 (9.64)	53.71 (3.29)	51.26 (6.10)	47.45 (10.14)	48.26 (5.84)
<u>GENERAL MATHEMATICS</u>								
Standard Score	45.67 (1.60)	47.03 (1.39)	46.72 (1.34)	45.85 (2.78)	44.92 (1.53)	45.41 (1.76)	48.59 (2.93)	46.45 (1.69)
Percentile Ranking	35.15 (5.44)	39.12 (4.75)	38.57 (4.54)	35.67 (9.47)	32.23 (5.20)	33.98 (6.00)	44.17 (9.97)	37.52 (5.74)

All have been discussed separately and in context in other parts of this chapter. Motivation, no matter how immediate the need, did not significantly affect test performance.

The effect of age (Table 8) was analyzed differently than other variables.

TABLE 8  
REGRESSION COEFFICIENTS OF AGE ON STANDARD  
SCORES AND PERCENTILE RANKINGS

Variable	Coefficient
EXPRESSION	
Standard score	
Percentile ranking	
SOCIAL SCIENCE	
Standard score	.057
Percentile ranking	.239
SCIENCE	
Standard score	.002
Percentile ranking	.002
LITERATURE	
Standard score	.093*
Percentile ranking	.289*
GENERAL MATHEMATICS	
Standard score	-.010
Percentile ranking	-.003

\* $p < .05$

Instead of analyzing each student's age as a separate entity or as a specified group, i.e., 18-25, 25-35, etc., the computer analyzed

the effects of age in a linear regression. Thus the data of interest are the b values, or a measurement of the slope of a line. The data show that for every increase in years, standard scores and percentile rankings for expression will increase .073 and .274 points, respectively ( $P < .10$ ). Literature scores will increase .093 and 2.89 points, respectively ( $P < .05$ ) for every yearly increase in age. There were no effects on age with respect to social science and science. There was a tendency for the mathematics scores to decrease with age.

Table 9 shows the probability values of variables on test scores and rankings.

These colated values provide a summary of specific and separate discussions within Chapter 4.

#### SUMMARY

This chapter detailed the influence of selected variables on the test performance of adults taking the General Educational Development Tests to achieve high school equivalency certificate. The following conclusions were reached:

1. Women achieved significantly higher scores on tests of Expression; performance on the remaining four tests was not affected by sex.
2. The number of years of formal schooling had no significant effect on test performance in any subject area.
3. Social Studies and Literature provided particular problems for international students perhaps due to acculturation.
4. Married and single adults performed equally on all tests.

TABLE 9  
PROBABILITY VALUES OF VARIABLES ON TEST SCORES AND RANKINGS

Variable	Expression		Social Science		Science		Literature		General Mathematics	
	SS		SS		SS		SS		SS	
	PR	PR	PR	PR	PR	PR	PR	PR	PR	PR
Sex	.000	.000	.7033	.8727	.9422	.8942	.0663	.0736	.6138	.5479
Education	.5083	.3371	.3052	.1804	.0054	.0027	.1540	.2705	.5204	.6129
Area	.1804	.1943	.0488	.1013	.0697	.0694	.0020	.0014	.4163	.3887
Marital status	.2839	.4704	.7996	.8170	.9424	.8975	.9203	.9850	.7246	.7681
Employment	.6950	.7025	.6300	.6203	.3687	.4335	.7757	.6929	.2312	.2617
Motivation	.6684	.6135	.5619	.3951	.4937	.4714	.8369	.8126	.6108	.6614
Age	.0846	.0549	.2097	.1146	.9599	.9867	.0324	.0401	.7965	.9831

5. Neither the demands of a job nor the pressures of unemployment significantly affected test scores.
6. Personal motivation was not a factor in test performance.
7. Increased age had a slightly significant effect on math scores.

## Chapter V

### SUMMARY AND CONCLUSIONS

Among graduates of the Manhattan Adult Learning Center, women preformed better than men on tests of grammar and literature; women are traditionally more verbal in both written and oral expression and more sophisticated in their power of literary interpretation. There was no significant difference in performance between men and women on the Math and Science tests, suggesting that women are inherently as capable as men in areas not related to language arts. Students who received their formal schooling within the United States demonstrated no variation in scores relative to a particular locality; international students scored lower on tests of Science and Literature. American students generally receive their highest scores on the Science test perhaps reflecting the highly technological society in which they live. Neither age (with the exception of the Literature test), employment or motivation significantly affected test performance. All three variables would normally be considered to have tremendous influence on behavior; the data does not substantiate this.

The adult students actively involved in review and testing as pre-requisites for an equivalency certificate, are goal-oriented rather than learning-oriented. Such as student recognizes the GED tests as indicators of performance with one's true potential only suggested. Adults that accept this reality approach the testing and review process

analytically and systematically to the dismay of those who see true learning as an expansion of self with resulting positive changes in behavior. Yet, success generates continued learning; the educated eventually see the need for more education.

This study was based on test performance, not learning, although it is assumed that performance is a natural consequence of learning. It demonstrates that whatever background a student brings to the testing situation, it is seldom sufficiently lacking to significantly affect the eventual results.

Relevant scholarship on under-educated adults is usually either demographic or philosophical and then mainly concerned with the illiterate, hard-core unemployed, a distinct sub-group of the total population discussed in this study. An accurate student profile of the average GED graduate needs to be drawn and constantly updated if materials and teaching are to be relevant and expeditious.

The data interpreted in this study indicate that the Manhattan Adult Learning Center's policies of open enrollment and individual tutoring in conjunction with a variety of programmed materials, is best suited to the needs of the students described. Adults involved in the testing process have neither the time nor the patience for the leisurely perusal of a specific field of knowledge, nor do the demands of the tests require such a program of study. "Passing the tests" is paramount with this particular clientele and should not be manipulated by arbitrary strictures of attendance requirements, completion of specific materials, etc.

The one-to-one counseling that is basic to the processes of



enrollment and subsequent tutoring, can, as a result of this study, be more supportive and realistic. Very positive conclusions have been reached here that can both alert students to potential difficulties in testing and allay apprehensions concerning performance.

Studies of this nature need to be repeated when the new GED tests become nationally available, beginning in September of 1977. The new tests, while not significantly different in format or content, are nonetheless said to be less related to academic expertise and more concerned with the realities of everyday life. There is the possibility that the students discussed here will perform better on such examinations; for many the world has exerted a far greater influence on behavior than years spent in a classroom.

There must always be a genuine and sustained effort on the part of administrators and teachers to know precisely who their students are and what such students expect of the educative process. Only then can an environment most conducive to meeting their needs be established and maintained.

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## APPENDIX

## CODE KEY

Column Number	Name	Code Identification
1-2	Age	Continuous
3	Sex	1=female 2=male
4-5	Education	Years (01-12)
6	School Area	1=Manhattan 2=Riley County 3=Kansas 4=United States 5=Foreign
7	Marital Status	1=single 2=married
8	Employed	1=yes 2=no
9	Motivation	1=personal satisfaction 2=employed 3=new job 4=raise/promotion 5=college 6=vocational training 7=retain present job 8=other, e.g. military
10-12	Date Started	10-11=month (01-12); 12=year (1-5)
13-15	Date Completed	13-14=month (01-12); 15=year (3-5)
16-18	Expression	Date- 16-17=month (01-12); 18=year (1-5)
19-20	Expression	Standard Score-00-99
21-22	Expression	Percentile-00-99
23-25	Social Studies	Date- 23-24=month (01-12); 25=year (1-5)
26-27	Social Studies	Standard Score-00-99
28-29	Social Studies	Percentile-00-99
30-32	Science	Date- 30-31=month (01-12); 32=year (1-5)
33-34	Science	Standard Score-00-99
35-36	Science	Percentile-00-99
37-39	Literature	Date- 37-38=month (01-12); 39=year (1-5)

40-41	Literature	Standard Score-00-99
42-43	Literature	Percentile-00-99
44-46	Mathematics	Date- 44-45=month (01-12); 46=year (1-5)
47-48	Mathematics	Standard Score-00-99
49-50	Mathematics	Percentile-00-99

## APPLICATION

for

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## The Kansas State High School Equivalency Diploma

## KANSAS STATE DEPARTMENT OF EDUCATION

120 East Tenth, Topeka, Kansas 66612

Dr. C. Taylor Whittier - Commissioner

(PLEASE PRINT OR TYPE)

Telephone No. \_\_\_\_\_ Social Security No. \_\_\_\_\_

## SECTION I. Personal Data

Date

Name of Applicant \_\_\_\_\_ Age \_\_\_\_\_ Birth Date \_\_\_\_\_  
Mo. Day Yr.Present Address \_\_\_\_\_  
(Street) (City)Permanent Address \_\_\_\_\_  
(Street) (City)

Marital Status: Married \_\_\_\_\_ Single \_\_\_\_\_ Sex: Male \_\_\_\_\_ Female \_\_\_\_\_

Are you a resident of Kansas? \_\_\_\_\_ Have you lived in Kansas for the past six months? \_\_\_\_\_

Give names and address of two people (not relatives) who can verify the above information.

Name \_\_\_\_\_ Address \_\_\_\_\_

Name \_\_\_\_\_ Address \_\_\_\_\_

## SECTION II. Educational Data

Name and address of school last attended \_\_\_\_\_

Date of last attendance \_\_\_\_\_

What was the highest grade completed - 9, 10, 11 or below \_\_\_\_\_ Reasons for leaving school: \_\_\_\_\_

What is your present occupation? \_\_\_\_\_

Have you been in the Armed Services? \_\_\_\_\_ If so, give dates \_\_\_\_\_

Have you previously taken the GED tests? \_\_\_\_\_ If so, when and where \_\_\_\_\_

Give reasons why you wish the certificate (Check) Personal Satisfaction ☐ Employment ☐New Job Opportunity ☐ Enter College ☐ Enter Vocational Training ☐ RetainPresent Position ☐ To be eligible for Salary Raise ☐ Other ☐ Explain ☐

For 16-17-18 year old Applicants

☐ Are you totally self-supporting?☐ Are you a ward of the court?☐ Are you a ward of the state?☐ Are you joining any branch of the Armed Services?

List Testing Center where you wish to be examined \_\_\_\_\_

I certify that the above statements are true to the best of my knowledge and belief.

(Signature of Applicant)

RETURN TO: W. W. LEE, STATE DEPARTMENT OF EDUCATION

Official Report of Test Results  
TESTS OF GENERAL EDUCATIONAL DEVELOPMENT

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issued by  
OFFICIAL GED CENTERS  
of the  
General Educational Development Testing Service, American Council on Education

Name of Examinee:

\_\_\_\_\_  
Last First Middle Maiden

Address:

Reported To:

Date of Birth \_\_\_\_\_ Last Grade Completed \_\_\_\_\_ Date Reported \_\_\_\_\_

Social Security Number:

Last School Attended:  
(if required by State Policy)

	Test Date	Form	Standard Score	Percentile Rank for U.S.
Test 1: Correctness and Effectiveness of Expression .....				
Test 2: Interpretation of Reading Materials in the Social Studies .....				
Test 3: Interpretation of Reading Materials in the Natural Sciences .....				
Test 4: Interpretation of Literary Materials .....				
Test 5: General Mathematical Ability .....				
Average Standard Score:				Passed* _____ Failed* _____

Signature of Chief Examiner: \_\_\_\_\_

Name of Center: \_\_\_\_\_

Address of Center: \_\_\_\_\_

\_\_\_\_\_ Date: \_\_\_\_\_



## VITA

Elizabeth Westney Harbers was born on December 26, 1937 in New York City. She received her elementary and secondary education in Elmira, New York, graduating from Elmira Free Academy in 1955. She received a B.S. in Elementary Education from the State University of New York (Cortland) in 1959, then taught fourth grade at Painted Post Elementary School near Corning, New York. She spent one year working on an M.A. Degree in English Literature at Oklahoma State University, Stillwater and completed 24 graduate hours.

From 1961-63 she taught first grade in the Chicago school system, designing and implementing a bilingual program for Puerto Rican children. She taught third form in the Samaru school system near Zaria, Nigeria from 1967 to 1968.

Afternoon and evening classes in English for Adult Nigerians was started in Samaru in 1967. She maintained her interest in adult education by tutoring ESL classes during 1969-70 in the Manhattan Junior High School. In 1971 she became coordinator of the Manhattan Adult Learning Center and since 1973 has been Director of Manhattan Adult Learning and Resource Center.

THE INFLUENCE OF SELECTED VARIABLES  
ON THE PERFORMANCE OF ADULTS  
TAKING THE GENERAL EDUCATIONAL DEVELOPMENT TESTS (GED)

by

ELIZABETH WESTNEY HARBERS

B.S., State University of New York (Cortland, N.Y.), 1959

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AN ABSTRACT OF A MASTER'S THESIS

submitted in partial fulfillment of the  
requirements for the degree

MASTER OF SCIENCE

College of Education

KANSAS STATE UNIVERSITY

Manhattan, Kansas

1976

A study of 350 male and female adults receiving their General Educational Development (GED) equivalency certificates at the Manhattan Adult Learning and Resource Center, Manhattan, Kansas from September 1, 1973 - June 30, 1975 was conducted to determine the effects of sex, years of formal education, area of previous schooling, marital status, employment, age, and reasons for testing on scores achieved on the five General Educational Development tests. These data were subjected to computerized unequal subclass analysis of variance. Performance on four tests was equivalent for males and females; females scored significantly higher on tests of expression. Non native-born Americans showed lower test scores in literature and social science; no significant differences were found among American students whose previous formal schooling was in geographic areas other than Manhattan. Reasons for testing and employment status had no effect on test performance. Regression co-efficients indicated increased difficulty with mathematical concepts proportionate to age. These results indicate that further indepth analysis, similar to those reported here, is necessary to profile the specific behaviors of a particular adult clientele as a guide to the establishment and/or modification of existing adult educational programs concerning preparation for the GED equivalency certificate.