THE USES OF THE EXPECTANCY TABLE IN THE
JUNIOR HIGH SCHOOL

by

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CHAPTER I

THE PROBLEM AND DEFINITIONS OF TERMS USED

A relatively new approach is being used and recommended by educators to interpret test results in a meaningful manner. This approach is the use of the expectancy, or prediction table. The many uses of this device are the core of this report. It has been used to some degree all over the United States but the problem studied in this report is the localizing of scores of certain standardized tests. This information is then synthesized into an expectancy table which will apply to the Junction City Junior High School exclusively.

A follow-up study was conducted which identified over and under achievers. A summary of the reasons for the various achievement levels students attain is included in the study.

I.   THE PROBLEM

Statement of the problem. It was the purpose of this study to provide a meaningful tool for use by counselors, teachers and administrators in the interpretation of the standardized tests given in Junction City Junior High. Stanines, percentile rankings and I.Q. scores are not easily interpreted by the non-statistician. The

expectancy table provides an easily understandable tool by which to interpret tests to parents and students.

A second reason for this study was to find another criterion for use in placing students into advanced and slow groups for instructional purposes. Junction City Junior High groups students in various subjects and the expectancy tables will facilitate this grouping program.

Finally, over and under achievers were identified and interviewed to determine the reasons for their deviance from the more normal levels of achievement. The reasons given are summarized in a later chapter.

Importance of the study. Recent literature being distributed by the testing companies has urged the use of these expectancy tables for the interpretation of their tests. They feel it is best to localize the test to the local school system.

In the past, correlation coefficients have been used by counselors to interpret data but the counselor needs to be able to translate validity coefficients into terms that have meaning to teachers, administrators, parents, and students. Those uninitiated in testing may be unable to understand, not only multiple correlation coefficients, but even a single coefficient. The expectancy table is a method which translates test scores into "chances of

success" statements.[1]

II. DEFINITIONS OF TERMS USED

Expectancy or prediction table. The expectancy table
is a helpful device which the counselor can use for a fuller
understanding of local test results and as a ready means of
communicating these results to other people.[2]

The expectancy table shows the relationship between
test-score intervals and criterion categories. Typically,
intervals of test scores are shown at the left of the table.
The number of intervals depends partly on the number of
cases involved and partly on the degree of differentiation
desired for the situation. Criterial categories are
usually shown across the top of the table; the number of
categories here also depends on the number of cases and on
the degree of differentiation desired.

The number, or per cent, or cases which fall into a
certain score interval and criterion category are placed
into the individual cells of the table. Most people prefer
to use per cent, feeling that this practice is easier to

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[1] A. G. Wesman, "Expectancy Tables--A way of inter-
preting test validity," Test Service Bulletin, (New York:
The Psychological Corporation, 1949), Vol. 38, p. 9.

[2] Ibid., p. 10.

interpret.[3]

Over and under achievers. For the purposes of this study, a student was classified as an over or under achiever if he had a scholastic average of one full letter grade above or below the mean grade point for his test score group.

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[3]Howard B. Lyman, Test Scores and What They Mean (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1963), p. 67.

CHAPTER II

REVIEW OF THE LITERATURE

The literature available in this field is very
limited. The Psychological Corporation has provided the
most material. The material contributed by this testing
agency centers around expectancy results of research done
with the Differential Aptitude Test. Various textbooks
contain a paragraph or two about the use of the tables but;
empirically, the benefits derived by the use of the expect-
ancy table have not been verified. A. G. Wesman states,

> The expectancy table is not new; it has been known
> and used in the test field for more than a century.
> But it has not been as widely known or used as it
> deserves. In the course of developing newer and more
> complex statistical techniques for the construction
> and analysis of tests and test batteries, we have too
> far neglected the communication of understanding to
> the less initiated. It is to be hoped that this
> neglect will be recognized and remedied.[4]

Although not too widely used in test interpretation,
the expectancy table is an excellent device to use when
communicating test results to the laymen. It is easy to
understand and to explain to others. It directs attention
to the purpose of testing by comparing test scores with
criterion performance.

Furthermore, the expectancy table is an aid in test

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[4]Wesman, op. cit., p. 12.

interpretation that shows a realistic outlook so far as
criterion results are concerned. A common misinterpretation
of test scores goes something like this: "This score means
that you will fail in college." No test score (except,
perhaps, a final examination in some course!) means any
such thing. The expectancy table encourages an interpreta-
tion of this sort: "In the past, students with scores like
yours have seldom succeeded in college; in fact, only two
students in ten have had satisfactory averages at the end
of their first year." This latter type of interpretation
can be supported; the former cannot.[5]

Cronbach gives a very practical view of the expect-
ancy table. The one great advantage of its use is that it
enables the teacher to evaluate the attainment of his group
even if it is not typical in mental ability. A teacher who
finds that end-of-the-year performance is below average
usually dismisses the finding if he knows that the group
was weak to start with. The table can show whether this
class is performing as well as did comparable weak pupils
in the norm group.[6]

It is apparent that expectancy tables can be prepared

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[5]Lyman, op. cit., p. 70.

[6]Lee J. Cronbach, Essentials of Psychological Test-
ing (New York: Harper and Row, 1960), p. 387.

for every set of data for which validity coefficients can
be computed. This applies not only to those which are pre-
sented in this report, but to any which the individual
counselor may work up for his own students and courses.
Those who have computed correlation coefficients will recog-
nize that the expectancy table is very similar to a scatter
diagram, except that in the expectancy table there are
usually fewer cells and the cell entries are ordinarily con-
verted to per cents.

Some cautions are necessary in using the expectancy
table data. It is obvious that the confidence we have in
our predictions depends directly on the numbers of students
involved. The counselor should take into account the size
of the group with which he is working by using fewer cate-
gories with smaller cases; e. g., by using a three-by-four
cell table instead of one which is six cells by five cells.
This will place larger numbers in each cell and permit
greater confidence in judgments based on the cells in the
table. No statistic based on a small number of cases can
command the same degree of reliance as one based on a
larger number.

Conversely, larger numbers of cases permit more pre-
cise predictions without loss of reliability. The coun-
selor is advised to accumulate data for several years to
build up the number of students for whom information is

available.

It is always possible that the results obtained with one group of students are due to idiosyncrasies of that particular group. Combining data from several successive groups will tend to eliminate the influence of any such accidental peculiarities.

Since expectancy tables are a type of validity evidence, the same principles of specificity apply to them as to other kinds of evidence of validity. The figures obtained from one school may or may not be representative for another school, just as job requirements differ from region to region. If the teachers' marking standards change, the evidence previously gathered will be less applicable. In a word, like any other validity data, expectancy tables will be most appropriate for use with similar groups for the same institution. It is important therefore, that each counselor prepare such tables for courses in his own school or jobs in his own community, and that he continue collecting data for successive years. This will not only increase his numbers of cases, but will provide a check on his results, enabling him to make such adjustments as changing conditions may suggest.

Expectancy tables are not intended to replace correlation coefficients as evidence of validity. They present a more detailed form of the same data which are summarized

in a correlation coefficient. The chief advantages of using the correlation coefficients are that it expresses by means of a single number the relationship between the test and the criterion and that it may be used in statistical analysis of data (e. g., multiple correlation studies). On the other hand, the expectancy table has the advantage of making easily apparent, even to the nonstatisticians, the specific relationship which exists between the test and the course, thus facilitating the counselor's task of explaining the meaning of scores to students, teachers and parents.[7]

The school--or counselor--is exposed for judgment when telling parents about the abilities and performances of their children. The parents have a right to know. Knowledge in terms they can understand and absorb is what the school must give.[8]

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[7]George K. Bennett, Harold G. Seashore and Alexander G. Wesman, _Differential Aptitude Tests Manual_ (New York: The Psychological Corporation, 1966), p. 57.

[8]James H. Ricks, "On Telling Parents About Test Results," _Test Service Bulletin_ (New York: The Psychological Corporation, 1959), Vol. 54, p. 4.

REPORT OF THE STUDY

The foregoing chapters explain the device that was built as a result of this study. This chapter will give a step by step account of the study; its findings, implications, and conclusions.

PROCEDURE

There are four standardized tests administered annually in the Junction City Junior High School; one achievement, one intelligence, and two aptitude tests. All tests were studied and charted with the exception of the first.

Otis Quick-Scoring Mental Ability Test. This test is given to seventh graders two weeks after entering Junior High School. These students had already been placed in their respective ability groups by this time so the test was of little value other than giving additional information about the student. The grouping was done exclusively by sixth grade teacher ratings. On the basis of their judgments, students were placed in high, medium or low groups in three different subjects: reading, science, and mathematics. Each subject had one high, one low, and eight

"average" sections. Although the teacher rating worked
fairly well, another criterion was needed. It was not
necessary to add it to the method of selecting the groups
but to evaluate the method used by comparing it with the
results of the I.Q. test.

In order to do this, an expectancy table was formu-
lated based on the final grades of some five hundred
students who had had the Otis and also had received their
final grades for the seventh grade in English, Mathematics,
Science, and Social Studies. The grades in each subject
were kept on a tally sheet (Table I). One of these sheets
was made for each range. The ranges were divided into five
point I.Q. bands. The scores below 80 were listed on one
tally sheet and those scores above 125 were listed on a
separate sheet. In all, there were eleven bands.

As a student's I.Q. range was determined, a mark was
made in the block below the letter grade that was earned in
each subject. When all scores and grades were recorded,
the totals were found in each subject. From this total,
percentages were computed for each letter grade in the
subject and a prediction table was formed which showed how
students in each I.Q. range had scored in each of four
separate subjects at Junction City Junior High (Table II).

TABLE I

TALLY SHEET FOR ACCUMULATION OF DATA FOR OTIS
QUICK-SCORING MENTAL ABILITY TEST AND OTHERS

Range 81-85	MATH	ENGLISH	SCIENCE	GEOGRAPHY HISTORY
A				
B				
C				
D				
F				

TABLE II

PREDICTION TABLE BASED ON OTIS QUICK-SCORING MENTAL ABILITY TEST AND FINAL GRADES IN SEVENTH GRADE ACADEMIC SUBJECTS (ALL NUMBERS ARE PERCENTAGES)

Range	English					Mathematics					Science					History or Geography				
	A	B	C	D	F	A	B	C	D	F	A	B	C	D	F	A	B	C	D	F
77 to 80			17	57	26			25	50	25			50	37	13				71	29
81 to 85			20	75	5		5	25	60	10		10	25	60	5		5	20	40	35
86 to 90		10	22	68			3	31	66			3	31	66			16	8	76	
91 to 95		3	36	56	5	2	7	20	60	11			46	51	3		7	24	55	14
96 to 100		11	50	39		2	22	47	22	7		9	51	38	2		19	41	38	2
101 to 105	1	27	49	23		1	18	43	38		1	30	45	24		1	26	44	29	
106 to 110	9	42	41	8		11	29	46	14		4	33	55	7	1	7	32	43	17	1
111 to 115	8	54	36	2		13	46	32	9		7	43	43	7		12	36	32	20	
116 to 120	22	54	24			22	58	20			20	54	22	4		16	58	18	8	
121 to 125	48	40	12			44	44	12			40	44	16			42	44	14		
126 to ??	42	58				86	14				58	42				42	29	29		

By using the table, one could counsel a student who had scored in the 106 to 110 band in the following manner: "Most of the people who scored like you did on this test made C's in English. However, some earned B's and some earned D's, so; if you apply yourself and study, a B is very possible. But, if you let things slide by, you can fall into the bottom fourth of the group and earn a D."

This interpretation is much more meaningful than to say; "You have average ability and if you do average work, you will earn an average grade." In the former interpretation the student can see what actually happened to others in his situation. There is no "pie in the sky" falsity about the interpretation. It is real. It has happened before and will happen again. The responsibility is placed squarely on the shoulders of the student and he can see that he is not limited by his ability because, through application, others have earned B's and A's with the same amount of ability.

A second advantage of the prediction table is that there is no need for the counselor or teacher to tell the student his I.Q. to interpret a test. The I.Q. can be very misleading and easily misinterpreted by someone not schooled in testing. There is nothing misleading about the expectancy table. It is based on past records and is statistically proved. Whereas the correlation between test

scores and actual achievement might be low, the data on the
expectancy table is valid in the situation in which it is
being used. This fact alone makes it valid.

Differential Aptitude Test. This test is required
by the State Department of Public Instruction of all ninth
grade students. This is a battery of tests of various
aptitudes and abilities. There are eight separate sections
to this test, each having its own norms and method of admin-
istration. This study dealt with two of these subtests;
the Verbal Reasoning (VR) and the Numerical Ability (NA).
The first study of this particular test was a comparison
of the VR+NA percentiles to letter grades earned in English,
Mathematics, Science, and Social Science. It was conducted
in the same manner as the study done with the Otis except
that, instead of I.Q. scores, percentile bands were used.
The bands were ten percentile points wide, forming ten
separate bands.

A similar tally sheet was used (Table I). The
results were derived in the same manner as those for the
Otis. The numbers in the subject cells were totaled and
a percentage was derived for each band. The expectancy
that was formed is shown on page 16 (Table III). The
smallest number of cases to be used was in the 20-29 per-
centile band. There were twenty-six cases in this cell.

TABLE III

PREDICTION TABLE BASED ON VERBAL REASONING-NUMERICAL ABILITY COMBINED SCORES ON THE DIFFERENTIAL APTITUDE TEST AND FINAL GRADES IN NINTH GRADE ACADEMIC SUBJECTS
(ALL NUMBERS ARE PERCENTAGES)

Percentile rank	English					Mathematics					Science					Social Science				
	A	B	C	D	F	A	B	C	D	F	A	B	C	D	F	A	B	C	D	F
01-09		2	11	80	7		2	14	77	7		3	10	77	10		3	12	66	19
10-19	3		36	61				45	55			7	33	60		7		38	31	14
20-29		8	28	64			3	35	55	7			31	69			10	23	54	13
30-39		10	37	53				47	53			6	47	47			12	60	28	
40-49		22	44	34			11	39	48	2	3	10	49	35	3	2	32	32	32	2
50-59		25	59	16			18	64	15	3		26	48	26			54	20	26	
60-69	2	15	61	22			12	73	6	9		18	47	35		5	27	49	16	3
70-79	5	47	41	17		10	29	48	23		3	37	53	7		19	48	34	9	
80-89	10	60	13	17		10	45	29	16		7	49	27	17		23	44	30	3	
90-99	31	56	10	2	1	31	36	29	4		27	50	20	3		40	48	10	2	

However, ten cases in each band was considered a valid
number when the bands were divided into ten percentage point
cells.

Since the VR+NA score is comparable to I.Q., this
table may be used to assist in placing ninth grade students
into the advanced and slow classes at the Senior High.
When this table is used as an I.Q. equivalent, there are
two more criteria for judging the student's chances for
success in the more difficult subjects.

After working with the VR+NA combined score, the VR
and the NA scores were studied separately. There was a
need to have a criterion for placing ninth grade students
into the three categories of classes in the Senior High.
Junction City Senior High School offers three track programs
in English and mathematics. A student can take Practical
English (slow group), English II (average), or Honors
English (accelerated). He may also take General Mathe-
matics (slow), Algebra I (average), Algebra II or Geometry
(accelerated). With this diversity of abilities to judge,
another score was needed by which to predict success at
the various levels.

The sampling for this study included over 1600 stu-
dents who had had the DAT and had also earned final grades
in English, algebra, and geometry for their sophomore year.
The Verbal Reasoning score was compared with the earned

grade in English and the Numerical Ability score was com-
pared with the earned grades in algebra or geometry, which
ever they took as sophomores. A different type tally sheet
was used (Tables IV, V). The same method as used in the
previous studies was employed in determining the number of
grades in each group at each percentile band. The pre-
diction table on page 21 was the result.

This is an invaluable tool in counseling the stu-
dents who are transferring to the Senior High. Students
are always concerned in which level of English and mathe-
matics they should enroll. With the use of this table,
they can see their chances for success in the various sub-
jects and at the various levels.

Questions such as: "How hard is geometry?" are very
frequently asked the Junior High counselor. Using this
table, one might answer: "You can see here that only 15%
of the students in the 90-99 percentile in the mathematical
ability portion of this test were able to make an A in
geometry. Judging from this, it must be more difficult
than algebra, for instance."

Again, the counselor does not have to judge the
ability of the student for him, he can judge his ability
for himself. His own decision on such matters will make
a more mature personality than would be formed if someone
else made the judgment for him.

TABLE IV

TALLY SHEET FOR ACCUMULATION OF DATA ON DIFFERENTIAL
APTITUDE TEST NUMERICAL ABILITY SCORE AND
EARNED GRADES IN TENTH GRADE ENGLISH

Range 30-39   Numerical Ability

Algebra

A	
B	
C	
D	
F	

Geometry

A	
B	
C	
D	
F	

TABLE V

TALLY SHEET FOR ACCUMULATION OF DATA ON DIFFERENTIAL
APTITUDE TEST VERBAL REASONING SCORE AND EARNED
GRADE IN TENTH GRADE MATHEMATICS

Range 20-29	Verbal Reasoning English
A	
B	
C	
D	
F	

TABLE VI

PREDICTION TABLE BASED ON VERBAL REASONING SCORE COMPARED TO TENTH GRADE
ENGLISH GRADES AND NUMERICAL ABILITY SCORES COMPARED TO TENTH GRADE
MATHEMATICS GRADES (ALL NUMBERS ARE PERCENTAGES)

	Verbal Reasoning					Numerical Ability									
	English					Geometry					Algebra				
Range	A	B	C	D	F	A	B	C	D	F	A	B	C	D	F
0 - 9		2	15	61	12			7	68	25		17	43	19	21
10 - 19		9	27	51	13			32	58	10		8	25	50	17
20 - 29		11	27	53	9		8	45	42	5		5	50	35	10
30 - 39	2	15	38	39	6		11	19	47	23	15	15	30	20	20
40 - 49	2	31	34	33		5	15	17	47	21		40	37	12	11
50 - 59	3	31	34	21	11	4	12	29	42	12		14	36	43	7
60 - 69	8	27	44	18	3	7	15	53	28		23	48	15	14	
70 - 79	15	43	31	11		4	21	51	21		15	16	46	14	9
80 - 89	9	45	36	9	1	4	36	46	14		23	34	26	17	
90 - 99	29	38	24	7	2	15	16	31	45	8	30	54	12	4	

The counselors at the Junior High level found this table most helpful this year in placing students into the high school curriculum at the level where they could best function.

California Algebraic Aptitude Test. This test is given to eighth graders at the end of the year to determine their aptitude for Algebra I, offered in grade nine. People in the 30th percentile and below are discouraged from enrolling in algebra. Further qualifications include at least a C in eighth grade mathematics and the approval of the teacher. This test has been made the third criterion and it has been very successful.

The same format was used as before. The tally sheet, (Table I) was used to accumulate the data and after it was processed, the table on page 23 resulted (Table VII). This test sampling included over 500 students and seemed to have the highest correlation of any test studied.

This table too, was an invaluable tool in counseling eighth graders. They had to decide which mathematics course to take; General Mathematics or Algebra I. If a student was dubious about his ability to pass algebra, the table could give a fair indication of his chances for success in the course. The test and the table are now a part of the screening process for Algebra I at Junction City Junior High.

TABLE VII

PREDICTION TABLE BASED ON SCORES OF CALIFORNIA
ALGEBRAIC APTITUDE TEST AND ACHIEVED GRADES
IN NINTH GRADE ALGEBRA I
(ALL NUMBERS ARE PERCENTAGES)

	Range	Algebra I Grade				
		A	B	C	D	F
(cut-off point)	0 - 29			38	62	
	30 - 39			23	72	5
	40 - 49			46	39	15
	50 - 59		12	48	33	7
	60 - 69	3	12	63	16	6
	70 - 79	7	36	57		
	80 - 89	10	51	31	8	
	90 - 99	52	30	18		

CHAPTER IV

THE OVER ACHIEVER AND THE UNDER ACHIEVER

A related aspect of this report was the identification of under and over achievers. Twenty-nine such students were identified and interviewed. Each student was interviewed separately. The interviews were structured to the extent that the same questions were asked each counselee.

The purpose of the interview was to determine the reasons behind the over achievers' success and the under achievers' failure to perform up to their ability levels. Based on the students interviewed, the responses fell into four separate categories.

The first category was peer relations. Some of the students felt that their success or failure was due to the attitude of their friends. They felt that if their friends worked and made high grades, they had to do this also. The opposite was also true. If the peer group was one of under achievers, the student felt that it was more important to be accepted by the group than to do well in school.

A second category was parental attitude. Most students, especially over achievers, felt their success was due to the influence of their parents in enforcing study rules and having a generally healthy attitude toward

school. Although the under achiever gave parental attitude as a reason for his failure only once, it was implied in almost every case.

The third category was extraclass activities. A few students kept their grades up because they had to in order to remain eligible for sports and other extraclass activities. One student listed the time involved in these activities as the reason for his failure to get his work done.

The last contributing factor the students gave for their success or failure was the concept they had of themselves. The confident student was the over achiever. He knew he could do well and he did. He had a sense of pride and self-satisfaction in his work. The under achiever also had a self concept but it was very negative. He had never done any better and didn't expect to in the future. The author feels this group is the one that accounts for the majority of school dropouts. Most reasons given could be rectified with a little help from home and cooperation from student and teacher. However, the self concept is a most difficult one to change without intensive counseling; something the average high school counselor is not trained for nor does he have the time.

This portion of the study was helpful because it pinpointed, in the students' own words, the reasons they

felt caused their deviation from the normal achievement
level of their ability group. It provided a "bird's eye
view" that the counselor should constantly seek in his
counseling relations. Only by knowing the student, and
how he feels, can the counselor work effectively or
efficiently with his client.

TABLE VIII

STUDENT REASONS FOR SUCCESS AND FAILURE TO ACHIEVE AT
THEIR ABILITY LEVEL (ALL NUMBERS ARE PERCENTAGES)

	Peers	Parents	Activities	Self-concept
Over	37	49	7	7
Under	18	54	7	21

SUMMARY OF THE STUDY

In all, three tests given at Junction City Junior
High School were studied. Included in the study were the
Otis Quick-Scoring Mental Ability Test, the Differential
Aptitude Test, and the California Algebraic Aptitude Test.
Resulting from this study were five expectancy or predic-
tion tables which may be used in counseling students and
discussing test scores with parents, teachers, administra-
tors, and students. The tables have been found to be very
helpful to the counselor and very meaningful to the
counselee.

The advantage of the prediction table over the
correlation coefficient is its ease of interpretation to
the layman. It is readily understandable by all who have
used it. The students can see, firsthand, what has
happened in the past to other students who have scored like
they did on the various standardized tests. It is not a
damning weapon, as an I.Q. score might be. It offers a
realistic self-appraisal to the student because he can see
what will be required of him to make a certain grade. He
does not have a defeatist attitude about not having the
ability to do work beyond his ability. The expectancy
table is an optimistic look at what has been done and what

can be done. Just because a person has a 100 I.Q. does not
mean that he is limited to a C in his academic subjects.
Based on the Otis test, he can see that 10 to 20 per cent
of students scoring in that range made B's in these sub-
jects and some went to A's.

Conversely, he can see what he must do to make those
grades. He understands if he slips by without studying, he
can also fall into the 20 to 30 per cent who earned D's.
It is all up to him.

The prediction table can be a very useful tool to
the counselor. It is well worth the time and effort that
goes into the construction and once the initial research
has been completed, it can be brought up to date every year
or two with a minimum of effort. If a school gives a test,
the counselor should be able to interpret it in terms that
can be understood by all.

The prediction table aids in the identification of
the over and under achiever, allowing the counseling
relationship to become much more meaningful to the client,
thus the effectiveness of the total counseling program is
increased.

BIBLIOGRAPHY

BIBLIOGRAPHY

Bennett, George K., Harold G. Seashore, and Alexander G. Wesman. _Differential Aptitude Tests Manual_. New York: The Psychological Corporation, 1966.

Cronbach, Lee J. _Essentials of Psychological Testing_. New York: Harper and Row, 1960.

Lyman, Howard B. _Test Scores and What They Mean_. Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1963.

Ricks, James H. "On Telling Parents About Test Results," _Test Service Bulletin_, Harold G. Seashore, editor. New York: The Psychological Corporation, Vol. 54, 1959.

Wesman, Alexander G. "Expectancy Tables--A Way of Interpreting Test Validity," _Test Service Bulletin_, Harold G. Seashore, editor. New York: The Psychological Corporation, Vol. 38, 1949.

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AN ABSTRACT OF A MASTER'S REPORT

submitted in partial fulfillment of the

requirements for the degree

MASTER OF SCIENCE

College of Education

Three standardized tests were studied in this report:
the Differential Aptitude Test, the Otis Quick-Scoring
Mental Ability, and the California Algebraic Aptitude.
These tests were chosen because they are the tests given
at the various grade levels in the Junction City Junior
High School. The study was done to make these test scores
more meaningful to the client and to facilitate the ability
grouping program at the school.

The Verbal Reasoning-Numerical Ability combined
score yielded by the Differential Aptitude Test was compared
to achievement in English, Science, Mathematics and Social
Studies at the ninth grade level. The Otis was compared to
the same four academic subjects at the seventh grade level.
Also, the Verbal Reasoning score was used separately and
compared to earned grades in tenth grade English and the
Numerical Ability score with earned grades in tenth grade
Algebra and/or Geometry. The California Algebraic Aptitude
score, given in grade eight, was compared to earned grades
in ninth grade Algebra I. The results of these comparisons
were five prediction, or expectancy, tables that showed how
students in similar ability ranges scored in the various
subjects. Instead of results given in percentiles, I.Q.
scores, or stanines, now each test gives a common result
that can be readily understood.

From this expectancy table, the student, parent, or

teacher can see what has happened in the past to students
who scored like he did on the various tests. A person is
not stereotyped by being told that he has an I.Q. of 100.
This is not meaningful to most people unschooled in test-
ing. Instead, the table shows that, of the people who
scored like he did on this test; 15% got A's in English,
25% got B's, 45% got C's, 10% got D's, and 5% got F's.
From this information, he can see that he is not bound to,
nor guaranteed, a C grade just because he has the mean
score of 100. He can see that better grades are possible
if he wants to earn them and he can also see what might
happen to him if he fails to apply himself. A test score
is no longer damning, it is meaningful. Also, he is not
compared to national norms, but to students in the same
school he is attending. I have found this to be a most
effective way to interpret test scores and have had very
good results using the tables in my counseling relation-
ships. The student can make up his own mind which level
he wants to strive for. As a result of this study, test
scores are now an integral part of the grouping program.

A secondary goal of the study was to aid the coun-
selor or teacher in identifying over and under achievers.
In this study twenty-nine over and under achievers were
identified and interviewed. From these interviews, infor-
mation was yielded giving reasons for their achievement

level. The study found the most common reason to be parental influence, whether positive or negative.

In all, this study analyzed the test scores of almost four thousand students. With a sampling this large, the results are reasonably reliable, thus improving the effectiveness of the counseling program at Junction City.