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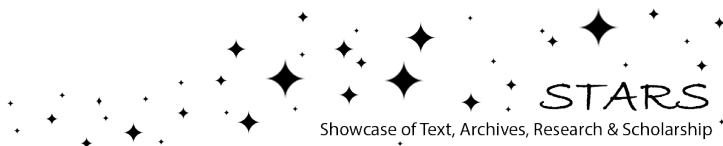
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ENGLISH LANGUAGE PROFICIENCY AS A PREDICTOR OF
ACADEMIC PERFORMANCE FOR U.S. NAVY HISPANIC RECRUITS

BY

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B.A., Florida International University, 1978

THESIS

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requirements for the degree of Master of Science:
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Introduction

The field of English as a Second Language (ESL) training has developed rapidly in the past few years. This is because the United States is becoming increasingly involved with other countries and cultures, and because of an influx of immigrants and migrants to America. Schools, industries, government and military services are being required to provide ESL training ranging from in-house courses to long-term training. Some organizations are offering job-related ESL training programs with the goal of improving job performance.

This study deals with ESL training in the United States Navy. Mainly because of the cost involved in training recruits (approximately \$100 per day per recruit) any training program for recruits has to relate directly to the mission of the Navy. Therefore, the ESL studies most relevant to the present study are those that concentrate on teaching English to enable the learner to do a particular job. Most ESL training programs in the U.S. are general in nature, with the purpose of having the student acquire a general knowledge and understanding of the English language (such as grammar, and oral and written skills). They usually have no particular job-relevant orientation.

Legislation passed by the U.S. Congress in 1974 (the Vocational Education Act, Part 5) mandated bilingual vocational training for limited English-speaking groups. This legislation was part of a growing movement in this country to provide job-related ESL training.

Non-Military Job-Related ESL Programs

Several educational institutions and organizations have instituted programs which illustrate vocational ESL training. Crandall (1979) provides a description of an ideal vocational ESL program. She stresses the importance of: (a) behavioral objectives that are related to the particular job, (b) the assessment and teaching of the vocabulary of the particular job, (c) functionally oriented job counseling, (d) the development of skills already acquired and (e) the recognition of cultural differences.

Several typical programs, sponsored by city and state educational agencies, have incorporated the features subsequently suggested by Crandall. One described by Sussman (1969) and conducted by the New York City Board of Education, Manpower Development Training Program (MDTP) (Federally funded prevocational job training program) emphasized the necessity of practicing English and allowed only English to be spoken in class. Students were grouped in shop classes according to their vocational aptitudes. The program

consisted basically of oral English language structure, reading comprehension, language-oriented arithmetic and reading and discussion of work-related problems.

The Vocational ESL Master Plan published by the San Francisco Community College District (1976) divided trainees into groups based on several criteria including employment status, type of employment, language level and background. The plan outlined the curriculum and its divisions which were defined in terms of general, language and contextual objectives. It also stressed that the purpose of vocational ESL training is to achieve language and context objectives simultaneously, and to reduce the time and immigrant will take to become employed.

In September of 1976, the Rochester City School District opened the "Bilingual Vocational and Continuing Education Program-Adult" with the objective of upgrading the occupational and English language skills of Spanish-speaking adults. The program consisted of courses in cosmetology, mechanics, and electricity in English and Spanish, instruction in English as a second language, and counseling in occupational areas. Community agencies were positive about the program (Rochester City School District, 1977).

In industry, Jantzen Company began a pilot program to develop language skills of their ESL speakers. The

emphasis was on training the worker to function effectively in the working environment. The program concentrated on teaching English required to perform the routine activities of operating garment industry machinery and performing routine jobs. Training was considered highly effective (Laglin, 1977).

Military Job-Relevant ESL Programs

Each of the military services has an Equal Employment Opportunity (EEO) program requiring the recruiting of minorities to match the proportion in the U.S. population. Since the Hispanic population is growing, the military services are having to institute ESL training programs. The U.S. Army and U.S. Air Force have already done this and the U.S. Navy is considering such a program.

The Defense Language Institute (DLI) is the U.S. Department of Defense Agency with the charter of coordinating all ESL programs for the military services. DLI has developed materials and curricula used by the Army and Air Force. The Air Force sends basic trainees to DLI's school located at Lackland AFB, Texas. DLI's American Language Course curriculum (ALC) has three purposes: to develop language skills, to stress functional communication and to provide flexibility to meet training needs. The design of the program consists of an intensive classroom and laboratory institution

which stresses the teaching of functional vocabulary.

In order to screen foreign military personnel for English language training programs, DLI developed the English Comprehension Level (ECL) test. The test measures English proficiency to determine whether the student should be assigned directly to technical training or needs preliminary English language training. The test also is suitable for testing U.S. military personnel and can be used to place military personnel in English language classes. The test is described in a DLI regulation published in 1979.

Erchinger (1968) evaluated the ECL as a predictor of foreign student training achievement. A high correlation between the ECL and final academic training grades ($r=.74$) indicated that the ECL was a good prediction device for this purpose.

Madane (Note 1) of the DLI found correlations of $r=.80$ between the ECL test and the Test of English as a Foreign Language (TOEFL) and $r=.79$ between the ECL test and the Test of Adult Basic Education reading rate. These correlations are additional indications of the ability of the ECL test to predict English proficiency.

The U.S. Army has established an ESL training program as part of its Basic Skills Education Program (BSEP). The BSEP program has three modules, remedial

reading, remedial mathematics and ESL, and has become important because of the low aptitude of men currently enlisting in the U.S. Army. The ESL module is specifically geared to teach English that soldiers need to perform their jobs. The ESL module of BSEP is largely based on materials and curriculum provided by DLI's English Language Center. Candidates for the program are screened by the ECL test. (U.S. Department of the Army, 1978). Those who score less than the established DLI cut off score of 70, are referred to the program. A score over 70 is considered as having met minimal standards to start technical training.

In the U.S. Navy, there is no existing program but there is a strong perceived need for it. The U.S. Navy Training Analysis and Evaluation Group (TAEG) has been asked to evaluate the extent of the Navy's problem with recruits who speak English as a second language. The goals are to determine a screening procedure that could be used in such an ESL program and to gain insights into the curriculum and structure of a future Navy ESL program.

The U.S. Navy has already established an Academic Remedial Training (ART) program with the purpose of improving the reading skills of recruits with reading deficiencies since these deficiencies have been demonstrated to interfere with the successful completion of

recruit training (Duffy, 1976). The aim of the ART program is to raise the reading level of recruits to allow them to graduate from recruit training (Kincaid and Curry, 1979).

In view of the above discussion and considering that there has not been a prior assessment of Hispanic recruits in the Navy, the present study tests two hypotheses. (a) English proficiency of Spanish-speaking recruits is a predictor of recruit academic performance. (b) Certain identifiable groups of Spanish-speaking recruits especially need ESL training.

Method

Subjects

The subjects were 89 male and 13 female Spanish-speaking recruits undergoing recruit training at the Naval Training Center, Orlando, Florida. The total sample of 102 recruits was comprised of two groups: those who were assigned to the ART program (N=33) and those who were not (N=69). For the purpose of the data analysis, subjects were categorized in two additional ways: (a) whether or not they had experienced any prior education in the U.S. and (b) ethnic background (Puerto Rican, Mexican-American or some other Hispanic background). Fluency in Spanish was determined by a short interview conducted in Spanish to assess communication skills and predominancy in the primary language.

Data Sources

Data were gathered from (a) standardized tests, (b) academic tests administered during recruit training, (c) questionnaire data obtained from recruits, and (d) questionnaire data obtained from ART instructors and Company Commanders (who train companies of 80 recruits).

Standardized tests. Two tests used in the study are routinely administered to all recruits. These are the Armed Services Vocational Aptitude Battery (ASVAB) and the Gates-MacGinitie Reading Test, Survey D (1976). Two scores from the ASVAB were used: Word Knowledge (WK) and a composite score of several subtests which provide an estimate of the Armed Forces Qualifications Test (AFQT) score. The Gates-MacGinitie score is used for selecting recruits for ART. Those scoring between a grade level of 4.0 to 6.0 are automatically referred to ART.

The ECL test was also administered to all subjects in the study. This test contains a listening section and a reading section. The listening section is administered via an audio tape.

Subjects in ART were administered a series of other tests in addition to the ASVAB, ECL, and Gates-MacGinitie tests, to assess reading and listening ability in English and Spanish. These were (a) The Language Assessment Battery (LAB) published by the Houghton Mifflin Company (1976) with comparable forms in both Spanish and English (both of which were used in the study), (b) Harris and Palmer's Comprehensive English Language Test (CELT) (1979), and (c) The Inter-American Series Test published by Guidance Testing Associates (1962).

A description of these tests and the method of administration is provided in Appendix D.

Recruit academic performance. All subjects in the sample were tracked through recruit training and their scores in the four academic tests administered to all recruit trainees were recorded.

Two criterions were considered most important: (a) the score on the Recruit Final Academic Test (RFAT) which is administered during the final week of training, and (b) the satisfactory completion of recruit training. If the recruit did not graduate, the reason was recorded.

Questionnaires. Separate questionnaires were administered: (a) to Spanish-speaking recruits and (b) to individuals who are responsible for the training of Spanish-speaking recruits. The latter were Company Commanders and ART instructors at NTC Orlando. The questionnaires, together with responses are contained in Appendices A, B, and C.

The questionnaire given to Spanish-speaking recruits (Appendix A) provided information about the country of origin, prior education in the U.S., years of education conducted in English (as opposed to Spanish), and use of English and Spanish in the home and social situations. Puerto Ricans comprised the largest ethnic group in the study (51 of the 102 subjects); Mexican-Americans were the second largest

group (22 of 102). Seventy-six of the 102 subjects had prior education in the U.S. while 26 did not. More than half of the sample (57 of 102) spoke only Spanish at home. About a third (36 to 102) greatly preferred speaking Spanish in social situations while an additional 19 of the 102 were comfortable speaking either English or Spanish socially.

A list of tests in the battery and criterion measures used in the statistical analysis are shown in Table 1.

Table 1

Test Battery and Criterion Measures

Group	Tests	Criteria
Non-ART (N=69)	English Comprehension Level Test	Academic Tests in Recruit Training (Particularly Final Test)
	Gates-MacGinitie Reading Test	Graduation from Recruit Training
	ASVAB (AFQT and Word Knowledge)	
ART (N=33)	English Comprehension Level Test	Academic Tests in Recruit Training (Particularly Final Test)
	Gates-MacGinitie Reading Test	Graduation from Recruit Training
	ASVAB (AFQT and Word Knowledge)	
	Language Assessment Battery (English and Spanish)	
	Inter-American Series Tests of Reading	
	Comprehensive English Language Test	

Results

Correlations

The inter-correlations between ASVAB Word Knowledge, AFQT, ECL, Gates-MacGinitie Reading Test scores and the two criterion measures (i.e., RFAT and Graduation) for the total sample are provided in Table 2. Of particular interest is the fact that the Gates-MacGinitie Reading Test and ECL scores are fairly highly correlated ($r=.64$). Table 3 contains inter-correlations for all tests and the two criterion measures for the 33 subjects referred to ART. It can be seen that the LAB-English, CELT and ECL tests (all tests of listening ability) are highly correlated with correlation coefficients ranging from $r=.77$ to $r=.86$. In contrast to the total sample, the correlation between the Gates-MacGinitie Reading Test and ECL scores for the ART group is only $r=.26$. This indicated that for the ART group, these tests were nearly independent measures. Table 4 contains inter-correlations for the subgroup with no prior U.S. education.

Regression Analysis

In order to test hypothesis (a) a series of step-wise multiple regressions were performed using the data from the total sample of 102 subjects and for

Table 2
All Subjects (N=102)

Correlation Matrix

	1	2	3	4	5	6
ECL	1	1.0000				
Gates-MacGinitie	2	.6401**	1.0000			
ASVAB-WK	3	.3969**	.5514**	1.0000		
AFQT	4	.4139**	.5978**	.7499**	1.0000	
RFAT	5	.3547**	.4525**	.5766**	.5015**	1.0000
Graduation	6	.5051**	.3583**	.1904*	.2234*	.0000
						1.0000

a
n=83.
*p < .05.
**p < .01.

Table 3

ART Subgroup (N=33)

Correlation Matrix

	1	2	3	4	5	6	7
ECL	1	1.0000					
Gates-MacGinitie	2	.2627	1.0000				
ASVAB-WK	3	-.1735	.1611	1.0000			
AFQT	4	-.0159	.0104	.5101**	1.0000		
CELT	5	.6923**	.2137	.1358	.0800	1.0000	
RFAT	6	-.0655	-.3606	-.2704	-.0576	1.0000	
Graduation	7	.4967**	-.1865	.1002	.3265*	.0000	1.0000

^a
n=24.

*p < .05.

**p < .01.

Table 4

Non U.S. Studies (N=26)

Correlation Matrix

	1	2	3	4	5	6
ECL	1	1.0000				
Gates-MacGinitie	2	.1759	1.0000			
ASVAB-WK	3	.0169	.1257	1.0000		
AFQT	4	.4182	.1687	.5737**	1.0000	
RFAT	5	-.1579	-.3975	.0314	-.4904	1.0000
Graduation	6	.3435	.4247	.1138	.2135	.0000
						1.0000

^a

n=15.

**p < .01.

subgroups who had no prior U.S. education and who were referred to the ART program.

Table 5 summarizes the results obtained from all the subgroups using both criteria: (a) RFAT and (b) graduated/not graduated. It can be noted that the ASVAB-WK accounted for 33% of the variability for success in recruit training defined by the final academic tests. However, when considering graduation as the criterion of success, the ECL accounted for 24.5% of the variance.

For the group that was referred to ART (Table 6) and using RFAT as the criterion, the Gates-MacGinitie test is the best predictor accounting for 13% of the variance. Using graduation as the criterion the ECL test is the best predictor accounting for 24.6% of the variance.

Table 7 summarizes results for those subgroups having no prior U.S. education. Results indicated that AFQT, ASVAB-WK, ECL and Gates-MacGinitie tests combined contributed 46.6% of the variance, when using the RFAT as the criterion. However, when using graduation as the criterion, the Gates-MacGinitie and ECL together contributed 24.7% of the variance.

Appendix E contains the complete regression analysis.

Tests Means and Profiles of Subgroups

In order to test hypothesis (b), the total sample

Table 5
 All Subjects (N=102)
 Step-Wise Multiple Regression
 Dependent Variable: RFAT (N=83)

Variable	R-Square	Variance Added
ASVAB-WK*	.33	33%
Gates-MacGinitie	.35	2%
ECL	.362	1.2%
AFQT	.365	.3%
Dependent Variable: Graduation (N=102)		
ECL*	.245	24.5%
AFQT	.249	.4%
ASVAB-WK	.254	.5%

*p < .0001.

Table 6
 ART Subgroup (N=33)
 Step-Wise Multiple Regression
 Dependent Variable: RFAT (N=24)

Variable	R-Square	Variance Added
Gates-MacGinitie	.130	13%
AFQT	.220	9%
ASVAB-WK	.317	9.7%
CELT	.334	1.7%
ECL	.349	1.5%
Dependent Variable: Graduation (N=33)		
ECL*	.246	24.6%
AFQT	.258	1.2%
ASVAB-WK	.292	3.4%
Gates-MacGinitie	.300	.8%

*p < .05.

Table 7
 Non U.S. Studies (N=26)
 Step-Wise Multiple Regression
 Dependent Variable: RFAT (N=15)

Variable	R-Square	Variance Added
AFQT	.240	24%
ASVAB-WK	.387	14.7%
ECL	.437	5%
Gates-MacGinitie	.466	2.9%

Dependent Variable: Graduation (N=26)		
Variable	R-Square	Variance Added
Gates-MacGinitie*	.158	15.8%
ECL	.247	8.9%
AFQT	.262	1.5%

*p < .05.

was divided into three categories. Table 8 provides a profile of test scores, demographic variables, and performance variables for the sample of 102 subjects categorized in three ways: (a) ART referral, (b) prior U.S. education and, (c) ethnic background.

The overall reading grade level of the total sample as determined by the Gates-MacGinitie Reading Test was 7.5. Two subgroups had average reading grade levels that could cause difficulty in recruit training (below sixth grade). The first subgroup comprised those referred to ART with an average grade level of 5.0. The second subgroup comprised those with no prior U.S. education with an average grade level of 5.4. The overall mean ECL score for the total sample was 79.4 which is nearly 10 points above what the DLI has established as the cutoff score for this test. It is DLI's policy to refer foreign military troops who score below 70 on the test for English language training before starting military technical training in the U.S. Those who score over 70 on the test are considered to have met minimum standards to start technical training. Two subgroups had a mean ECL score of below 70: Those referred to ART (65.4), and those with no prior U.S. education (56.9). However, it should be noted that these are not independent subgroups since 15 of 26 recruits with no U.S. education were referred

Table 8

Profiles of Subgroups (Mean Test Scores, ART Referral, and Recruit Graduation)

	Number	Reading Grade Level	ECL	ASVAB-WK AFQT	Referred to ART	Did Not Graduate From Recruit Training
ART Referral						
Yes	33	5.0	65.4	44.2	40.1	N/A
No	69	8.7	86.1	50.1	53.8	N/A
Prior U.S. Education						
Yes	76	8.3	87.1	48.7	50.8	18/76 (26.6%)
No	26	5.4	56.9	46.5	46.1	15/26 (57.6%)
Ethnic Background						
Puerto Rican	51	7.0	71.9	47.7	49.9	19/51 (37.2%)
Mexican-American	28	8.6	89.7	49.4	48.1	8/28 (28.5%)
						15/51 (29.4%)
						2/28 (7.1%)

Table 8 (Continued)

	Number	Reading Grade Level	ECL	ASVAB-WK	AFQT	Referred to ART	Did Not Graduate From Recruit Training
Other	23	7.3	79.6	48.9	50.9	6/23 (26.0%)	2/23 (8.7%)
Overall Means and Totals	102	7.5	79.4	48.2	49.6	33/102 (32.4%)	19/102 (18.6%)
Approximate Navy Means	N/A	10.0	N/A	54	59	4%	10-15%

to ART. The mean ECL score for Puerto Ricans was 71.9 as compared with 89.7 for the Mexican-American subgroup.

ASVAB Word Knowledge mean score for the sample was 48.2. The mean score for the subgroup referred to ART was 44.2. The overall mean AFQT score for the sample was 49.6.

Table 9 provides the mean and standard deviation of predictors and criteria for the different subgroups.

Questionnaire Data

Eleven of the 18 Company Commanders who answered the questionnaire indicated a need for some form of English language remediation. Each Company Commander responding to the questionnaire had "personally known ...recruits...who seem to fit the ESL category."

Company Commanders also said that English deficiencies in these recruits were causing difficult times during training.

Also, four ART instructors and one administrator responded to a questionnaire containing the same types of questions as given to the company commanders.

All felt that some form of remediation is necessary, and that the current ART curriculum was not appropriate for ESL recruits.

Attrition

Nineteen of the 102 subjects were discharged prior

Table 9

Means and Standard Deviations
of Predictors and Criteria
for the Different Subgroups

All Subjects

Predictors	N	Mean	S.D.	Criteria	N	Mean	S.D.
ECL	102	79.4	15.5	RFAT	83	2.9	.33
Gates-MacGinitie	101	7.5	3.0	Graduation	102	.81	.39
ASVAB-WK	100	48.2	7.0				
AFQT	102	49.6	13.8				
<u>ART Subgroup</u>							
ECL	33	65.4	19.3	RFAT	24	2.7	.26
Gates-MacGinitie	33	5.0	1.5	Graduation	33	.72	.45
ASVAB-WK	33	44.2	5.4				
AFQT	33	40.8	8.7				
CELT	33	29.3	10.2				

Table 9 (Continued)

Predictors	N	Mean	S.D.	Criteria	N	Mean	S.D.
<u>Non U.S. Studies</u>							
ECL	26	56.9	16.9	RFAT	15	2.7	.30
Gates-MacGinitie	26	5.4	2.1	Graduation	26	.57	.50
ASVAB-WK	25	46.5	4.8				
AFQT	26	46.1	10.1				

to completion of recruit training. The reason for each discharge was obtained from the recruits' files and from interviews with ART instructors, Company Commanders and in some cases, the recruits.

Reason for each discharge, together with a judgment of whether or not the discharge was related to poor skills in English is shown in Table 10. Fourteen of 19 discharges were judged to be deficient in the English language. Records for those 14 recruits contained many references to poor English skills. Representative comments directly quoted from recruits records include the following: "Cannot understand English well enough to complete recruit training." "This recruit has a good attitude but simply cannot understand the English language." "Recruit is getting demotivated because of lack of progress -- very low comprehension level in English."

Another noteworthy result is that those recruits judged by the author to need English language training, defined by scoring less than 70 on the ECL test and/or less than 6.0 grade level on the Gates-MacGinitie Reading Test, failed an average of 1.8 Recruit Academic Tests (out of four) prior to graduation. In contrast, those judged not to need such training, failed an average of only .6 tests.

Table 10

Relationship of Discharges to English Deficiency

	<u>Number</u>
Related to English Deficiency	
Situational Reaction (Psychological)	1
Lack of Motivation (Military)	6
ART Failure	<u>7</u>
Total	14/19 (73.7%)
Not Related to English Deficiency	
Situational Reaction (Psychological)	1
Convenience of Government (Enuresis)	2
Medical (Orthopedic)	1
Medical (Psychiatric)	<u>1</u>
Total	5/19 (26.3%)

Discussion and Conclusions

The findings of this study suggest that adequate levels of English proficiency are necessary to perform successfully during recruit training. For the total sample tested, overall mean scores for the AFQT, Gates-MacGinitie Reading Test and ASVAB Word Knowledge were lower than recruits in general. Presumably, these low test scores are related to problems in recruit training, higher attrition rate, higher rate of referral to ART and more problems with the four academic tests encountered by the Hispanic recruits as compared to recruits in general.

Regression Analysis and Tests

Results from the regression analysis of the different subgroups indicate reading ability is necessary for successful academic performance in recruit training while listening ability is required to graduate from recruit training. Overall, the ECL was the best predictor of recruit performance for this sample. For the sample referred to ART, the Gates-MacGinitie Reading Test and the ECL test were not significantly correlated. Given that nearly all of these should have received ESL training this suggests that the measures complement each other for screening recruits with inadequate English language skills.

For the sample categorized as not having prior U.S. education, the AFQT, ASVAB-WK, ECL and Gates-MacGinitie accounted for 46.6% of the variance in RFAT. This relatively accurate prediction of the RFAT criterion score could have been related to several factors. First, the sample size was small (N=15). Also, the fact that this criterion score (RFAT) was assessed via a paper-pencil measure as were the predictors could have enhanced the degree of relationship. On the other hand, the relatively low variability in RFAT scores tended to decrease the relationship between predictors and the criterion measure. At any rate, the predictors accounted for almost half of the variance in RFAT scores.

When using graduation, the Gates-MacGinitie, ECL and AFQT accounted for 26.2% of the variance. This relatively low degree of relationship between predictors and the criterion measure of graduation may indicate that to graduate from recruit training requires abilities and characteristics other than language for this particular subgroup.

Questionnaire Data

Other indications of difficulty during recruit training were mentioned by Company Commanders, who felt the need for language training due to problems Hispanic recruits face during recruit training.

Instructors at ART agreed that Hispanic recruits had more difficulties than the general recruit population and felt that the ART curriculum was not adequate to solve those problems.

ESL Training

English as a second language training could alleviate difficulties that Hispanic recruits face during recruit training.

The current ART program is primarily a remedial reading program (plus a study skills module); it provides only part of the language training needed for recruits who speak English as a second language to successfully complete recruit training. Recruits are currently screened primarily with a reading test with no assessment of oral English language ability.

Most ESL programs stress the teaching of speaking and listening and usually are functionally oriented. This suggests that an ESL program for the U.S. Navy should be Navy-relevant, stressing vocabulary encountered in a Navy environment and using curriculum materials directly related to recruit training objectives.

The data of the current study suggest Hispanic recruits with no prior U.S. education would benefit the most from ESL training. This subgroup had the lowest scores on tests, highest referral to ART and the highest rate of attrition. All of these recruits

also indicated in response to the questionnaire that Spanish is the language they use predominantly at home and in social contexts. Further, nearly all reported low familiarity with oral English.

In summary, both hypothesis were supported, that (a) English language proficiency predicts academic performance for U.S. Navy Hispanic recruits and (b) that certain identifiable groups, particularly those with no U.S. education, would profit from English language training.

Appendices

Appendix A

This appendix contains the questionnaire given to each of the 102 recruits in the study and a tabulation of responses.

Personal Data

(Información Personal)

Name: _____
(Nombre)

Social Security #: _____
(# del Seguro Social)

Place of Birth (or origin):
(Lugar de nacimiento (u origen))

Puerto Rico: 51

Mexican-American: 28

Other: 23 (Virgin Islands, Peru, Colombia,
Argentina, etc.)

Age:
(Edad)

Range: 17-29

Average: 19.6

Years of Studies:
(Años de Estudio)

Range: 8-16 Years

Average: 12.2

Number of Years of English Study:
(# de años de estudio en ingles)

Range: 0-16 Years

Average: 9.8

Includes English/Spanish bilingual education or at least 2-3 hours of English instruction per day.

Appendix A (Continued)

Place of Study(ies):
(Lugar de Estudio(s)):

Included: New York, New Jersey, Texas, Mexico,
Puerto Rico, Arizona, Florida,
California.

What Language Do You Speak Predominantly In A Social
Situation, Spanish Or English?

(Qué idioma habla Ud. predominantemente, español o
ingles?)

Total

Spanish: 36/102 (35.3%)

English: 47/102 (46.1%)

Equal : 19/102 (18.6%)

ART Group

Spanish: 21/33 (63.6%)

English: 7/33 (21.2%)

Equal : 5/33 (15.2%)

No Prior U.S. Studies

Spanish: 23/26 (88.5%)

English: 0

Equal : 3/26 (11.5%)

Language Spoken at Home:
(Idioma que habla Ud. en el Hogar)

Spanish: 57/102 (55.9%)

English: 10/102 (9.8%)

Both : 35/102 (34.3%)

Why Did You Join The Navy?
(Porque se enlisto Ud. en la Naval?)

25/102 (24.5%) Recruits Answered in Spanish

Appendix A (Continued)

Representative responses are directly quoted.

- * To study
- * To learn English
- * ... good pay
- * To continue my studies in electronics
- * To learn a trade or skill
- * To get a job
- * To travel, see the world
- * To serve my country
- * The Navy offers me a better future
- * For adventure...
- * I like the military, the Navy
- * To change my life
- * To get some discipline.

Appendix B

This questionnaire was administered to 18 Company Commanders at RTC Orlando. Responses to the questionnaire are contained below and are quoted directly.

1. From your experience do you feel there is a need for an ESL program?

Yes: 11

No : 7

2. What, if any, specific problems have you encountered?

- * Not understanding basic instructions. Recruits don't seem to understand instructions and questions given by MED inspectors.
- * Slow in learning and keeping up with the average recruit academically.
- * Spanish-speaking people that cannot comprehend the written English language very well when the written questions ask for a specific answer.
- * People, especially of Spanish background, having problems understanding and reading English.
- * Getting Spanish-speaking personnel to understand what the CC is teaching.
- * Personnel in positions like instructors are very difficult to understand.
- * One recruit recycled from present training unit basically because of his inability to read/understand English.

Appendix B (Continued)

- * Problems in the understanding and speaking of the English language appear to be prevalent among recruits from the Virgin Islands and Puerto Rico. It is extremely difficult to communicate with them and I'm not sure that they comprehend what is being said.
 - * Recruits with a language problem have much trouble performing within training unit standards as it requires quick thought, quick comprehension at times, and a thorough comprehension of the task at hand. Having difficulty understanding English, recruits have a problem comprehending the task or situation as a whole, not to speak of lesser details and tasks involved. These recruits also are often unable to make themselves understood and meet with frustrations at this point.
3. How long have you been a CC and how many recruits have you personally known who seem to fit the ESL category?
- * 4 (in two years)
 - * 6 (in one year)
 - * 2 (in two years)
 - * 2 (in two months)
 - * 6 (in two and a half years)

Appendix B (Continued)

- * 6 (in two months)
- * 1 (in every training unit)
- * 10 (in three and a half years)
- * 40 (in 5 training units during 20 months)
- * 6 (in two and a half years)

4. Comments and recommendations are invited.

- * Maybe a program like ESL in conjunction with Academic Remedial Training would help those individuals.
- * I feel the ESL problem should be handled prior to recruit training.
- * I don't feel that it's our responsibility to teach the English language to a recruit. The recruit should be able to speak, read, and comprehend English before he gets here. This is the job of our school system. A foreign individual should be screened more closely by the recruiter and the AFEEES for suitability to enter the Armed Forces. A single test could be devised and administered there. I can't see us wasting our time.
- * I feel that this ESL program would be a great help to many of the Spanish-American; however, it should be given to them prior to arrival at RTC.

Appendix B (Continued)

- * I strongly feel that understanding or speaking English should be a testable prerequisite prior to entering the Navy. Let's not spend more tax dollars than necessary.
- * Insure that entrance exams are administered properly. Place personnel on Delayed Entry Program Program (DEP) for English classes.
- * I feel that clothes folding/stowing, and infantry are basically no problem, with what English recruits are taught in their homelands. If a program is instituted I would like to see Naval terminology taught so that when a recruit goes to the Fleet he/she may converse in English when dealing with Navy-oriented matters. I feel a better screening process at the AFEES station would tend to eliminate this problem in the first place. If a recruit can pass the entrance test then he/she should already have a working knowledge of the English language.
- * I feel that recruits or persons interested in joining the Navy should meet the required entrance examinations before allowed to proceed in the Navy. Taking the Navy's overall mission and its importance into consideration, the fact that this is an English-speaking Navy and all publications,

Appendix B (Continued)

* manuals, etc. are written in English, and that a thorough understanding of the language used is mandatory for performance of tasks assigned and to be assigned, that "stopgap" measures are ineffective overall. I believe such persons should be encouraged by prospective recruiters to build their language skills and then take the entrance test, i.e., ASVAB.

Appendix C

This questionnaire was administered to four Academic Remedial Training (ART) instructors and one administrator at RTC Orlando. Responses to the questions are contained below and are quoted directly.

1. From your experience do you feel there is a need for an ESL program?

- * Yes. It is evident from the incidence of Hispanic recruits in ART and those who experience difficulties in training without ever being referred to ART that we do receive recruits with ESL problems.
- * Yes.
- * Definitely. There is a need for the program because we are getting a large number of Hispanics through our ART program that have some English problems.
- * Only if it expands upon the reading and writing skills as well as the speaking and listening skills.
- * Dealing with ESL students is a problem brought about by lowering of standards for entrance into the Navy, and has to be faced.

2. What, if any, specific problems have you encountered with ESL recruits?

Appendix C (Continued)

- * The primary problem is difficulty with oral/aural language skills. It evidences itself not only in the academic side of recruit training but also in the military side with inability/slowness in responding to orders and Company Commanders (CC) training.
- * Listening and speaking appear to be the major problem areas.
 - * a. Speaking English (communication)
 - b. Written English
 - c. English Word Knowledge (vocabulary)
 - d. Comprehension
- * Frustration due to lack of comprehension of what is going on around them - also their own limited ability to express themselves in English. Most of them, like the English-speaking recruits, have absolutely no concept of the working of boot camp; but, unlike the English speaking, their ability to understand explanations is seriously limited - leading to more frustration.
- * No one approach to teaching English seems to have worked. Each ESL student arrives in ART with different skill levels. The most common problem is difficulty with sight words. If they seem to understand sight words, they appear to have difficulty with the rhythm of the English language.

Appendix C (Continued)

3. Do you feel the current ART program is appropriate for ESL recruits?
- * No. The only way the current ART program can help is by chance - just by keeping recruits out of training for a period of time and forcing them to respond in an English-only environment. ART may, in fact, be demotivating since these recruits may not have a problem with reading skills.
 - * No, as the current ART program deals only with reading skills. Most ESL candidates need the verbal and listening skills of an ESL program.
 - * No. We should use the ART program for Hispanics as a reinforcement period prior to their being placed into a training unit or even into basic training.
 - * It is appropriate in that it does allow ESL recruits time out of regular training to learn the basics - how to cope with boot camp in general. It also does improve their English vocabularies and skills but ESL recruits need more emphasis on conversation.
 - * In the current ART program the ESL students suffer from a lack of concentrated conversation skills.

Appendix C (Continued)

4. What specific changes or recommendations would you suggest?

- * An ESL program focusing on language skills is a necessity. Involvement of the Defense Language Institute is to everyone's advantage. Learning from the Army's experiences in this area would be helpful in avoiding pitfalls. Consideration of English comprehension screening prior to enlistment, particularly in the Philippines and Puerto Rico and possibly of non-resident aliens, and the establishment of an ECL cut-score for enlistment should be considered (one high enough which would allow for effective remediation taking no more than five weeks in recruit training).
- * A separate progra for those who speak ESL.
- * I would recommend that all Hispanics be tested for the ESL program and a reading test be administered before they enter into Basic Training. All of this should be done at RIF as part of a screening process.
- *
 - a. More time devoted to listening and speaking skills.
 - b. Separate classroom for the above reason.
 - c. Mandated length of at least 4 weeks in ESL.
 - d. Longer (than for English-speaking) Study Skills module with emphasis on note taking.

Appendix C (Continued)

e. As total an immersion in English as possible
i.e., no bilingual approach to the program.

* I would suggest that there be an increased
emphasis on written and verbal vocabulary.

Appendix D

Each test described below was given to the 33 subjects referred to the Academic Remedial Training program. In addition to these tests, two others, the Armed Services Vocational Aptitude Battery (ASVAB) and the Gates-MacGinitie Reading Test, Survey D, were administered to all recruits.

Time and technique of administration (group vs. individual) are shown.

English Comprehension Level (ECL) Test

This was developed by the Defense Language Institute and is currently used by the U.S. Army as the screening test in their ESL program. The XCL test was designed to determine English language proficiency in listening and reading. The aural portion (Part I) of the examination, which is recorded on magnetic tape, is designed to determine the student's ability to understand spoken English. The reading portion (Part II) is designed to test the ability of a student to use correct grammatical forms and to understand written material.

The aural portion requires 33 minutes and is administered in a group. The reading portion requires 35 minutes and is administered in a group. Total time for administration is 68 minutes.

Language Assessment Battery

This was designed to assess the four components of the language process - reading, writing, listening, and speaking. Separate tests assess English and Spanish

Appendix D (Continued)

and the tests are appropriate for students in kindergarten through high school (K-12). The present study used Level III (7-12) in both versions, Spanish and English . Time and method of administration are the same for both the English and Spanish versions of the test.

The listening component requires 8 minutes and is administered in a group. The reading component requires 20 minutes and is administered in a group. The writing component requires 8 minutes and is administered in a group. The speaking component requires 5 minutes and is administered individually. Total time for administration is 41 minutes.

Inter-American Series Test of Reading

This was developed by Guidance Testing Associates and measures English vocabulary and comprehension for those who speak English as a second language.

The vocabulary component requires 10 minutes and is administered in a group. The speed of comprehension component requires 6 minutes and is administered in a group. The level of comprehension component requires 25 minutes and is administered in a group. Total time for administration is 41 minutes.

Comprehensive English Language Test (Listening Tape)

This is designed to provide a series of reliable and easy-to-administer tests for measuring the English language ability of non-native speakers. It is appropriate for high school, college, and adult programs of English as a second language (ESL) on the intermediate and advanced levels. It is useful as a placement test

Appendix D (Continued)

and as a measure of course achievement. In the present study, only the listening tape was administered. This test assesses the ability to comprehend short statements, questions, and dialogues as spoken by native speakers of English.

The listening tape requires 40 minutes and is administered in a group.

Appendix E

Summary of Step-Wise Multiple Regression

All Subjects

Dependent Variable: RFAT

Step Number 1

Variable Entered: ASVAB-WK

Multiple R-Square: .3324

<u>Variable</u>	<u>B-Value</u>	<u>Std. Error</u>	<u>F</u>	<u>Prob. > F</u>
Intercept	1.6125			
ASVABWK	.0	.0041	40.35	.0001

Step Number 2

Variable Entered: Gates-MacGinitie

Multiple R-Square: .3587

<u>Variable</u>	<u>B-Value</u>	<u>Std. Error</u>	<u>F</u>	<u>Prob. > F</u>
Intercept	1.6713			
Gates-MacGinitie	.0223	.0123	3.28	.0738
ASVABWK	.0215	.0049	19.21	.0001

Step Number 3

Variable Entered: ECL CON

Multiple R-Square: .3621

<u>Variable</u>	<u>B-Value</u>	<u>Std. Error</u>	<u>F</u>	<u>Prob. > F</u>
Intercept	1.5953			
ECL	.0001	.0024	.41	.5233
Gates-MacGinitie	.0183	.0139	1.74	.1912
ASVABWK	.0211	.0050	17.81	.0001

Appendix E (Continued)

Step Number 4

Variable Entered: AFQT

Multiple R-Square: .3653

<u>Variable</u>	<u>B-Value</u>	<u>Std. Error</u>	<u>F</u>	<u>Prob. > F</u>
Intercept	1.6244			
ECL	.0016	.0024	.46	.4992
Gates-MacGinitie	.0147	.0150	.99	.3235
ASVABWK	.0186	.0063	8.59	.0044
AFQT	.0021	.0034	.40	.5308

* 19 Observations deleted due to missing values.

All Subjects

Dependent Variable: Graduation

Step Number 1

Variable Entered: ECL

Multiple R-Square: .2457

<u>Variable</u>	<u>B-Value</u>	<u>Std. Error</u>	<u>F</u>	<u>Prob. > F</u>
Intercept	.0274			
ECL	.100	.0017	31.92	.0001

Step Number 2

Variable Entered: AFQT

Multiple R-Square: .2496

<u>Variable</u>	<u>B-Value</u>	<u>Std. Error</u>	<u>F</u>	<u>Prob. > F</u>
Intercept	-.0170			
ECL	.0094	.0019	22.72	.0001
AFQT	.0018	.0026	.51	.4772

Appendix E (Continued)

Step Number 3

Variable Entered: ASVAB-WK

Multiple R-Square: .2546

<u>Variable</u>	<u>B-Value</u>	<u>Std. Error</u>	<u>F</u>	<u>Prob. > F</u>
Intercept	.1418			
ECL	.0096	.0020	23.23	.0001
ASVABWK	- .0057	.0071	.65	.4233
AFQT	.0039	.0037	1.15	.2867

Non U.S. Studies

Dependent Variable: RFAT

Step Number 1

Variable Entered: AFQT

Multiple R-Square: .2404

<u>Variable</u>	<u>B-Value</u>	<u>Std. Error</u>	<u>F</u>	<u>Prob. > F</u>
Intercept	3.5197			
AFQT	- .0166	.0082	4.12	.0635

Step Number 2

Variable Entered: ASVAB-WK

Multiple R-Square: .3875

<u>Variable</u>	<u>B-Value</u>	<u>Std. Error</u>	<u>F</u>	<u>Prob. > F</u>
Intercept	2.4739			
ASVABWK	.0315	.0186	2.88	.1153
AFQT	- .0258	.0093	7.58	.0175

Appendix E (Continued)

Step Number 3

Variable Entered: ECL

Multiple R-Square: .4374

<u>Variable</u>	<u>B-Value</u>	<u>Std. Error</u>	<u>F</u>	<u>Prob. > F</u>
Intercept	2.2247			
ECL	.0051	.0052	.97	.3449
ASVABWK	.0364	.0192	3.58	.0851
AFQT	- .0320	.0113	8.01	.0164

Step Number 4

Variable Entered: Gates-MacGinitie

Multiple R-Square: .4664

<u>Variable</u>	<u>B-Value</u>	<u>Std. Error</u>	<u>F</u>	<u>Prob. > F</u>
Intercept	2.3043			
ECL	.0048	.0053	.82	.3873
Gates-MacGinitie	- .0252	.0342	.54	.4778
ASVABWK	.0351	.0197	3.16	.1058
AFQT	- .0287	.0124	5.37	.0429

* 11 Observations deleted.

Non U.S. Studies

Dependent Variable: Graduation

Step Number 1

Variable Entered: Gates-MacGinitie

Multiple R-Square: .1582

Appendix E (Continued)

Step Number 1 (Continued)

<u>Variable</u>	<u>B-Value</u>	<u>Std. Error</u>	<u>F</u>	<u>Prob. > F</u>
Intercept	.0863			
Gates-MacGinitie	.0932	.0448	4.32	.489

Step Number 2

Variable Entered: ECL

Multiple R-Square: .2470

<u>Variable</u>	<u>B-Value</u>	<u>Std. Error</u>	<u>F</u>	<u>Prob. > F</u>
Intercept	- .3384			
ECL	.0088	.0054	2.59	.1215
Gates-MacGinitie	.0796	.0441	3.24	.0854

Step Number 3

Variable Entered: AFQT

Multiple R-Square: .2624

<u>Variable</u>	<u>B-Value</u>	<u>Std. Error</u>	<u>F</u>	<u>Prob. > F</u>
Intercept	- .5446			
ECL	.0072	.0060	1.43	.2447
Gates-MacGinitie	.0734	.0457	2.59	.1228
AFQT	.0072	.109	.44	.5140

A.R.T. Subgroup

Dependent Variable: RFAT

Step Number 1

Variable Entered: Gates-MacGinitie

Multiple R-Square: .1300

Appendix E (Continued)

Step Number 1 (Continued)

<u>Variable</u>	<u>B-Value</u>	<u>Std. Error</u>	<u>F</u>	<u>Prob. > F</u>
Intercept	3.1508			
Gates-MacGinitie	- .0691	.0381	3.29	.0834

Step Number 2

Variable Entered: AFQT

Multiple R-Square: .2289

<u>Variable</u>	<u>B-Value</u>	<u>Std. Error</u>	<u>F</u>	<u>Prob. > F</u>
Intercept	3.6079			
Gates-MacGinitie	- .0761	.0369	4.24	.0520
AFQT	- .0101	.0061	2.69	.1157

Step Number 3

Variable Entered: ASVAB-WK

Multiple R-Square: .3171

<u>Variable</u>	<u>B-Value</u>	<u>Std. Error</u>	<u>F</u>	<u>Prob. > F</u>
Intercept	3.1438			
Gates-MacGinitie	- .0888	.0365	5.92	.0245
ASVABWK	.0172	.0107	2.58	.1237
AFQT	- .0155	.0068	5.16	.0343

Step Number 4

Variable Entered: CELT

Multiple R-Square: .3348

Appendix E (Continued)

Step Number 4 (Continued)

<u>Variable</u>	<u>B-Value</u>	<u>Std. Error</u>	<u>F</u>	<u>Prob. > F</u>
Intercept	3.0289			
Gates-MacGinitie	- .0978	.0390	6.27	.0216
ASVABWK	.0192	.0112	2.94	.1028
AFQT	- .0163	.0070	5.43	.0310
CELT	.0034	.0048	.51	.4856

* One Observation deleted.

A.R.T. Subgroup

Dependent Variable: Graduation

Step Number 1

Variable Entered: ECL

Multiple R-Square: .2467

<u>Variable</u>	<u>B-Value</u>	<u>Std. Error</u>	<u>F</u>	<u>Prob. > F</u>
Intercept	- .0329			
ECL	.119	.0036	10.16	.0033

Step Number 2

Variable Entered: AFQT

Multiple R-Square: .2585

<u>Variable</u>	<u>B-Value</u>	<u>Std. Error</u>	<u>F</u>	<u>Prob. > F</u>
Intercept	- .2651			
ECL	.0116	.0036	10.05	.0035
AFQT	.0056	.0081	.47	.4966

Appendix E (Continued)

Step Number 3

Variable Entered: ASVAB-WK

Multiple R-Square: .2923

<u>Variable</u>	<u>B-Value</u>	<u>Std. Error</u>	<u>F</u>	<u>Prob. > F</u>
Intercept	.3497			
ECL	.0108	.0037	8.44	.0070
ASVABWK	- .0179	.0152	1.39	.2486
AFQT	.0113	.0094	1.44	.2398

Step Number 4

Variable Entered: Gates-MacGinitie

Multiple R-Square: .3007

<u>Variable</u>	<u>B-Value</u>	<u>Std. Error</u>	<u>F</u>	<u>Prob. > F</u>
Intercept	.3248			
ECL	.0101	.0039	6.51	.0165
Gates-MacGinitie	.0285	.0490	.34	.5651
ASVABWK	- .0202	.0159	1.62	.2142
AFQT	.0120	.0096	1.55	.2231

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