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ABSTRACT

The Fort Hamilton High School (GRASP) Program in New York City was designed to offer bilingual instructional and supportive services to approximately 200 students who were Greek, Arabic, or Spanish. The program was intended for students considered dominant in their respective native languages. The program was set in the Bay Ridge section of Brooklyn in Fort Hamilton High School. The target population was drawn from grades nine through twelve. Students selected for the program received a curricular package containing native language instruction in the dominant languages, English as a second language, and instruction in mathematics, science and social studies. Other planned aspects of the program included provisions for staff development, parental involvement, and curriculum refinement. Results indicated that standardized test information was statistically significant in favor of the program. It was recommended that a systematic approach be undertaken to measure the native language arts skills of the students. (Author/AM)

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EVALUATION REPORT

Function No. 09-67619

FORT HAMILTON HIGH SCHOOL (GRASP)

SCHOOL YEAR 1975-1976

U S DEPARTMENT OF HEALTH,  
EDUCATION & WELFARE  
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PROGRAM EVALUATOR: FREDERICK SMITH

UDO 17174

An evaluation of a New York City school district  
educational project funded under Title VII of the  
Elementary and Secondary Education Act of 1965  
(PL 89-10) performed for the Board of Education  
of the City of New York for the 1975-76 school year.

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## Fort Hamilton High School (GRASP)

### Program Description

The Fort Hamilton High School (GRASP) program was designed to offer bilingual instructional and supportive services to approximately 200 students -- Greek (50) or Arabic (20) or Spanish (120). The program was intended for students considered dominant in their respective native languages. The proposal said that students would be identified through diagnostic tests, guidance interviews, teacher recommendations, parent requests, or referral from previous schools. The new program was funded for about \$144,000 under Title VII and was designed to run from September through June, school year '75-'76.

The program was set in the Bay Ridge section of Brooklyn in Fort Hamilton High School. Fort Hamilton has a student body of about 4,300 students. The target population would be drawn from grades nine through twelve. Students selected for the program were to receive a curricular package containing native language instruction in the dominant languages, English as a Second Language, and instruction in mathematics, science and social studies. This package was conceived of as the instructional program.

Other planned aspects of the program included provisions for staff development, parental involvement and curriculum refinement. The staff development was to consist of training structured through workshops, conferences and university contact. Parental participation was sought in meetings, workshops and parent advisory group activities. Work on curriculum was aimed at finding bilingual materials, adapting existing ones, and developing local materials. The aim was to begin a distillation process that would result in appropriate instructional approaches for the Greek, Arabic, and Spanish student subpopulations. Eventually, it was hoped that such efforts would benefit these groups outside of Fort Hamilton High School.

As the main educational thrust of the program, students were to be offered learning experiences in both their dominant native language and in English as a Second Language.

The ESL and bilingual classes were to be mixed in terms of grade levels. In the scheme of things, each student's daily program would contain classes with English dominant students. All program students would take course work according to their individual interests and goals -- the major objective being the acquisition of skills leading to high school completion and preparation for further educational and vocational opportunities.

To fulfill its purposes the program would deploy one Project Director, three content area specialists, and two educational assistants. These funded staff members were to be assisted by a secretary. In addition, two tax levy ESL teachers and two subject area teachers reinforced the program personnel provided for in the Title VII budget. The program was to be housed in an office in Fort Hamilton High School. All told, the program, as conceived, was well organized. The proposal was coherent.

## PRODUCT EVALUATION

The evaluation blueprint specified several objectives related to the goals of the program. The objectives and outcomes are enumerated:

### 1. Standardized Testing

It was expected that significant progress would be shown by program students over the course of the program year. Achievement was to be manifested in reading and mathematics. The design called for standardized measurement in these content areas with the obtained results analyzed for all Title VII students combined. This group consisted of pupils receiving instruction in English as a Second Language (ESL).

#### 1.1 Sample

The evaluation of standardized test data was based on complete cases. In reading there were 108 students taking the Stanford Reading Achievement Test and furnishing paired data. Also in reading there were 56 Spanish-speaking students who took the Cooperative Inter-American Test Series. Complete mathematics data were collected in 38 cases using the New York City Arithmetic Computations Test. All students were enrolled in ESL or English Reading classes. Only students taking mathematics were given the New York City Arithmetic Computations Test.

#### 1.2 Methods and Schedule

Pre-testing and post-testing were conducted in the early part of the school year and at the end. There were some students who enrolled in the program after the pre-testing had taken place. The testing, data gathering and recording of results were performed by program personnel.

The Stanford Test results and the New York City Arithmetic Computations Test scores were expressed as grade equivalents. The Cooperative Inter-American Test results were in the form of raw scores.

### 1.3 Analysis

The data were subjected to tests of statistical significance. A correlated t-test was employed to evaluate the meaning of the obtained differences between pre- and post-test means. As noted, paired data were analyzed and N-counts varied. Rejection regions (one-tailed) were set up at the .01 level of significance. Statistical results are embodied in the following tables:

#### STANDARDIZED TESTING

##### Stanford Reading Achievement Test

	<u>Pre-Test</u>	<u>Post-Test</u>	<u>Difference</u>	
$\bar{X}$	3.35	4.65	1.30	N = 108 t = 16.25 df = 107 p < .01
S.D.	1.27	1.33	.84	

R  
E  
A  
D  
I  
N  
G

##### Cooperative Inter-American Test

	<u>Pre-Test</u>	<u>Post-Test</u>	<u>Difference</u>	
$\bar{X}$	37.75	49.62	11.87	N = 56 t = 8.36 df = 55 p < .01
S.D.	13.01	16.69	10.57	

A  
C  
H  
I  
E  
V  
E  
M  
E  
N  
T

##### New York City Arithmetic Computations Test

	<u>Pre-Test</u>	<u>Post-Test</u>	<u>Difference</u>	
$\bar{X}$	5.78	7.61	1.83	N = 38 t = 6.31 df = 37 p < .01
S.D.	1.20	1.67	1.77	

M  
A  
T  
H

#### 1.4 Outcome

The objective test score differences in reading and mathematics were statistically significant. The post-test means surpassed the pre-test scores by a sufficient margin. Subanalysis were also performed separately by language group. Here too, the magnitude of differences was significant at the .01 level, save that of the Spanish students pre- and post-tested in Arithmetic--where  $p < .05$ . The conclusion drawn from these findings and from the composite results is that program participants evidenced substantial gains in achievement level in keeping with the program's aims.

#### 2. Teacher-Made Tests (Mathematics, Social Studies and Science)

It was expected of those students taking course work in the Mathematics, Social Studies or Science subject areas, that at least 70% would reach an acceptable achievement level as demonstrated on teacher-made final examinations. Passing the exams was considered to be acceptable.

##### 2.1 Sample

The groups involved in this objective consisted of students receiving instruction in Math, Social Studies or Science. The students were being taught the subject content in their respective native language.

##### 2.2 Methods and Schedule

Finals were given at the end of each term. Teachers prepared examinations, gave out grades, and submitted the results. Along with the hope that teacher-made examinations would contain appropriate course content, it was hoped that grade assignment would reflect student-demonstrated achievement.

The Project Director assembled the data separately by language groups and by specific course. Nearly all of the data gathering came at the end of the school year.



### 2.3 Data Analysis

Percentage breakdowns were derived by language group and specific course content of students passing their final exams. Aggregate percentages of students passing Math, Social Studies and Science were also determined. The breakdowns by language across area aggregates and for the specific courses on which they are based are presented below:

TEACHER-MADE TESTING  
(Percentage Passing)

<u>Subject Area</u>	<u>Language Group</u>					
	<u>Greek</u>		<u>Arabic</u>		<u>Spanish</u>	
	<u>%</u>	<u>( N )</u>	<u>%</u>	<u>( N )</u>	<u>%</u>	<u>( N )</u>
<u>Mathematics</u>						
Fundamentals	100	( 6 )			88	( 8 )
Algebra	91	(11)	88	( 8 )	75	(24)
Commercial	100	(11)				
Math Aggregate	96	(28)	88	( 8 )	78	(32)
<u>Social Studies</u>						
World History	83	(23)	100	(13)	100	(25)
American History	100	(15)			100	(26)
Economics	93	(14)			100	(23)
Civics	100	( 4 )				
World Studies					92	(26)
Current Soc. Stud.					92	(13)
Soc. Stud. Aggregate	91	(56)	100	(13)	97	(113)
<u>Science</u>						
Science Aggregate	78	(23)	92	(13)	84	(32)

It may be seen that the projection of 70% passing has been surpassed in every cell of the table.

Three observations may be made. In the nature of teacher-made tests one has to rely on the judgments and skills of teachers in constructing tests that they deem appropriate in terms of course content and educational aims. In the area of bilingual education, an evaluator must depend even more than usual on the teachers to devise instruments

covering relevant content and processes and discriminating meaningfully. Second, from the tabularized data it seems that the Arabic students are not taking the range of courses being taken by the other language groups. Third, it would appear that class size and/or student-teacher ratio in the subject areas would vary depending on language grouping.

#### 2.4 Outcome

The results by course and the aggregate figures fall beyond the projected criterion of acceptability in Mathematics, Social Studies and Science.

### 3. English as a Second Language (ESL)

It was expected that at least 70% of the participants would improve at least one rating point on the New York City Language Fluency Scale.

#### 3.1 Sample

In all, 142 students were observed. This figure is the number of students for whom complete data were available (Greek = 56, Arabic = 18, Spanish = 68).

#### 3.2 Methods and Schedule

The rating scale was administered on a before and after basis. Students were rated by their teachers using the descriptive categories provided on this ordinal scale. The instrument was administered in October/November and in May.

#### 3.3 Analysis

A bivariate distribution was charted. The pattern of cell frequencies was described on grid paper.

Seventy-six percent of the students advanced at least one scale position -- in degree of improvement. However, only 62% of all students evidenced sufficient improvement when consideration was given to those

students who entered the program at rating position F. It was expected that such students would advance at least two rating places to position D. Thus, the 76% figure must be properly qualified.

### 3.4 Outcome

The program did not quite accomplish its ESL objective as measured by the rating scale. This outcome is somewhat mitigated by the coarseness of the rating scale procedure and inferentially, by the performance of program students on the standardized reading achievement measure.

## 4. Native Language Arts

It was anticipated the 60% or more of those enrolled would demonstrate satisfactory attainment in the Native Language Arts.

### 4.1 Sample

As planned each language group was to have been assessed in Native Language Arts, which includes grammar, mechanics, spelling. As it developed, the Project Director felt that the Greek and Arabic students entered the program with a high degree of literacy in their mother tongue. She also believed that the Cooperative Inter-American Test encompassed the areas of native language arts for the Spanish-speaking sub-group. Her views prevailed at the outset of the program. Nevertheless, it was agreed that the Greek students would be tested in the native language arts.

### 4.2 Methods and Schedule

A teacher-made examination was administered to the Greek students at the end of the term. The criterion level of success was set at passage of the exam.

### 4.3 Analysis

It was ascertained that 72% of the 25 students who were tested passed the examination. The result lends support to the contention of the

Project Director that the Arabic students may also have had proficiency in the native language arts. According to the Director, the Cooperative Inter-American Test is an available instrument, widely used in the field to assess Spanish native language arts. Notwithstanding, the extent of correlation between the Cooperative Test and indicators of ability in the native language arts remains to be determined.

#### 4.4 Outcome

The evaluation of the native language arts was limited. The Greek students were successful in their classroom performance in the native language arts. However, this may not have been attributable to the program.

### 5. Attendance

It was expected that the attendance of students in the Title VII program would be qualitatively superior to the attendance of the Fort Hamilton student body, in general.

#### 5.1 Sample

The comparison was built on the attendance figures for all students registered in the Title VII program vs. that for all students in the school.

#### 5.2 Methods and Schedule

The yearly average attendance rates were derived from the attendance records of the program and from the statistics of the school's attendance office. The data were provided by the Project Director at the end of the school year. The data cover the period extending from November to May. Attendance was not formally recorded until November because a "relatively large number of students enrolled late due to

the fact that the program was in its first year and the target students were scattered among the 4300 total school population. It took some time to find and organize eligible students" -- Project Director.

### 5.3 Analysis

A test for the difference in proportions was performed. Yearly program attendance was 90%; yearly school attendance was 78%. The difference was 12%, yielding a t-value of 2.99, significant at the .01 level.

### 5.4 Outcome

The result lived up to the expectation that the attendance rate of students in the program would be superior to the rate of the students in general.

## Summary - Product Evaluation

Primacy is given to the standardized test information which was statistically significant in favor of this first-year Title VII program. The teacher-made test results were also positive in the subject areas and for the Greek students in the native language arts. The evaluation of ESL reaches a verdict of near success. The educational product of the Fort Hamilton Project is viewed as satisfactory, although some aspects of the program and its evaluation were inconclusive.

## Process Evaluation

A discussion of the program's operational factors will follow. The description of program process comes from three sources: 1) questionnaires completed by the professional staff; 2) interviews and information provided by the program's Director and teachers; 3) evaluator visitation and observation. The discussion reflects opinions about the implementation of the program.

The staff regarded the program as strong and meaningful because it catalyzed three interrelated elements. Staff consensus was that the program enhanced stu-

dent sense of identification, confidence and belonging which helped students in their "Americanization." The dual phenomenon was deemed to have a beneficial effect on minimizing the so-called "language handicap," thereby supporting the student's education and educational aspiration. It is interesting to note that the staff attributes the value of the program to the program's values and to motivational and affective factors.

The other point on which consensus was reached about the program came in the belief that the program was strong because it could offer small classes as well as particularized instruction.

On the matter of how the program could be improved, there were three clusters of response from the staff.

First, there was comment about what might be called the program's grouping practices. Responses were made suggesting the adjustment of class size downward. Another response on grouping offered that classes might be reorganized into subgroups narrower in ability range. The Project Director interpreted these suggestions as a desire to extend small group and individualized instruction to all classes.

The second cluster dealt with educational materials for the bilingual subgroups. Specialized supplies and equipment were viewed by staff members as items that would improve the program. These would include more textbooks, film strips, reference works in the native languages.

A third cluster of responses concentrated on direct language instruction, be it ESL or native language arts. About the former, staff felt there is a need to test students in the development of native language arts skills. This comment is particularly relevant to the treatment above of Objective #4. As to ESL, the idea was voiced that more English be introduced into the bilingual subjects to reinforce the ESL work and to provide more carryover.

### Program Activities

In the main, effort was made to insure that program activities were provided in conformity with the program proposal. The instructional package was delivered satisfying the expectations of the program design. As indicated, the classroom work apparently paid dividends in the product evaluation. This section of the process evaluation will deal with the program's first year of operation and the implementation of other program aspects, namely, community involvement, staff training, and curriculum efforts. All of the related activities, taken together, were intended to enable the program to realize its goals.

The program faced early challenges in September and October of 1975. The school year began with a teachers' strike and the disarray caused by budget cuts. Both of these events complicated the organizing and starting-up of the program. For one, program staffing was jarred at the time the program was to begin. In turn, the location and selection of students was impeded during this early interval. The Project Director stated that it took about five weeks from the opening of school until the program was in full swing. As a result the testing of students was delayed until November and the program was not fully subscribed until mid-year.

In its operational stage two clarifications should be made about the instructional component. First, the science program consisted of course work in biology, rather than in both biology and general science. Second, pupils were enrolled in from one to three bilingual classes with the remaining periods distributed among the school's regular program offerings. Other reflections about program implementation may be found in the Project Director's mid-year Interim Progress Report.

Parent and community involvement was encouraged with the convening of a Parent Advisory Council. It is to be noted that parents had been motivated to provide inputs relevant to the program prior to its inception. The Council met three times during the year. Parents were enlisted to accompany students on trips.

In what the Project Director regards as "highly successful" an ESL evening class for parents was set up -- in the face of the budget dilemma. Two such classes are contemplated for next year. In March the progress of the program was discussed and the Council members supported the program's application for continuation.

The staff training was also limited by an unwelcoming September. The pre-service workshop was cancelled. Instead, staff training was attempted via meetings and personal conferences with the Project Director. Two in-service workshops were conducted by consultants and were favorably received by staff members. In addition, four in-service workshops were run by the Project Director. Training was focused on the theory and process of bilingual education. Participants were acquainted with models and programs from which they could draw. Practical suggestions were made about resources, methods and materials, and curriculum construction. In the Fall and Spring, staff members also availed themselves of formal college training to further their bilingual professionalism.

Curricular developments took place during the program. The content area specialists worked to construct or supplement courses in each language and in each subject. The courses, while recognizing special needs of the target population, generally followed the regular syllabi and curriculum guides of the Board of Education. A variety of existing materials was explored. These included textbooks, and audio-visual materials. Where needed, available instructional aids in English were adopted or translated.

In the Greek and Arabic sections the Project Director reported that there was a "dearth of materials." What materials there were were "unobtainable." Therefore, the teaching materials in use at Fort Hamilton by Greek and Arabic students were devised within the program by the content specialists. The refinement of instructional units was ongoing during the year. A planned result of the Fort Hamilton work will be the dissemination of materials to resource centers and sharing them with other schools.



The program also organized other activities. There were trips and clubs for the students. Trips were made to the Balet Hispanico of New York, the Parthenon Dancers Performance, and to the United Nations. There was also a Bicentennial Show entitled "Many Peoples, Many Lands, One Great Nation." The show was presented on Friday evening, May 21, 1976 in the Fort Hamilton Auditorium. It featured student performers of each language group engaged in singing, dancing and artistic recital. These "extra-curricular" activities brought students together and afforded them new experiences.

#### Summary - Process Evaluation

In the responses of staff and in the operation of the program in 1975-1976 there appears to be signs of adaptability. The directions the program has taken in meeting the exigencies of the school year and the adjustments it has been able to make in its first year have been in service of the program's aims.

#### Summary and Recommendations

As the data indicate, the Fort Hamilton Project did not have an easy year, but was able to produce a record of accomplishment and to meet administrative challenges. This judgment is based on standardized testing, course work and attendance data. It is also supported by observations of program implementation during the year.

The following recommendations are submitted.

- 1) Next year the program should strive to remain adaptable in its problem solving ability.
- 2) A systematic attempt should be made to measure the native language arts skills of the students. Perhaps this suggestion applies more generally to the state of the art of capturing the rainbow of native language arts.
- 3) The development of resources should be intensified. This suggestion applies to the organization of a resource center as well as to the

acquisition of specialized materials such as reference books. Such material would encourage independent study.

- 4) On a related point, the program might profitably invest in specialized equipment such as a typewriter with Greek or Arabic alphabetic characters.
- 5) The office quarters of the program should be expanded if there is more room available in the school.
- 6) The program should consider the suggestion of one teacher that bilingual guidance counseling services be incorporated into its operation. The feasibility of the last three points is subject to the exigencies of the budget.