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ABSTRACT

This document presents the evaluation results for the Title VII Special Alternative Instructional Program grant to Cicero Public School District 99 (Illinois) for the 1994-95 school year. This was the third year of funding and implementation of this grant, which provided summer school funds with emphasis in building literacy through the use of mathematics and science. A program director, 18 teachers, and 5 staff members served 180 students in grades 3 through 6 in the evaluation year. In the course of the evaluation, several on-site visits were made, and many pieces of additional data were analyzed. The program was designed to increase literacy development for students who have achieved some oral proficiency in English and are designated Limited English Proficiency (LEP). A dual purpose was to increase students' mathematics and science achievement. The professional development of teachers and parent involvement were also supported. The evaluation demonstrated that the project was successful in meeting its major goal of serving the needs of the targeted LEP group. Literacy skills, science skills, math skills, and computer skills all increased. Data also indicated that teachers increased their instructional repertoires and participated in professional development opportunities and that many parents became involved with the education of their children and received literacy training themselves. Recommendations for program improvement include finding a centralized location, better staff training, and more parent involvement. (SLD)

CICERO PUBLIC SCHOOLS
DISTRICT #99

TITLE VII SPECIAL ALTERNATIVE GRANT
SUMMER SCHOOL:
LITERACY IN MATH AND SCIENCE
PROJECT EVALUATION
1994-1995

GRANT NUMBER T003E20021

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This document was created by Sharon McNeely, Ph.D., Associate Professor of Northeastern Illinois University, Chicago, Illinois 60625, as an independent contractor with the Cicero Public Schools. In this capacity, Dr. McNeely served as the external evaluator for the Title VII Special Alternative Grant Summer School: Literacy in Math and Science, Continuation Year III. The report, the formats, and the visuals are the responsibility of the evaluator.

The report could not have been completed without the continued support and input from Cindy Mosca, Title VII Project Director for the Cicero Public Schools. Ms. Mosca was responsible for providing historical information and statistical data related to the background and project development parts of this report. She is not responsible for data developed by the author related to the actual evaluation's methodology and analysis. The support and input of Paty Welegala, who served as the Principal for the summer school, was also crucial for the development of this report.

The evaluator expresses her appreciation to the teachers, staff, parents, and students involved in this grant. They have all willingly given of much time and energy, often with no reinburement, to cooperate with the evaluation process. Without them, this evaluation report would not be possible.

Executive Summary

This document presents the evaluation results for Cicero Public School District #99 of Illinois Title VII Special Alternative Instructional Program for the 1994-1995 school year. This is the third year of funding and implementation of the special alternative grant which provides summer school with emphasis in building literacy through the use of mathematics and science. In the course of this evaluation, several on-site visits were conducted by the external evaluator and many pieces of additional data, both quantitative and qualitative, were collected and analyzed.

This Project was designed to increase literacy development for students who have achieved some oral proficiency in English, and therefore are designated Limited English Proficient (LEP). The summer school has the dual purpose of developing the students' English skills and their academic skills in the areas of math and science. As a part of the overall design, there was also an intent to increase the professional development opportunities and instructional repertoires of teachers of limited English proficient students. There also was a goal to involve parents in the education of their children, and provide some literacy training and develop some materials for parents to use to interact with their children.

This evaluation demonstrates that the project was successful in meeting its major goal of serving the needs of the targeted LEP student group. The data indicate that literacy skills, science skills, math skills, and computer skills all increased. In addition, the data support that the teachers increased their instructional repertoires and participated in professional development opportunities. The data also support that many of the parents became involved with the education of their children, received literacy training, and used materials to interact with their children.

This executive summary includes a review of activities undertaken as part of this grant, a review of the implementation of the project, and a review of the evaluation methodology. The major findings of the evaluator are presented. In addition, conclusions are drawn and recommendations are made.

The summer school project worked with students entering into grades three through six, the grades during which students traditionally transition from the bilingual or ESL programs into the regular classrooms. The project provided literacy development integrated with thematic mathematics and science instruction. It also provided support for students to learn computer and social skills, to aid in their successful transition into the mainstream classroom. The project also coincided with the general goals of Title VII and the national education goals.

The funds provided under this project were limited, and did not begin to cover the many expenses which were part of the project. It is commendable that the Cicero Public Schools remained committed to not only meeting the project's specific objectives, but also to meeting its bigger, general goals. To that end, teachers and parents have received ongoing training and support from the District. Part of this training has involved application of the Teaching Integrated Math and Science (TIMS) program in the classroom, cooperative learning, effective lesson planning, human relations, and conflict management. In addition, many teachers have taken advantage of the District's professional development reimbursement plan which provides partial reimbursement for teachers who attend external professional development activities, such as graduate classes, continuing education workshops, etc. This reimbursement policy has also helped the district in that several teachers have been able to use this to complete ESL or bilingual certification programs.

The training provided directly through the district, and through the reimbursement policy of the district has benefitted the project by providing an ample number of teachers who are well-qualified for meeting the needs of students during summer school instruction. There were many more teachers who applied to teach this year than there were slots for teachers. This resulted in the Director being able to choose teachers for the project based on the teachers' qualifications.

The teachers were successful in meeting with each other and the curriculum consultant and jointly preparing booklets of strategies and activities which integrated literacy with math and science. These booklets are available for all teachers in the district to use with LEP students in mainstrem classrooms. In addition, the summer school parent staff provided workshops for parents and developed materials for parents to use with their children at home. While these materials were designed to integrate math and science with literacy, they also met the needs of a number of parents in providing them with further training in their own use of basic English skills.

The strategies and activities developed by the teachers proved to be successful in developing further English competency in reading and writing among summer school program participants. The students showed a gain in not only their English written and comprehension competencies, but also in their use of various math and science related processes and vocabulary.

The year one and year two project evaluators made some recommendations that the year three evaluator also recommends. In addition, other recommendations are made based on the assumption that the District will be applying for future funding and developing similar programs. The recommendations are:

1) Future summer school programs need to have a school location which is central in the district, and which meets the needs of students, staff, and parents. Special consideration needs to

be given to not only availability for the students, but the neighborhood resources, and the usability of the school during the summer.

2) Future school programs need to balance employment of the staff, balancing employment by hiring those who may be familiar with various components of teaching summer school, and also employing others who have skills in needed areas.

3) The training aspect of the summer school program continues to need some modifications. There should be a year-long training plan that is developed and followed.

4) The high level of parent involvement needs to continue in future programs.

5) The use of classroom aides needs to be expanded and continued in future programs.

6) The district should make use of preservice teachers to further expand the supportive services provided to students and parents.

The year one and two project evaluators had recommended that the site of the project be a central location. This year's location was in the middle of the city. It seemed to have benefitted the students as attendance was generally high. Across the three years of the project, average attendance was the highest in year two. In year two part of the location was air conditioned, while it was not in year three. The year three attendance also was effected because of the unusually hot weather, which often resulted in city-issued heat warnings, and the need to close the school early, or reschedule school-related activities because of the heat.

The year one and two project evaluators had also recommended that the professional staff be re-employed. In year three, about two-thirds of the staff had previous program experience. Some staff were not rehired because they had left the district, had indicated that they would not be available for the staff development, indicated that they would not be available to teach all of the summer school days, or had not continued to show their investment in developing new

instructional techniques. This last reason was primarily the determination of the District administrative staff and Ms. Cindy Mosca, as she supervised staff throughout the regular academic school year. Programatically, this allowed new staff to be trained by old staff, and allowed for some program consistency while bringing in new ideas and also providing for some new training which was not previously given to staff. Overall, the combination of experience with new staff was probably one of the reasons that the program was successful.

Success was evident in the program in many areas. However, there were also some weaknesses noted. Many staff reported that they didn't give the time to the program that they previously had, and the lessons developed by some of the experienced staff were less extensive in their development than in previous years. Additionally, some staff made minor change in past lessons and tied to use those materials again instead of developing new ideas and using different resources. The curriculum consultant (who also served as evaluator for year two and year three) logged more hours in overseeing curriculum development this year than in the previous two years. The overage was attributed to the new staff who required help in developing the integrated thematic curriculum, and to working with the experienced staff who needed support to develop new, unique materials. The recommendation is made that staff be given the opportunity to apply for future employment, but that they be clearly told that new materials will be expected. Additionally, the district should balance the hiring, so that about 25% are previously-employed staff, and the majority are new-to-the-program stafff. While more staff development will be needed, this should enhance productivity, and lead to new, fresh ideas for integrated curriculum, and for training.

Input from the teachers in year two and in year three, review of developed curriculum materials for the three years, and the evaluation processes used in the past two years lead to the conclusions

that the training process for the teachers needs some minor modifications in future programs. Particularly, a staff training plan needs to be developed and followed from the beginning of the process.

The year one and year two project evaluators had also recommended that the high level of parent involvement continue. The project continued to have parents involved by having them act as teaching assistants, and by having them actively training other parents. In year three, the project also had parents who were hired to serve as teaching assistants that were specially trained to teach other parents how to develop math and science activities at home. These teaching assistant/trainers hosted two sessions for parents to be trained. Both sessions, held during the day, drew over 40 parents to each session. The project also had parent involvement at two special parent night activities associated with summer school. In year three, the two parent nights drew over one half of the parents to the school location. Parents participated in providing feedback on their childrens' portfolios of work, did their own literacy development project, and also participated in a sing-along activity.

Also in year three, similar to year two, some of the parents and staff developed an integrated literacy, math, and science booklet for use at home. The booklet was done in dual language, and offered pictures, clearly labelled sequenced activities, etc. The evaluator also continues the recommendation made in year two, that future programs have as a component the development of materials for the home. These materials should provide scuccess strategies for parents and students to interact with each other and with the school.

In year three, both parents and university pre-service teachers were used as aides in some classrooms. The feedback from teachers was that the program would benefit from the addition of

even more aides in the classroom. The evaluator feels that aides could be effectively trained and used for a variety of supportive projects with the students. The evaluator reommends that future programs continue to use university pre-service teachers as aides.

This final evaluation report includes information about the design and implementation of this Title VII project, and is divided into seven sections which include:

1. Historical Overview
2. Program Description
3. Evaluation Methodology/Data Analysis for Year Three
4. Results for Year Three
5. Data Analysis and Results Across the Three Years
6. Conclusions and Recommendations
7. Appendices

Historical Overview

Since 1976, Illinois had mandated bilingual education for limited English proficient children. Schools which enrolled 20 or more children of one language background have been mandated to provide appropriate serivces in a transitional bilingual education program. In 1985, as part of the School Reform Act, the statute required that all children of limited English proficiency be provided special educational services to meet their linguistic needs. As a result of this mandate, demographic shifts in the population, and new methods of determining bilingual program eligibility, the number of students eligible to receive these services has grown enormously.

The Cicero Public Schools are located in Cook County, Illinois. This district, District #99, is an urban-like suburb of Chicago. The students face the problems of gangs, drugs, and violence. They also face the issues of ethnic migration and centration which has resulted in enclaves of various ethnics groups developing. In Cicero, these enclaves allow students to have the richness of their native cultures, but also minimize the need to learn and use English. The District attempts to deal with these concerns by providing bilingual education services, and services which are designed to make students feel safer.

District #99's bilingual program has grown each year it has been in existence. The program currently serves an estimated 3,100 students who are of limited English proficiency. The growth in this program has varied yearly, but has always been growth. This number currently represents about 33% of the total student population, up from 25% the year before. The current student population consists of students from at least 20 major language groups. The varieties of programs and services provided is also growing, with over 100 teachers and other employees now serving the LEP students in the district.

District #99 has been pressed to serve the LEP students. It is a unique district. It serves only .45% of the total school population in the state, but about 4% of the state's total LEP population. The bilingual program is now the second largest in the state. This is compounded by the fact that almost 60% of the students in the district are categorized as from low-income families.

As the district sought to deal with its growth in LEP students, a Title VII project director was hired, and a comprehensive plan was developed to deal with the growth. Part of the growth also meant that the district had to undertake a comprehensive training program for its staff. The Title VII project director sought to find ways for teachers to work with LEP students and also have the professional development training needed. As Title VII Project Director, Ms. Cindy Mosca, has sought to support the teachers by providing inservice workshops, graduate coursework, in-class consultation, and phone consultation. Separate evaluation of the Title VII project has shown that the project is meeting its goals.

As an outgrowth of the Title VII Project, this Special Alternative Grant (SAG) was developed. This grant sought to specifically meet some of the overall Title VII project objectives through a summer school project. The district did not have the financial resources to meet its goals for this aspect of the project on its own. Through grant application, it sought funds from the United States Department of Education to assist in the implementation of a summer school program.

The focus of this grant was to meet objectives in three areas, instruction, materials development, and training. The first two years of the grant were successful, and subsequent funds were sought for year three. The year three grant focus was primarily the same as year one and year two, with slight modifications made to collect more data and to change some aspects of the professional training.

Program Description

The Title VII Program Director, Ms. Cindy Mosca, has served as the only paid position across the grant. This year, she served as a resource person for all bilingual staff, and for others seeking help with LEP students. She served as the Director for SAG. Unlike year one and year two of the grant, she did not assume the role of Director of the Summer School Program this year.

District #99's pay scale for teachers is below the average of other suburban area districts, and is below the average found in Chicago Public Schools. As a result, Cicero has a difficult time attracting and keeping teaching staff. The teaching experience of the staff served by this SAG project is about ten years. This SAG project served 25% monolingual staff, the rest being bilingual.

The Cicero school district does not have an exact count of parents that are LEP or bilingual. It is known that there are many more parents than are represented by the counts in the schools. Even though many of the LEP and bilingual students move on to the regular education services in a timely manner, that does not mean that their parents are gaining any English skills of their own. This Title VII SAG project sought to serve parents by providing them training and supportive workshops. The project served over 400 parents through various workshops and training services. The SAG project included a component where parents were trained to train other parents. In all, four parents became trainers. In addition, parents became aids in the classroom.

Some of the parent training was conducted in conjunction with staff training. Staff training was provided on both a one-to-one consultation basis and in small groups. The small group training

included inservices, a graduate level course, and other course work. The training emphasized the development of language and literacy skills in math and science.

One of the key components of this Title VII SAG project was an intensive summer school program. This program was staffed by 18 teachers, 5 staff, and one program director who serviced 180 students of the 900 students in grades 3-5. These parents of these students were also serviced in various ways by the program.

Staff for the summer school program participated in intensive training prior to the start of the program. The training focused on developing the staff to work in teams, implementation of current ideas for thematic math and science, cultural awareness, and conflict management. The staff was required to develop a variety of written materials as part of their training. These materials serve as further documentation as to the program's effectiveness, and are presented later.

The focus of the Summer School Program was to develop language skills in LEP and bilingual students. All students were selected for the program based on their test scores in the use of English, and based on teacher recommendation of need. The program sought to teach language skills through an integrated curricular/team approach. The staff worked in teams to develop and implement curriculum which was based on the Teaching Integrated Math and Science (TIMS) program developed by the University of Illinois at Chicago. The curriculum implementation also had to use cooperative learning, sheltered English instruction, and individualization where possible. The staff coordinated their curriculum development and instructional planning so that team members knew what other members of their team were doing, and students were exposed to a variety of instructional strategies and learning designs. The purpose of this complex, integrated

program was to help students continue their English language development while learning math and science and transition into regular education classes.

The 1994-1995 school year was the third year of the Title VII grant related to language in math and science. The specific SAG project instructional objectives were:

1. In the area of English, students will demonstrate a pre/post gain of at least 25% in English competency in reading and writing as determined by the LAS (herein called Objective #1).
2. In the area of Math/Science, using a portfolio and performance-based assessment, students will demonstrate a working knowledge of the following math/science processes: measuring, predicting (estimating), data collecting, graphing, extrapolating (from graph), interpolating (from graph) (herein called Objective #2).

After working with the curriculum consultants, and attending various trainings, Ms. Cindy Mosca helped in the development of the criteria for portfolio assessment, anecdotal records assessment, and other assessments. In addition, she helped train the teachers for the assessment processes.

To further meet the above objectives, curriculum writing and planning took place during the training sessions for teachers. These sessions occurred during the school year, prior to summer school. Curriculum, cultural diversity, and conflict resolution experts were hired to train teachers and supplement district expertise.

Another part of this SAG project included materials development objectives. These objectives included:

1. Summer school staff will prepare a booklet of strategies and activities for integrating the instruction of language, math, and science for LEP students in mainstream classrooms (herein called Objective #3).

2. Summer school parent staff will prepare a booklet of strategies and activities integrating language, science, and math to be used by parents with their children (herein called Objective #4).

Training was integral for materials development. The training objectives included:

1. Summer school staff will demonstrate increased levels of use of successful approaches and strategies for teaching LEP students language through the integration of math and science (herein called Objective #5).

2. Summer school parent staff will demonstrate an increased knowledge of ways in which to foster language development through math and science integration (herein called Objective #6).

3. Summer school parent staff will provide inservice for district parent groups in family activities integrating language, math and science (herein called Objective #7).

Teachers unfamiliar with the specific aspects of curriculum development related to the grant were trained for this materials development. Along with other teachers who had previous training, the curriculum was developed during training sessions.

The project stipulated that when curriculum materials were developed, booklets would be developed in a structure that would allow for additional materials to be added later. To meet this end, developed materials were grouped by team and theme into binders.

The materials development aspect also included that staff be provided professional training. Staff were given opportunities to attend other training, and were given a variety of other materials for development over the course of the grant.

Part of the training for the curriculum development and implementation involved teachers attending special training sessions on four dates in the spring of 1995. These teachers also completed training in the use of TIMS, ESL, or other strategies, and took a three credit graduate course on human relations and ethnicity in the classroom.

The further tasks of the implementation of the objectives were accomplished per the timetable. The consultants were notified and hired. Parents were identified and hired. Students were selected and notified. A Principal was hired for the summer school. The teachers were inserviced on the previous grant and were involved in the development of specific objectives for the curriculum under this part of the grant.

Evaluation Methodology/Data Analysis for Year Three

The evaluation of the Cicero Title VII SAG Project has been designed to assess the extent to which the pre-established goals and objectives of the third year of the project were met. The external evaluation included structured interviews, observations, questionnaires, surveys, portfolio assessment, review of audio and video tapes, review of journals, review of logs, and analysis of prmary and secondary quantitative data. This qualitative and quantitative data was used to determine the degre to which the program successfully met its proposed objectives. The section in this report on results includes a number of tables and graphs which provide information as to the outcomes.

This evaluator had served as the curriculum development consultant for all three years of the grant, and as the year two evaluator. The consultant was aware of all project aspects, and was involved with the project on an on-going basis. This perspective allowed the evaluator to have access to materials and obtain information which a superficial evaluator would not have obtained. The result was a great deal of data, with the relevant information included in this analysis.

The various objectives of the program required various methods for assessment. In an effort to efficiently discuss these objectives as they related to the evaluation methdology, the objectives presented above were re-numbered in sequential fashion so that the instructional objectives remained objectives one and two. The materials development objectives became three and four. The training objectives became objectives five, six, and seven.

The summer school program was scheduled for six weeks. This was too short of a time for the use of larger standardized achievement measures to be reliably used to pre-and post-test student

achievement and not compromise validity. To meet the program's objectives, locally-derived measures provided a valid alternative for assessment. These measures had been used to some degree in year two, and in other school-related assessment of achievement over the year.

The students were bussed to Wilson School, the summer school location. The bus driver's salaries, and the costs for bussing were paid for by District #99 funds. The District also paid all related bussing costs for providing buses for two nights for the parent programs. Wilson School is fairly centrally located in the District. It is a secured facility, and was accessible to the students. There was adequate space for each teacher to have his/her own room. There were pull-out walls between many of the classrooms. This allowed for the blocking of teachers into rooms by teams, so that teams could have removed walls for larger groups of students for some of the teaching, and small groups of students in smaller rooms for other activities. There was a newly developed computer room that had networked computers, a large playground, and other space for a teacher reading room, a teacher computer room, etc. On a post-program survey, teachers felt that the only draw-back to the building was the lack of central air conditioning.

The post-program teacher survey results are presented in Attachment #1 of the appendices. The teacher survey was prepared as a means for teachers to provide qualitative data and commentary about the program. It was given to each teacher the last week of school, with an envelope to return it directly to the evaluator. To try to insure honesty, teachers were informed that although their responses would be part of the evaluation process, their confidentiality would be maintained. Teachers not only provided general thoughts about the program, but also specific comments and recommendations. There were a total of 18 teachers hired for the summer school. All of them returned the survey, resulting in a respondent rate of 100%.

The first two objectives were measured through the various items produced by students which were found in their portfolios. There were about 175 students involved in the summer school program. Initially, several of the students accepted to the program did not attend, and others were added the second week. During the six weeks of summer school, there were several heat emergencies in the city. The school was not air conditioned. The staff tried to provide fans, and keep students as cool as possible. However, attendance dropped by 20% each day the temperature was in the high eighties or nineties, and overall, there was a drop-out rate of almost 20% by the end of the program. The Director of the Summer School program and the evaluator made efforts to contact parents of students who dropped-out, to ascertain why they were not attending the program. Most of the parents blamed the heat. A few parents reported that they had decided to go on vacation early or had family problems that resulted in having the child removed from the program.

Students were assigned to a team of teachers who prepared and implemented the curriculum. At the end of the summer school, all students' portfolios were collected, and analyzed. Those students who had attended at least 90% of the program were included in the overall analysis. Others were included where it was deemed appropriate to do so.

All teachers were assigned to a teaching team and to a particular component of the program. The teachers who worked on the assessment component met with the evaluator to determine what ways the objectives might be assessed, and the overall curriculum assessed. This committee developed a packet of assessment procedures. Many of these procedures were available through various publications concerning curriculum and alternative assessment. Other procedures were developed in-house. The SAG Project teachers all received training in using the asssessments, and a schedule was developed for completion of each of the components. There were two assessment committee

teachers assigned the specific task of making sure pre-assessments were completed on the late-enrolling students. The packet for assessment is included as Attachment #2 in the appendices.

There were ten different student assessments which all teachers were required to have students complete. Four of these were pre-assessments that also were used in the same or an alternative form as post-assessments. Two of these were longitudinal, keeping track of growth over the program. Additionally, all students completed an assessment which involved the computer lab. Also, depending on the specific curriculum, some students also completed other assessments. If these were relevant to the objectives, they were included in the analysis.

Objective #1 was that students will demonstrate a pre/post gain of at least 25% in English competency in reading and writing as determined by the LAS. When the grant application was written, it was possible to have LAS scores of students just prior to the summer school project. Due to changes in the district testing, it was not possible to have these available to the summer school staff. Instead, the evaluator decided to assess English competency gains through assessment via two LAS-like instruments, and via student writing samples. Two LAS-like ten-item multiple choice tests were developed and given to the students both at the start of and at the end of summer school. One of these consisted of general English vocabulary, and used items which were of a minor variation from LAS items. The second of the two LAS-like tests was also a ten-item multiple choice test, but had English vocabulary which was related specifically to the math and science vocabulary which was being developed in the program. For this evaluation, the number of correct items was used as a comparison. The students completed a pre-assessment in which they participated in an integrated math and science activity. A different activity that had the same assessment component was used for post-assessment. The scores of the activities were compared, and the writing each student did as part of the assessments was analyzed. The number of words

produced by the students was counted, as was the number of words produced in English. All assessments were developed in consultation with an English-language specialist professor at the evaluator's university. This same person also helped establish inter-rater reliability of above .96 for all items.

Objective #1 also related to increased reading competency. This was not directly assessed during the summer school. However, some indirect assessments were made. First, all students kept a book log in their portfolios. Whenever they read a book, they were asked to add this to their log. The teachers monitored this, and reminded students that parents would be looking at the logs during the parent nights, etc. For this evaluation, the number of books the students read during the six weeks was counted. Second, all students kept a journal over the course of summer school. The students wrote in their journals, and the teachers read these, wrote comments, and were instructed to ask written questions back to the students. The students had to read the teacher's written comments and questions and determine if they would respond to these. The evaluator counted the number of journal entries made by the students which responded to teacher comments and questions asked of them.

The other indirect assessment was done through the computer classes that students regularly attended. One of the activities the two computer teachers developed involved students learning to select items to make a picture for a presented storyboard. The students could also add to the storyboard, or create their own. The students had to read the English storyboard to be able to adequately draw the picture. Their pictures were reproduced into "booklets" which were placed in their portfolios. Each picture was given a score for the extent it matched the storyboard. An additional score was given for the extent to which the students also developed their own storyboard through elaboration on the original, or developing a new original story.

Objective #2 was that using a portfolio and performance-based assessment, students will demonstrate a working knowledge of the following math/science processes: measuring, predicting (estimating), data collecting, graphing, extrapolating (from graph), interpolating (from graph). The integrated math and science activities used for pre- and post-assessment which are described above were also used for this objective. Specific component subscores were used for comparison. Additionally, teachers had students complete a TIMS checklist for labwork as it related to the students' specific learning experiences. Although these experiences varied by the team the students were assigned to, the TIMS checklist was still content valid, and thus deemed appropriate for this assessment. Mean scores were used to show students' knowledge.

Objective #3 was related to the development of materials. It stated that summer school staff will prepare a booklet of strategies and activites for integrating the instruction of language, math, and science for LEP students in mainstream classrooms. The four teaching teams each developed their own units to meet the mission statement, goals, and objectives of the program. At the start of the teacher training in the spring of 1995, the teachers were inserviced about the grant and the previous summer schools. The teachers reviewed the prior mission statement, goals, and objectives, and agreed to keep the mission statement and goals, and make some changes in the objectives. The Mission Statement was: The literacy in Math/Science Summer Program will encourage students to take an active role in an interactive, ever-changing environment where trust and empowerment are the building blocks for learning. The two program goals were: 1) Students will be encouraged to develop literacy, decision making, and problem solving skills by sharing experiences and using discovery strategies in math, science, and language arts; and, 2) Students will discover and experience their learning strengths through processes involving team teaching,

parent partnerships and interactive student participation. The objectives that they agree to meet at least twice in their units across the curriculum were:

At the end of our summer program, students will be able to:

1) read for different purposes;

2) express written ideas, incorporating new vocabulary using standard English, in a clear, organized manner through the writing process;

3) use self-evaluative techniques as appropriate;

4) organize, interpret, and label data correctly to solve problems in math, science, and language arts;

5) participate in cooprative group activities with peers, parents, and other adults;

6) follow verbal and written directions;

7) express ideas in comprehensible English.

The extent to which Objective #3 of the grant was met was directly measured through observing the completed, bound materials the teachers developed. The teachers developed a total of 17 units to meet the objectives. The extent to which the objectives were covered was analyzed. The intent of this evaluation was not to assess the extent to which each of the curriculum objectives were met. However, the portfolios did allow for that assessment, and some general checks were made to insure that the written curriculum objectives were being met.

Grant Objective #4 was that summer school parent staff will prepare a booklet of strategies and activities integrating language, science, and math to be used by parents with their children. The summer school parent staff worked with the teachers and produced a booklet of several activities for parents. The parent staff also hosted two different family nights for the students and their families to interact with the teachers in a variety of science and math activities. The parent staff

also conducted two day-time workshops for parents. The evaluator read the activity booklet, and attended the family nights. The evaluator compiled information from the forms the literate parents completed at the family nights, and at the other trainings. A total of 180 different response forms were obtained across these activities.

Objective #5 of the grant was related to training. It was that summer school staff will demonstrate increased levels of use of successful approaches and strategies for teaching LEP students language through the integration of math and science. This objective was measured in various ways. First, the materials the teachers developed and used for their units of instruction were assessed. The number and kind of activities was compiled. This was compared to the previous year. Second, the integration of math and science was assessed for each unit. Third, the teachers completed a journal throughout their summer school experience. The journals were turned in weekly to the Director of the Summer School program who wrote comments and tried to deal with specific requests of teachers. The journals were analyzed by the evaluator to determine that teachers had become more aware of teaching strategies through their reports of what they had learned from professional development activities.

A couple weeks prior to the start of summer school, the District purchased some computers which had cd rom capabilities. The District provided these computers, kept in a separate room, for the teachers to use in small groups with students, or individually to enhance their own strategy knowledge. The use of these was internally monitored by the computer, through a log-in system. The programs the teachers used with their students and for their own learning was logged-in by the teachers. The evaluator used this information to ascertain the extent to which teachers were using this new strategy.

Objective #5 was also assessed through the teacher enrollment and completion of a three-credit graduate level course related to human relations, culture, and the classroom curriculum. The course taught teachers how to deal with various human relation issues which emerge in classrooms, how to deal with cultural issues related to human relations, and how to identify curricular processes which biased human relations. The successful completion of this course meant that teachers were able to make modifications in curriculum to deal with human relations issues. The evaluator considered the number of teachers who enrolled in and successfully completed this course.

Following the completion of summer school, teachers also completed a detailed evaluation of the overall project. The successful completion of objective #5 is also indirectly assessed within the questionnaire (attachment #1). The subjective, qualitative information obtained was collated by the evaluator.

Objective #6 was that summer school parent staff will demonstrate an increased knowledge of ways in which to foster language development through math and science integration. Parent staff completed their materials development and trained parents. The evaluator considered that if the parents felt that they had been successfully trained, the parent staff had demonstrated increased knowledge in fostering language development. The evaluator used the parent questionnaires mentioned in Objective #4 for this purpose. Additionally, the parent staff completed questionnaires designed by the evaluator. The questionnaire is found as Attachment #3 in the appendices.

Objective #7 was that sumer school parent staff would provide inservices to district parent groups. The evaluator collected information about the trainings and used the parent questionnaires as described above to ascertain if this was done.

Results of Year Three

The results will be presented as they relate to each Title VII SAG objective. Further information deemed important to the program will be presented after the specific objectives' results are presented.

In part, a series of one-sample *t*-tests was used to assess how well Objective #1 was met. The results are presented in Table #1.

TABLE #1: Student Pre-and Post-Literacy and Writing Mean Scores

	Pre- (Start)	Post- (End)
LAS-like English vocabulary	7.4	8.6
LAS-like English focus math & science	5.5	7.2
Number words produced	29	49
Number words produced in English	14	42

For Objective #1, *t*-tests were run to compare the pre- and post- assessement mean scores for differences. For each, there was a significant difference at the p>05 level, with the mean score comparisons showing gains from the beginning to the end of summer school. The LAS-like English focus on math and science test results showed a difference increase of over 25%. This difference increase is also seen in the number of words produced, and in the number of words produced in English.

The analysis of the student book logs found that students read an average of 9.7 books over the six weeks. The student journal analysis found that students wrote an average of 14.4 different times to respond to teacher comments and questions. The computer booklets produced by students were

scored for the extent that the picture produced matched the storyboard. There were a total of 20 items identified in the storyboard for students to produce in their pictures. The mean score of items produced was 16.5. The computer-generated booklets were also analyzed for elaboration, or the writing of their own story by students. A zero-one point system was used for an elaboration scoring, either there was no elaboration, or there was elaboration. The mean score for the students was .88, indicating most students did elaborate on their storyboards. A zero-one point system was also used if students did not or did produce their own storyboards. The mean score for students was .91, indicating almost all of the students developed their own storyboards.

In all, it was determined that these results support that Objective #1 was met, with students increasing their English competency in reading and writing by over 25%.

For Objective #2, the students' mean scores of the various TIMS checklist parts were used. The maximum score for the entire checklist was 14. The students' overall mean score was 6.9. The mean scores for the TIMS parts are presented in Table #2. The mean score of the length section was 3.4, out of a possible of four points. The mean score for area was 2.7, out of a possible three points. The mean score for volume was 5, out of a possible seven points. The mean score for mass was 2.2, out of a possible three points. The mean score for graph was three, out of a possible three points. The mean score for picture was 2.9, out of a possible three points. The evaluator noted that not all of the portfolios of those students completing the summer school contained the completed TIMS checklist. As about 15% of the portfolios were missing this form, or did not have a complete form, these results need to be taken with some caution.

Table #2: TIMS Checklist Results

	Mean Score	Total Possible
Length	3.4	4
Area	2.7	3
Volume	5	7
Mass	2.2	3
Graph	3	3
Picture	2.9	3

The assessments used for Objective #2 indcated that the students did demonstrate a working knowledge of math and science processes including measuring, predicting, data collecting, graphing, extrapolating, and interpolating.

When the units were developed, the teachers were given the responsibility to insure that each of the objectives for the curriculum were covered at least twice across the units. The units were all bound for distribution to the schools in the District at the end of summer school. This process met Objective #3 of the Grant. However, the evaluator was also concerned that the students also had a chance to actually meet the objectives developed within the units, that is that there was evidence that the developed units were presented to the students. The students' portfolios were used to check that there was evidence of each unit's assessments in the portfolios of the students who should have been exposed to that unit. A check of 30% of the portfolios found 97% of them had the unit assessments. Therefore, it seems that Objective #3 was met in all the units.

Part of Objective #4 was met in that a Family Activities Booklet was developed and produced, and distributed by the parent staff working in cooperative with the teachers. The school staff made

the decision to bind all of the various activities into one booklet, and to produce it with back-to-back English and Spanish for each activity. This allowed parents who had literacy to made use of it. There were 49 parents who participated in the first family activity night, as counted through their completion of a questionnaire about their child's portfolio. There were 39 parents who completed a sign-in sheet at the second family activity night. The evaluator was present at these events and noted that not all parents were literate, and able to read or write in either language, so they did not complete anything. The responses of the parents who participated in the first family activity night were generally short, and easy to categorize. Overall, 80% of the parents indicated that they felt good about their child's work in reading, in writing, in math, and in science. Some of these parents counted in the good category said "very good", "great," etc. The rest of the comments were constructive, indicating that the student needed to keep working, that the student needed more English, etc. Over 90% of the parents indicated that they had no concerns about anything in the portfolio. The comments that were made were generally that students had to improve spelling or calculations.

There were 42 parents who participated in the parent training sponsored by the parent staff and completed the parent training form. The responses to the questions on the form were:

I came to this class because I want:

to help my child with math: 23

to learn more about math being taught: 28

to get math materials: 20

to learn more about how to do math myself: 35

to meet others: 9

to lean English: 14

All of the respondents indicated that they anticipated using the materials with their children, that the workshop was presented and organized well, and that they wanted these sessions to be held during the regular school year. Overall, it was determined that Objective #4 was met. as a booklet of strategies was developed, and was made available to parents.

Objective #5 was assessed through six different means. The first way was to compare the number and kind of activities found in the unit books last year to those that were developed this year. The curriculum development process that was used tried to insure that no units of last year were reused this year, and that new units were significantly different from previous years' units. The comparison found that only one unit which was developed this year had activities that were similar to those found in a previously developed unit. The teachers did seem to be using other strategies, and incorporating things that they had learned through the staff development processes provided to the teachers.

The second way to assess Objective #5 was to look at the integration of math and science in each unit. With the exception of two units, there were a variety of at least two math and two science concepts included in each unit. The two units that did not meet this criteria each contained at least one math and one science concept.

The third way to assess Objective #5 was to do an analysis of the teacher's journals. The teachers had been provided inservice training on cultural diversity, on dealing with conflict, and on curriculum development. Each of these trainings provided the teachers with additional strategies for them to use in implementing the curriculum. The journals the teachers kept, particularly their comments about the trainings, and their requests for information, and the subsequent comments on the information they received indicated that they were using a variety of new strategies in the

classroom, including teaching their students self-regulation activities, and developing meta-cognitive awareness.

The computer log-in of the teacher use of the cd roms was another indicator for Objective #5. The log-in showed that 12 out of the 18 teachers used the cd rom programs at least twice over the six weeks. Three teachers used the programs weekly, and two used them four times. The cd rom program use alone indicated that the teachers were learning new strategies. Six of the eighteen teachers used the cd rom programs with some of their students. Therefore, there was further evidence of teachers integrating new strategies in their lessons.

The fifth indicator for Objective #5 was the sign-up and successful completion of a three credit university course. Twelve of the teachers involved in the program signed-up for and successfully completed the course. The sixth indicator for Objective #5 was the responses to the teacher questionnaire. The responses indicated that the teachers were engaging in a variety of professional development activities, and were using various new strategies in their classrooms. Overall, there was strong evidence indicating that the teachers did demonstrate increased levels of the use of successful approaches and strategies for teaching LEP students language through the integration of math and science.

Objectives #6 and #7 were assessed through the parent participation form responses. These were discussed earlier. The results indicated that the parent staff had demonstrated an increased knowledge in literacy, math, and science; and that the parent training had occurred at the district level.

Data Analysis and Results Across the Three Years

Each of the summer school projects has been different, based on the staff, the students, etc. However, there also have been commonalities. The teachers have had professional development, they have learned and used new instructional strategies. They have developed these strategies into unit booklets which have been distributed throughout the District. They have designed activities which integrate literacy in math and science, and helped students achieve that literacy in English. They have worked with parents, and helped parents have activities which integrate these skills at home. The students have consistently achieved growth in English skills, in math skills, and in science skills of at least 25% from pre-assessment to post-assessment, although the specific skills that have been measured and the ways these have been measured have varied. The parents have been involved in the programs. They have been provided with booklets for building skills at home, they have been provided opportunities to learn more math and science and literacy skills. The parents who have been trained have gone out to train other parents in the District.

The District is set-up with a variety of schools of various sizes spread throughout the city. There is one central administration building. The District has not had much money, and has not centralized its student records, nor had the means and space to keep records to follow the students who have been in summer school or other programs. One of the larger concerns of a program of this nature is the long-term effects, if any, on the students. The evaluator wondered if the students who were in the summer school programs in year one and year two were transitioning out of the bilingual classrooms faster than their peers who were not in summer school. With the lack of central records, the evaluator could only take a list of names of students from school to school and try to compare information on students found with others. The only comparison group control variables were for age and years in the bilingual program, so that these were equal across both groups at the time that the experimental groups of students went to summer school. There were only 40 students

that were easily located as being part of the experimental group. Many students had transferred to other schools, or had otherwise left the district. Many students had names which were too similar to other students, and it could not easily be determined that they had been part of the summer school program. Therefore, the students represented about 10% of the potential students that could be in the experimental group. When compared to the non summer school group, the students who had summer school transitioned from the bilingual program an average of two months before other students. Many of these students had transitioned at the semester break, or at one of the quarters, while their peers remained in the program until the end of the year. As this was not a truly randomized sample of the student group, the data should be treated cautiously. The District was not set-up to follow-up and track all of the summer school students adequately, and therefore find out if the transition was in fact significantly sooner.

The evaluations of each of the three years of the program indicate that the objectives of the grant have been met. The District has provided support and resources to help meet the objectives. Several hundred students, their parents, and their families have benefitted directly and indirectly from the program.

Conclusions and Recommendations

The results of the the program data indicate that the program was successful in the third year, and there are indications that results of all three years of the program were positive, with students increasing their literacy in math and science, and in use of various math and science concepts. The teachers gained skills in integrating math and science with literacy in the curriculum, and in applying these in the classroom. The parent staff gained skills in knowledge and training, and the parents were provided various training experiences and materials.

The results do not speak to some of the other accomplishments of the program. One of these was the use of computers and calculators by the students, many of whom indicated that they had never worked with a computer prior to the summer school experience. Another was the help and interest generated by the program. Parents started volunteering, preservice teachers put in their required hours and stayed for more hours. Others from the community volunteered or provided donations. At Wilson School, the front of the building's yard was in disrepair at the beginning of the program. The teachers made a plan to use math and science and beautify the school grounds. With donations, plants and flowers were bought, and students helped plan and carry-out the plantings. By the end of summer school, the front of Wilson School was full of flowers instead of weeds. Parents and students commented on the difference, and seemed to take pride in the facility.

In year two and year three, there was always time allocated on Friday for the entire school to come together for a joint session. In year three, the teachers organized their theme of "Dream a Dream, Imagine That..." into a topical approach, where the entire school created a "dream machine," named it, and learned to sing a song one of the teachers wrote about it. Students engaged in these get-togethers through singing, dancing, and doing other group activities. Typically they all wore

their school t-shirts that day, shirts that they had colored with the summer school theme. Many of these were video-taped, as were some class lessons. The spirit of "teaming" and sharing is evidenced many times, with the unstated goal of students being socialized into our society being met.

The results of the project lead to some overall recommendations for future programs. It is recognized that this is the last year of the summer school, and no further funds are tied into this grant for the following year. Therefore, recommendations were written keeping in mind that general recommendations might be more helpful for other program planning and development.

The year one and year two project evaluators made some recommendations that the year three evaluator also recommends. In addition, other recommendations are made.The recommendations are:

1) Future summer school programs need to have a school location which is central in the district, and which meets the needs of students, staff, and parents. Special consideration needs to be given to not only availability for the students, but the neighborhood resources, and the usability of the school during the summer.

2) Future school programs need to balance employment of the staff, balancing employment by hiring those who may be familiar with various components of teaching summer school, and also employing others who have skills in needed areas.

3) The training aspect of the summer school program continues to need some modifications. There should be a year-long training plan that is developed and followed.

4) The high level of parent involvement needs to continue in future programs.

5) The use of classroom aides needs to be expanded and continued in future programs.

6) The district should make use of preservice teachers to further exp. d the supportive services provided to students and parents.

Recommendation 1: *Future summer school programs need to have a school location which is central in the district, and which meets the needs of stduents, staff, and parents. Special consideration needs to be given to not only availability for the students, but the neighborhood resources, and the usability of the school during the summer.*

The year one and two project evaluators had recommended that the site of the project be a central location. This year's location was in the middle of the city. It seemed to have benefitted the students as attendance was generally high. Across the three years of the project, average attendance was the highest in year two. In year two part of the location was air conditioned, while it was not in year three. The year three attendance also was effected because of the unusually hot weather, which often resulted in city-issued heat warnings, and the need to close the school early, or reschedule school-related activities because of the heat. The heat also had the effect of techers having to make modifications on their curricular plans. The classrooms got too hot to work in, so students would work in the halls or in the gymnasium in groups. Instead of parts of classes going to the computer lab, whole classes went because it was air conditioned. While noone would predict that another summer would be as bad as this last one, certainly the administration needs to be concerned that students have the opportunity to achieve in a user-friendly environment. Therefore, if possible, future summer programs should be held in air conditioned facilities.

Recommendation 2: *Future school programs need to balance employment of the staff, balancing employment by hiring those who may be familiar with various components of teaching summer school, and also employing others who have skills in needed areas.*

The year one and two project evaluators had also recommended that the professional staff be re-employed. In year three, about two-thirds of the staff had previous program experience. Some staff were not rehired because they had left the district, indicated that they would not be available for the staff development, indicated that they would not be available to teach all of the summer school days, or had not continued to show their investment in developing new instructional techniques. This last reason was primarily the determination of the District administrative staff and Ms. Cindy Mosca, as she supervised staff throughout the regular academic school year. Programatically, this allowed new staff to be trained by old staff, and allowed for some program consistency while bringing in new ideas and also providing for some new training which was not previously given to staff. Overall, the combination of experience with new staff was probably one of the reasons that the program was successful. However, for a new program, a concerted effort needs to be undertaken to hire teachers who do not typically get involved in such offerings, and new staff need to be notified of the opportunities and their chances to participate.

Success was evident in the program in many areas. However, there were also some weaknesses noted. Many staff reported that they didn't give the time to the program that they previously had, and the lessons developed by some of the experienced staff were less extensive in their development than in previous years. Additionally, some staff made minor change in past lessons and tied to use those materials again instead of developing new ideas and using different resources. The curriculum consultant (who also served as evaluator for year two and year three) logged more hours in overseeing curriculum development this year than in the previous two years. The overage was attributed to the new staff who required help in developing the integrated thematic curriculum, and to working with the experienced staff who needed support to develop new, unique materials. The recommendation is made that staff be given the opportunity to apply for future employment, but that they be clearly told that new materials will be expected.

Additionally, the district should balance the hiring, so that about 25% are previously-employed staff, and the majority are new-to-the-program stafff. While more staff development will be needed, this should enhance productivity, and lead to new, fresh ideas for integrated curriculum, and for training.

Recommendation 3: *The training aspect of the summer school program continues to need some modifications. There should be a year-long training plan that is developed and followed.*
Input from the teachers in year two and in year three, review of developed curriculum materials for the three years, and the evaluation processes used in the past two years lead to the conclusions that the training process for the teachers needs some minor modifications in future programs. Particularly, a staff training plan needs to be developed and followed from the beginning of the process. The training program should not only have clearly specified dates for various training, but also provide a variety of training experiences. Teachers reported that they felt that they had received training on some activities many times, but lacked some training in other areas.

Recommendation 4: *The high level of parent involvement needs to continue in future programs.*
The year one and year two project evaluators had also recommended that the high level of parent involvement continue. The project continued to have parents involved by having them act as teaching assistants, and by having them actively training other parents. In year three, the project also had parents who were hired to serve as teaching assistants that were specially trained to teach other parents how to develop math and science activities at home. These teaching assistant/trainers hosted two sessions for parents to be trained. Both sessions, held during the day, drew over 40 parents to each session. The project also had parent involvement at two special parent night activities associated with summer school. In year three, the two parent nights drew over one half

of the parents to the school location. Parents participated in providing feedback on their childrens' portfolios of work, did their own literacy development project, and also participated in activities.

Also in year three, similar to year two, some of the parents and staff developed an integrated literacy, math, and science booklet for use at home. The booklet was done in dual language, and offered pictures, clearly labelled sequenced activities, etc. The evaluator also continues the recommendation made in year two, that future programs have as a component the development of materials for the home. These materials should provide scuccess strategies for parents and students to interact with each other and with the school. An additional recommendation is added that any materials which are developed in booklet forms include a page which tells parents how to deal with violence, gang activities, and provides information about social services available to the students and to their parents. The nature of this grant meant that most students and most parents were not native-born, or had not lived in the United States for very long. During the course of the summer school, at least one student was known to have lost a sibling due to violence, and two other students had experienced gang violence. Students who are in mourning, or living in fear do not learn. The chances are that they, and their parents do not have access to social services for help the way that others who know the dominant language do. The school providing suggestions and resources may help save some students' lives down the line.

Recommendation 5: *The use of classroom aides needs to be expanded and continued in future programs.*

Recommendation 6: *The district should make use of preservice teachers to further expand the supportive services provided to students and parents.*

In year three, both parents and university pre-service teachers were used as aides in some classrooms. The feedback from teachers was that the program would benefit from the addition of

even more aides in the classroom. The evaluator feels that aides could be effectively trained and used for a variety of supportive projects with the students. The evaluator reommends that future programs continue to use university pre-service teachers as aides. Additionally, they can be used for tutoring, and other specific skill building.

In conclusion, the Special Alternative Summer School Program was successful in Year Three, and across the three years of implementation. The data supports the notion that the students increased their literacy in math and science, that teachers engaged in professional development and innovative teaching, and that parents were provided opportunities to learn and receive materials to help them engage with their children. There are several recommendations made. An additional recommendation would be for the District to consider finding ways to continue to fund and expand this program.