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STARBASE KELLY: AN ANALYSIS OF THE EFFECTIVENESS OF A PARTICULAR AT-RISK PROGRAM

A Pro Gradu Thesis

by

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I want to express my gratitude to the Starbase Kelly Staff for their support and help in this project. Especially, I want to thank Louise Cruz, without whom this thesis would not exist. She offered me this project and she also encouraged me along the way and provided any information needed.

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HUMANISTINEN TIEDEKUNTA
ENGLANNIN KIELEN LAITOS

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Tutkielman tarkoituksena on selvittää Yhdysvalloissa toimivan Starbase Kelly –ohjelman tehokkuutta lyhyellä ja pitkällä aikavälillä. Ohjelma on kohdistettu nk. riskioppilaille, jotka ovat vaarassa pudota koulusta huumeiden, perheongelmien, taloudellisen tilanteen, jengien tai muiden vastaavien syiden vuoksi. Materiaali koostuu Starbase Kellyltä saaduista oppilaitten alku- ja loppukokeista sekä 210:stä palautetusta oppilas/huoltaja kyselylomakkeesta. Tutkielmassa pyritään vastaamaan kysymyseen onko tämä nimenomainen ohjelma tehokas. Koska tutkimus on tapaustutkimus, tutkielma on pääosin kuvaileva.

Yhdysvalloissa nämä riskiryhmään luokitellut oppilaat ovat saaneet suuren huomion ja heille suunnattuja kokeilevia ohjelmia syntyy koko ajan lisää. Starbase Kelly on eräs näistä ohjelmista. Sen tavoitteisiin kuuluu muuttaa osallistuvien oppilaiden suhtautuminen kouluun, oppimiseen ja ryhmätyöskentelyyn sekä tähdentää omaan tulevaisuuteen panostamisen tärkeyttä.

Tutkimuksen tulokset osoittavat ohjelman vaikuttavan positiivisesti lyhyellä aikavälillä (viisi päivää). Muutos tapahtui kohderyhmässä melkein poikkeuksetta. Ohjelma näyttää myös antavan viitteitä positiivisista vaikutuksista pitkällä aikavälillä (1-4 vuotta).

Tuloksien yleistämistä rajoittaa kohderyhmien koot (67 oppilasta ja 120 kyselylomaketta). Tuloksista saa suuntaa-antavan kuvan ohjelman tehokkuudesta mutta suuremmalla kohderyhmällä voitaisiin selvitää pysyykö tulos yhtä vaikuttavana. Tulevissa tutkimuksissa voitaisiin kuvata koko ohjelmaa sekä selvittää muiden vastaavanlaisten ohjelmien tehokkuutta.

Asiasanat: alternative education. at-risk programs. at-risk students. inequality. Mexican-American students.

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1 INTRODUCTION

The sun was shining brightly. I had to shade my eyes with a hand to see better. A group of young children were standing on a green field holding little model rockets in their hands and talking excitedly. A dark-haired boy ran to the launch pad, attached the 2-foot-tall rocket to its stand, whirled around and headed for the control panel to send it skyward. "Hey! What about your wires?" a man supervising the situation yelled after him. "Oh, I forgot!" said the boy as he raced back to his rocket. When the task was done the boy ran once again to the control panel and, as on a cue, the rest of his class chanted his countdown: "Five, four, three, two, one." Blast off! The rocket propelled about 150 feet into the air. The boy watched the rocket's nose cone pop off as the parachute snaked out and the rocket sailed on the stiff breeze back over his head. Success.

This is what I saw on the day I visited Starbase Kelly. Starbase Kelly (from now on referred as SBK) is a program that targets at-risk children from low socioeconomic and minority backgrounds. It operates in the former Kelly Air Force Base, in San Antonio, Texas, with the cooperation of the United States Air Force Reserve's 433rd Airlift Wing. The main goal of SBK is to motivate the attending children to stay in school and to take responsibility in their own future. The children are taught physics and aerodynamics along self-esteem, teamwork, and drug reduction. SBK located in San Antonio, Texas, is not the only Starbase program. The program has spread itself around the country after its foundation in 1992 as a consequence of positive results achieved in the first Starbase programs. The program is described in more detail later in this research (p. 31.)

Most of the SBK students are Mexican-American. This can be explained by the location of this particular Starbase program. San Antonio is located in the South West of Texas in Tex-Mex area. Most of the immigrants, legal and/or illegal, crossing the Mexican-American border toward the East will go through this area. Some immigrants stay in the area to be near their homeland and some move elsewhere. In San Antonio 55 per cent of the population is of Hispanic (Spanish speaking person especially one of Latin American descent living in the US) origin and the majority is Mexican. Even though most of the children in SBK are Mexican-American by origin, that does not mean the program is only for them. African-Americans as well as Anglo- and Native-Americans are also welcome to the program. When it comes to attendance, a particular ethnicity is not a requirement.

Previous research done on at-risk children seem to concentrate more on the factors which place these children at risk. There are common views among researchers based on studies made that certain ethnic groups are more prone falling into the category of at risk than others. What causes these ethnic divisions is unclear. There are many programs that target especially at-risk children and teenagers and many of them have reported of success. The question remains, how successful these programs really are and on what basis? If there are any studies made out of these programs they are extremely hard to find because of limited public access. There seem to be masses of research done about the factors that place Mexican-American at risk as well as other ethnicities. But there is no valid research done about the programs that are targeted to these people. I would have compared some programs with SBK if only I had found any studies of them. Collecting material was troublesome. There are masses of studies made of at-risk populations but no access to them from Finland. I had to be grateful for the material I got.

The purpose of this study is to examine whether the selected at risk program achieves its goals in the short and long term. In other words, the study will examine whether the program has the desired effect on the attending children. Does it change their attitude and motivation toward school as well as their own thinking about their future and about taking responsibility for it? This study will be carried out by analyzing the pre- and post-test results (done in the SBK classroom) of these children and by analyzing a questionnaire. The pre- and post-test results will be analyzed to find out the immediate effects of the program on the attending children. The analyzed questionnaire/survey has been conducted by SBK staff. It was sent to the students who have attended the program during its four year existence and the parents of these children. The goal of this survey was to study the effectiveness of the program in short and long term based on the pre- and post- test results as well as the student and parent surveys.

The reason why I am doing this research is that there has been no former research on SBK and because SBK asked me to help in analyzing the information from the questionnaires. I have visited the program myself and I found it very positive and enthusiastic. It seemed to work, from what I could tell. The students were enthusiastically in the learning process and asking a lot of questions about all kinds of things. This was totally different kind of program I had ever seen here in Finland or anywhere else. The nature of the program intrigued me to find more about it. Also the thought that this situation of at-risk children could become true here in Finland with integration to Europe and immigrants, urged me to find more about the matter. Now I have an opportunity to study the SBK program more closely and find out the real effectiveness of the program.

2 IMMIGRANTS AND IMMIGRATION TO THE UNITED STATES

The United States was the first modern country who fought successfully against its colonial master. That is why it became an ideal example to other countries struggling for their freedom. The whole world kept the United States as an example of hope and democracy and economic prosperity.

The United States is a vast cultural and ethnical "melting pot." At the end of the nineteenth and the beginning of the twentieth century, America was seen as the promised land and many Europeans as well as people from Asia turned their faces toward the United States and started their journey. For many the journey was all they could afford but they hoped for a new and better life and future in the new country. Even today, though there are many restrictions, for example the strict immigration laws) to the masses allowed to the country, the U.S. is still seen as the promised land. American dream still seem to tempt people to immigrate. Relatives and/or friends send home stories of how wonderful the country is and that everything is finally going to be all right. "Land of Canaan" is what Dinnerstein and Reimers (1982:16) call the immigrant view of the country.

At the end of the 1860s, many immigrants had already found their place in the U.S. and had permanent work. However, There were problems. Americans could not or would not understand why any ethnic group was reluctant to part with its own heritage for the values of the dominant society (Dinnerstein and Reimers, 1982:96.) Some labor unions started to strongly oppose immigration, fearing that the newcomers would take all the vacant jobs and lower the wages

(Henriksson 1990:176.) The situation was the same all over the country, and not only in southwestern states where lowered wages were a reality because of cheap Mexican labor.

In the years from 1900 to 1920 the population of the United States grew from 76 million to 106 million. The growth was mainly caused by mass immigration. The peak of immigration to America was during those years (Henriksson 1990:178.) According to Henriksson (1990) between the years 1820 to 1967 approximately 44 million people moved to United States from outside its borders. There were immigrants before and after the America's declaration of independence in 1776 but the first real immigration wave was from 1848 to 1855. At the time, famine in Europe drove many across the ocean. Also political disturbances, especially the "crazy year" of 1848 caused westward movement. For example many Germans, among others, left their homelands for the hope of better future (Henriksson 1990:181.) The growing industry after the American Civil War as well as promises of free land in The Land Settlement Act allured people. The shortage of food drove people to leave western Europe but also people from eastern and southern Europe started to flow into the United States. Until 1890s the main flow of immigrants had come from northern and Middle Europe as well as from England and Ireland. Finnish immigrants belonged to the new immigrant group. Before the First World War nearly 400,000 Finnish people immigrated to America among the millions of other Europeans. However, almost one third of the Finns later came back home (Henrikkson 1990:181.) The First World War stopped the flow for a while but after the war there was one more wave of immigrants coming to the U.S. This was finally weakened by the depression and restrictions of the 1920s (Henriksson 1990:182.) The myth of the American "melting pot" was born.

But life was not so good for everybody after immigrating to the United States. There was segregation to different degrees according to ethnic groups. Dinnerstein and Reimers (1982) report that Japanese immigrants were put in virtual concentration camps during national crisis called the Yellow Peril. That was a visionary invasion of the Asians, and American people started to believe it true when numbers of Asian immigrants grew in Western states (1982:67.) For example, the Japanese were considered too successful and that made them something to fear (1982:51.) However, the Japanese were not the only group who suffered from discrimination. Chinese laborers were treated almost as slaves (1982:51) because they were considered to depress the wages too much in the West, just as Mexicans in the southwestern states. Moreover, and saddest of all. is that the anger and fear was targeted not only toward adults but also toward their children. In San Francisco, Oriental children were segregated at school This all happened because of fear of the growing Oriental mass immigration and its consequences (Dinnerstein and Reimers, 1982:52.)

Some American people started to organize in the name of national security. One of these groups is known above the others: the Ku Klux Klan. The KKK is a racist organization which has existed for a long time. It was founded in 1865 and the members intimidated the newly freed slaves. The Klan advocated white supremacy and 100 per cent Americanism. In the 1920s, the hooded and robed Klan members targeted blacks, Catholics, Jews, communists, and all non-American foreigners. During the peak of American immigration this Klan movement had also become a powerful force in American politics and society. During later decades the Klan was well known of their rituals: hanging effigies and burning crosses (Encyclopedia Britannica).

Immigration Today

Today the situation is totally different. America may still be seen as the promised land for many but getting in is a whole different matter. The United States has made immigration policies much tighter and the flow to the country is not as big as it used to be at the beginning of the twentieth century. Even people's attitudes have changed toward the newcomers. Most Americans still do not consider them as a threat and treat them just like everybody else. But we can still find those who have something negative to say about the whole immigration matter. These people are usually found in states where immigration is the highest, e.g., California and Texas, and, the new arrivals can be seen in everyday life.

Robert Suro (1996) carefully examines the political reaction to immigration at the grass root level. Suro argues that sweeping immigration bills of the past, designed to guide the U.S. policy for decades at a time, have proven woefully ineffective, and he calls for new national immigration policy - one that is more responsive. He also claims that Washington should be prepared to adjust its priorities regularly and shift resources in response to new needs at home and changes in the immigration flow from abroad.

This is a valid view. The immigration policies are not as up-to-date as they should be because of the big stream of immigrants still coming to the country. These policies are not very effective with the new democratic features of this incoming mass of people. Today most immigrants applying to the U.S. are from Mexico. The second largest group comes from Asian countries. Illegal immigration will get out of hand if nothing is done soon. Suro (1996:7-8, 20) states that both legal and illegal immigration is increasing in number. The question, in his

view, is not one of keeping people out, but rather shaping the flow so it meets America's needs in a changing global economy.

Suro (1996) suggests that the risks of immigration have been misunderstood and therefore policies are passive. Even more polarization of people (rich vs. poor) develops than there has been so far and, according to Suro, the situation is worsening all the time. The inequality of people, especially ethnic minorities, is a part of everyday life in the United States. That group of people is called the "underclass" (Suro 1996:22-25.) They do not have proper jobs, if they have jobs at all, and many are unskilled workers. They affect the skilled workers in getting individual job opportunities from the open job market (Suro 1996:10.) Suro also states that certain types of occupations attract immigration in the US. For example, "foreign born doctors have become the primary workforce in urban public hospitals to such an extent that it appears to many causal observers that they have usurped a whole category of jobs previously held by natives (Suro 1996:25.)"

Since 1968 Mexico has been the source of more newcomers to the United States than any other country. Mexicans and other Hispanics are the nations largest minority after the African-Americans. Some government estimates state that Hispanics will outnumber African-Americans by the year 2000. Hispanics account for more than one-fourth of all legal entrants since 1965 (Suro 1996:87,) not to talk of illegal entrants. It is impossible to tell how many have arrived. However, Suro presents a table of illegal Mexican entries. According to the table, the number of illegal immigrants in the USA has only grown. These figures state the illegal immigrants who have been deported.

Year	Number of deported illegal immigrants
1964	45,000
1966	89,751
1970	277,377
1973	542,934
1977	952,778

(Table 1: Number of deported illegal immigrants. Adapted from Suro 1996:106.)

Mexican-Americans are the largest and the most prominent group with perhaps 10 million or more in the USA. Eighty per cent of them live in the Southwest and the majority in urban areas (1996:88.) Suro presents a table (p. 88) with estimates of the Mexican-American population of five southwestern states.

State	Per cent of Mexican-Americans of the state population
California	20%
Arizona	20%
Texas	25%
Colorado	25%
New Mexico	40%

(Table 2: Per cent of Mexican-Americans of the state population. Adapted from Suro 1996:88.)

As we can see the numbers are quite dramatic in the sense that they really show the large Mexican-American population.

Many other states have their own immigrants. For example, Minnesota and Michigan have many immigrants from Scandinavia. Numerous Swedish and Finnish family names are still found in the northern areas. Asians have populated many western states and Italians have found their places in the East coast.

Some say that there is no such thing as an American culture but I oppose that view. There is an American culture that is a combination of all the cultures present in the United States. All of them have acquired some features from each other and just that mixture has formed the American culture. I admit that this concept is difficult one and that there are many who oppose my view, those who want to keep their own cultures apart, untouched, and unique among those who have started to assimilate to the dominant culture.

Most Americans hold two images of their country. For those whose forebears arrived here voluntarily, the image is of a beacon of light of liberty and a haven to the oppressed peoples of the world. The other image is that of America the beautiful: a land of great natural beauty teeming with wildlife and offering a healthful environment to its denizens. These two images will stay as long as there is the United States of America.

3 EDUCATION, AT-RISK STUDENTS AND IMMIGRANT STUDENTS

Who are at-risk students?

Klingstedt (1989:11) has identified at-risk students as ones who are likely to fail at school or fail at life. This is by no means the only definition. One of them is used in *The Goals 2000: Educate America Act of 1994*, which identifies an at-risk student as one "who, because of limited English proficiency, poverty, race, geographic location, or economic disadvantage, faces a greater risk of low educational achievement or reduced academic expectations" (US House of Representatives Report 103-227.) Dougherty (1989:6) has defined educationally at-risk students as "those who, for a variety of reasons, do not perform well in school and who are likely to drop out." In a Dictionary of Education (Shafritz, Koeppe, & Soper, 1988:43) at risk is defined as "the increased probability for school failure or learning problem."

As we can see, being at risk is not necessarily synonymous with dropping out of school. All the different definitions of the term have caused difficulty in comparing statistics. Therefore, it seems that researchers, school districts, and state agencies have developed their own definitions.

The term at-risk became popular in the 1980s. According to Siu (n.d.), definitions of "at risk" that focus only on the socioeconomic and cultural characteristics of the students are used to blame students for their shortcomings.

At-risk factors derive mainly from family and student background, student behavior, school practices and contextual variables. However, it is important to emphasize that lists of at- risk predictors are never all-inclusive. In his study, Klingstedt (1989) also collected characteristics that are common within at-risk population. These characteristics include sex and race. Males seem to be slightly more at risk than females, and Mexican- Americans lead the statistics followed by African-Americans. Asian- Americans are the least to be at risk, according to Klingstedt. However, Siu's report claims that many Asian-American children are also at risk. To what extent, it is hard to say because there are no comparative numbers to show the difference for example between Asian-American and Mexican-American. Siu (n.d.) suggests that cultural background may be one factor that pushes the Asian-Americans to try harder and that way to succeed. Many other factors seem to be also present when we are talking about at-risk students. The parent's level of education, absenteeism, special education grouping, at least two failed courses, as well as drug use appears to have an great impact on the students and their motivation to stay in school (Klingstedt, 1989:15-24.)

Several researchers have found that students who are placed at risk due to poverty, race, ethnicity, language, or other factors are rarely well served by their schools (Hilliard, 1989; McDill, 1973.) They often attend schools where they are tracked into substandard courses and programs holding low expectations for leaving (Oakes, 1985.) If schools are to achieve the desired goal of success for all students, they must hold high expectations for all, especially this growing segment of learners. They must view at-risk students as having strengths, not "deficts," and adopt program and practices that help students achieve their true potential. "The purpose of these programs is to motivate students, and with the help of close guidance and supervision allow them to experience

success" (Ministry of Education, New Zeland, Improving Achievement of At-Risk Students: Alternative Learning Programmes.)

According to Smith and Smith (1989:1-2), at-risk students cannot compensate for a mismatch of their personal learning style preferences and their instructor's teaching styles. Each student learns things differently from others and if the instruction is far from this preference it may cause lack of interest and failure. Due to this situation, these students start to misbehave in classes and disturb other's learning process. This is the main reason for having so many different kinds of programs targeted at at-risk students. There are attempts to find the most suitable way for learning and teaching children with different attitudes and interests (Smith and Smith 1989:3.)

Preventive Actions

Hundreds of different programs and projects have been established for this growing student body to keep these at-risk students in school. Intervention with at-risk students takes place on many fronts, within and outside of the school system, and involves students, their families, teachers, school counselors, community agencies, and governments on all levels.

The purpose of this section is not to identify exemplary or high quality programs and projects. It will show the wide variety of different kinds of programs that are available for children who are in danger of falling into the at-risk group, or the ones who are already counted to be at risk.

Among these different programs and projects there are so-called "early intervention programs." Bryant and Ramey (1987:36) have divided them into early childhood (preschool) programs, and infancy programs

which are again divided into three subcategories: center-based, parent-focused; center-based, child- and parent-focused; home visit, parent-focused. The purpose of these programs is to break the 'cycle of poverty' of socially disadvantaged families and to modify the course of early development, to better prepare socially disadvantaged, at-risk children for public school.

In 1991, the United States Congress commissioned the Department of Education's Office of Educational Research and Improvement to investigate the different sides of education reform. One of these studies found out that the most effective programs for at-risk students share some features. These schools provide a caring atmosphere and surroundings while operating similarly with high-readability organizations. Irmsher gives air-traffic control towers as an example of HRO (high readability organization.) All staff in the air-traffic control towers give every bit of their working skills and even more to bring individual planes safely to the ground. So, these people give over 100 per cent support to any needs. These organizations will provide over 100 per cent support to meet the need of these programs to achieve their goals (Irmsher 1997:2.)

As an example of the nature and variety of some of these programs I will mention C.A.R.T. – the Children At Risk Today project in Richmond Virginia (C.A.R.T., anon.,) which is dedicated to lowering risk involvement and its serious consequences. Starbase program, an at-risk program, has been acquired in several locations around the United States and its goal is to get the targeted students to change their attitudes toward school and learning as well as taking responsibility for their own lives. And Omega High School in Richmond, California (Omega High School, anon.) serves the at-risk population in the West Contra Costa Unified School District.

Most of these programs have shown very promising results. At least the programs have achieved the goals they have set themselves. But as Siu (n.d.) points out, many of the programs are local, and this is the reason why descriptions and evaluation results tend to be unpublished reports not readily available to scholars nationwide or to the public.

Educating Migrant Students

New immigrants in the United States are enlivening the schools at the same time as they are overwhelming them. The waves of immigration have led to an increasingly diverse school population and have created a new set of problems. Today, with children from such diverse backgrounds, schools are inadequately prepared to serve the need of the students who are arriving in increasing numbers. The challenges associated with the new immigrants are numerous. Problems now exist that are related to desegregation, multicultural education, higher-quality education, and bilingual education. As the population of schools in the United States becomes more and more diverse, the most appropriate ways to educate this fascinating, heterogeneous population must be sought.

Immigrant students constitute an ever increasing proportion of the school-age population, particularly those enrolled at the secondary school level. For students at this level, the difficult transitions of adolescence, combined with the challenge of learning to express thoughts, develop a personality, and, master academic content in a language they are still learning, can be overwhelming. The inability to communicate ideas and feelings confidently may result confusion, frustration, anger, and alienation. In addition, immigrant students must balance the value systems of their native culture, ever-present at home, with those of the dominant culture, which prevail at school.

Learning the rules and practices of a new school system is challenging for immigrant students and their parents. Devices such as parent information centers, translated school information material and documents, as well as close cooperation with parents and school, all making the situation much easier for the newcomers. There are also many projects which are designed especially to help immigrant students and their parents. One of them is AVID (Advance Via Individual Determination), initiated in San Diego, California. The program works to place under-represented students from linguistic and ethnic minority groups in rigorous academic classes while providing a system of support and advocacy, which includes explicit instruction in skills that are essential to academic success. AVID aims to prepare these students to perform well in high school and to pursue a college education. School staff also provide extensive personal and social support by communicating with the parents, counseling students with personal problems, helping students through the college selection and application process bringing college and university representatives to the school, and arranging visits to college and university campuses (Chang, 1990.)

In this chapter I have tried to reveal even a small view of the very complex and vast picture that at-risk matter is. Many researchers have put different ethnic groups in order according to the number of at-risk population. There is also many studies that concentrate on the factors that cause the some children to be at risk. This is, however, not enough. Much more research is needed, especially on the programs that have been developed to help this particular population. We need answers to questions like, do these programs really help at-risk children and in which ways these programs help them?

4 MEXICAN-AMERICAN STUDENTS

Because the majority of the attending students in SBK are Mexican-American by origin, I have chosen to describe briefly the background of the Mexican-Americans. By this means I hope to give a short overview picture of their history in the United States. This overview may also suggest some factors that place Mexican-American children at risk.

Immigration History and Patterns

The immigration history of Mexicans to the United States is an unusual one. Before the United States reached westward most of the southwestern areas were controlled by the Spanish and then later on by Mexicans. Today some Mexicans, especially in New Mexico, can trace their ancestry back many centuries (Dinnerstein and Reimers 1982:88.) After the contemporary border between the U.S. and Mexico was established in 1848, crossing it was relatively easy. According to Dinnerstein and Reimers, the border was inadequately patrolled until 1965 and this factor made it easy for Mexicans, especially Mexican agricultural workers, to enter the country illegally, rather than going trough the formal route by filling the forms and waiting for the residence permit (Dinnerstein and Reimers 1982:91.)

Before 1910 most of the Mexican migrants were temporary laborers to California and to the southwestern area (Texas, New Mexico, and Arizona.) Cheap labor was needed when the southwestern railroad was built in the beginning of the 1900s. Expansion of the cotton planting in Texas, Arizona, and California as well as the growth of irrigation of farmlands provided many jobs. The cheaper the labor the better -- and Mexicans provided it. Dinnerstein and Reimers (1982) state that

Mexicans made up more than 60 per cent of the common laborers on the railroad track gangs, in mines, picking fruits, and in packing plants. Later Mexican Revolution, population increase, booming economy with rising prices and low or even declining wages brought about the increasing movement from Central and Eastern Mexico toward North and across the border (Dinnerstein and Reimers 1982:90.)

In the 1930s depression hit the United States and as a consequence many Mexicans were encouraged – sometimes even forced – by local government officials to return to Mexico. Many of these Mexicans were citizens by birth according to the U.S. law, but still they were forced to leave. In spite of the threat of being sent back some stayed. They lived in horrible conditions: they had no furniture, and diseases and malnutrition was everyday life. Some managed to maintain their jobs but some did not and still stayed as unemployed in the hope of a better future (Dinnerstein and Reimers1989:91.) Even today the situation is not very good. In her essay *Caravans of Sorrow: Noncitizen Americans of the Southwest* Luisa Moreno (1996:121) how some workers told her they had to leave their shacks under heavy rain to find shelter under trees.

When World War II began and the United States joined, job opportunities opened in the cities for Mexicans too in for example, airplane plants, shipyards and in other war-related industries. This changed the profile of the contemporary Mexicans in the U.S.: they moved from the countryside to the cities (Dinnerstein and Reimers 1982:92.)

From 1942 to 1964 was the time of the Mexican Contract Laborer Program, the so called Bracero Program. This program was a way to help American agriculture. It was originally designed to provide agricultural workers during World War II to make up for the shortage of laborers in the United States. When most of the Mexicans moved into

American cities after better jobs, agriculture was left with a labor shortage. But the labor shortage continued in the US, and in 1948 the border was opened to several thousand undocumented Mexicans who wanted to work in the cotton fields of south Texas (Miller and Miller 1996:29-30.)

Family and parental background

Mexican-Americans, as all Chicanos (an American of Mexican origin,) are very family-oriented. According to Keefe and Padilla (1987:129), the nuclear family is the basic and most significant familial unit and this unit normally constitutes the household. Mexican-Americans have an extended family. This extended family includes close and not-so-close relatives, as well as the *compadres*, that are the godparents of a child. These *compadres* or *co-parents* have usually a very special link with the real, biological parents of the child (Keefe and Padilla 1987:130.) There have been assumptions that the Mexican- American extended family is declining because of acculturation, assimilation, and urbanization. But Keefe and Padilla think this is not true. They strongly believe that the Chicano family is not a declining institution and this is equally valid with the Mexican-Americans (Keefe and Padilla 1987:131, 144.) Vega's (1990) study implies that Hispanic families, including Mexican-American families, have remained much the same during the years. Ties to relatives are strong even over long distances. Also Vega confirms the vitality of the extended family system of Mexican-Americans (Vega 1990:1017-1018.)

However, the family type has changed with immigration and as generations change and it will continue to change in the future. According to the *Statistical Abstract of the United States 1997*, in 1995 the total number of Mexican families (legal) was 3,847,000, of which

2,745,000 were married couples. Female and male householders were minorities (female 19.9 per cent and male 8.7 per cent of the total) but their number shows a growing tendency (US Bureau for Census 1997:52.) The reason for this growing tendency, particularly in the case of female householders, are the many teen pregnancies, producing single parent families.

The value system of Mexicans and Anglos is very different. Vélez-Ibáñez (1996:84) has listed the main value systems of both ethnic groups in his book *Border Vision* (here table 3, p 25.) This division raised a question of whether we can generalize like this. Some of the characteristics listed are almost stereotypical.

Mexican Value System	Anglo Value System
Subjugation to nature	Mastery over nature
Present oriented	Future oriented
Immediate gratification	Deferred gratification
Complacent	Aggressive
Fatalistic	Non-fatalistic
Non-goal oriented	Goal-oriented
Non-success oriented	Success-oriented
Emotional	Rational
Dependent	Individualistic
Machismo [V-I's own addition]	Neuter [V-I's own addition]
Mexican value system	Anglo value system
Superstitious	Non superstitious
Traditional	Progressive
Spanish [V-I's own addition]	English [V-I's own addition

(Table 3: Mexican value system vs. Anglo value system. Adapted from Vélez-Ibáñez 1996:84)

We can see that according to these values two ethnic groups see the world much differently. The Mexican-American children are often caught in between these two systems. They are caught between

conflicting demands and expectations, while struggling to form an identity that successfully integrates the old and new features of the cultural reference group. Cultural change for many Mexican-American students can be very stressful.

The education level of Mexicans suggests clearly that their socioeconomic status is not very high. In 1994 5,781,000 Mexican persons were below the poverty level and there are 1,138,000 Mexican families living under the poverty level. To compare the situation to the whole population of the United States, Darity, Guilkey, and Winfrey (1996) states that 13 per cent live under the poverty line in 1990 (p. 413.) This is by all means not the whole picture. At the other end 17 per cent of the Mexican-Americans earn $50,000 or more per year (the highers reported level in the table.) The majority of the ethnic group falls nicely in between this gap of poverty and with only 6 per cent earning less than $5,000 and 21.9 per cent earning between $15,000-$24,999 (US Bureau of Census 1997:52.) When we compare the different Hispanic groups together Mexicans do not do very well. In 1994 only Puerto Ricans fell behind Mexicans with $20,929 median income per year to the Mexican $23,609 equivalent (US Bureau of Census 1997:52.) Since then the situation has changed. In 1996 the median income for Mexican-American was only $11,753 while Anglo-American's median income climbed up to $17,835 (US Bureau of Census 1997:53.)

Education of the parents of today's Mexican-American children vary a great deal. The percentage of the Mexican-American population with less than twelve years of school in addition to four years of college is decreasing. In 1970 it was 75.8 per cent among Mexicans, in 1980 62.4 per cent, in 1985 58.7 per cent, and in 1988 the number was 55.4 per cent (Schick and Renee ed. 1991:96.) As can be seen, more than half of the Mexican population in the United States do not complete high school, not to speak about entering college of any kind. These numbers are

very alarming. If the percentages have been this high from 1970 to 1988, what have they been earlier? Children need idols to look up to, but I fear these kinds of role models are hard to find among their own ethnic group. In the following section I will discuss more the situation of the Mexican-Americans in schools.

Mexican Americans in School

Many studies have documented the underachievement and drop out rates of Hispanic students in public schools. Different kinds of reasons have been given to explain the tendency among this particular ethnic group. For example, it has been widely documented that the academic achievement of Mexican-American students is linked to a number of sociocultural variables. Among the sociocultural variables associated with academic achievement are the educational and occupational attainment levels of parents, family income and composition, ethnic and language minority status, and the absence of learning materials in the home (e.g., Arias, 1986; Rumberger, 1987; Steinberg, Blinde, & Chan, 1984.)

Sosa (1990) has found that Hispanic students in general have not been served very well by the education system of the country. According to her, many students read two or even more grade levels below their normal grade placement. One reason seems to relate to proficiency in the English language. Sosa reports that only 27 per cent of Hispanic students achieving the adept reading proficiency level in English (Sosa, Making Education Work for Mexican Americans: Promsing Community.) In Texas, limited English proficiency (LEP) is a real problem in schools. According to Kindler (1995), the percentage of LEP migrant students is as high as 37.1 per cent. To compare the situation we can look at the Michigan and Kentucky equivalent figures, both of

which stay under 2 per cent (Kindler, Education of Migrant Students in the United States.)

Dropout rates for Hispanics have been bouncing up and down from 28 per cent to 44 per cent between 1972 and 1991. The peak seems to be in 1980 when 44.1 per cent of the Hispanic students dropped out of school. During the same year only 12.7 per cent of the Anglos and 23.5 per cent of African-American students dropped out. In 1991 the respective figures were 35.9 per cent for Mexicans, 10.7 per cent for Anglos, and 16.9 per cent for African-Americans (Chadwick and Heatan 1996:122.) As we can see, the difference is quite dramatic Indeed, several major reports document that Mexican-American students are far more likely to leave high school before graduation than the general population (Hirano-Nakanishi, 1986; National Council of La Raza, 1992; Valverde, 1987.)

Once again there is another side to the picture. Because Mexican-American children often learn English more quickly or are more familiar with the new cultural environment, they are needed to interpret and translate for their parents. Many families rely on their children to serve as interpreters of a new language and culture. As children become increasingly involved in the financial, legal, and social worries of the family, the traditional parent-child-relationship changes. Sometimes this leads to intra-familial problems and role conflicts that may cause difficulties in school (Szapocznik, Kurtines, & Hanna, 1979.)

Researchers have suggested that the cultural mismatch in the values of Mexican-American children and those required within the educational system was largely responsible for the difficulties Mexican-American children experienced in the classroom (Sue and Padilla 1986.) The general assumption seems to be that Mexican-American children lack

the necessary competencies, values, and personality characteristics to succeed in the cultural milieu of American schools. In an ethnographic study of Mexican-American elementary school students, Trueba (1983) describes a number of students who were experiencing serious problems adjusting to school. These children showed manifestations of maladjustment that included: frustration and sadness, fatigue, lack of concentration, aggression, loneliness, acting out, persistent and predictable stomach problems, and general anxiety.

If we are to understand the children who are stressed and show lower academic achievement, we will have to study them more. We must put ourselves into their position and really give a thought to what could be done to help them. I find that the schools and other social institutions can serve as significant environmental resources. Supportive teachers and the school environment can moderate the negative effects of stress on school adjustment. Alva (1991) found that minority students who chronically experience a number of uncontrollable and stressful events, such as discrimination or poverty, may develop feelings of helplessness that interfere with academic motivation and performance. Alva's opinion is that if these conditions persist, these children may come to believe that they cannot overcome failure.

Project Adalante was established at Kean College (New Jersey) to inspire Grade 6-12 Hispanic students learning English to work toward the long-term goals of high school graduation and college entry. Students are encouraged to remain in the program from the time they enter until they complete high school. The academic curriculum is thematically organized, based on whole language approach, and this is taught by teachers from the participating school districts. Three counselors from the school teach classes and meet students in individual and group counseling sessions. Further, the counselors establish an important link with the parents by organizing meetings

and activities to help them understand and encourage their children (Center for Applied Linguistics, 1994.)

Although the studies discussed above have identified a mass of demographic factors that predispose Mexican-American students towards academic failure, very little attention has been given to students who overcome a number of socioeconomic and cultural disadvantages to succeed academically. It seems that we know very little about academically successful students and what distinguishes them from their classmates who experience academic underachievement and failure. Why then, do some Mexican-American students do well while others fail, despite sharing similar socioeconomic and cultural backgrounds?

As I have tried to show in this chapter, the educational status of Mexican-American students is alarmingly low. Compared to their majority group peers, Mexican-American students lag far behind on a number of indicators of student academic success. Although the severity of academic underachievement is recognized by educators and policy makers, very little is known about the factors that influence and mediate this problem. To date, research in this area has centered around socioeconomic factors which contribute to academic underachievement. But the focus must be turned toward the factors that influence and mediate the academic underachievement and processes that influence the problem.

5 STARBASE KELLY

Starbase Kelly is a program located in urban southwestern area, in San Antonio, Texas, to be exact, that targets at-risk children from low socioeconomic and minority backgrounds. The program focuses on physics and aerodynamics. However, knowledge of these is not the main goal of the program. Among the activities through which physics and aerodynamics are taught are also found the elements that form the base for the program's goals: drug-demand reduction, as well as goal-setting, and motivating the children to stay in schools. In other words, the goal is to achieve an attitude change towards learning and taking responsibility over one's future in the participating students.

How It All Began?

The whole concept of Starbase began in 1989 in Michigan. It was founded by Barbara Koscak, a Michigan elementary school teacher, Brig Gen. David Arendts (Ret.), Commander of the 127th Fighter Wing at Selfridge Air National Guard (ANG) Base, Michigan, and Major Rico Racosky, an F-16 pilot and creator of *dreams + action = Reality*. They all had a common dream: to create a program which would respond to the needs of today's youth through hands-on science, math and drug reduction curricula, coupled with goal-setting skills.

The program came true with the help of a Kellog Foundation grant for establishing a pilot program at Selfridge, Michigan. After that the success of the program has gotten the attention of a few senators who have been active getting more attention to the program as well as funding for it. In the summer of 1992, senators Levin of Michigan and

Nunn of Georgia presented the STARBASE program to Congress for funding in the Department of Defense budget. The Bill was signed into a law by president Bush in October 1992 and additional funding was made available in 1993, 1994, and 1995. During this time individual Starbases have become self-sustaining (Starbase Kelly Youth Program - San Antonio's Youth Aiming High Into America's future - brochure.)

In 1994, Maj. Gen. John Closner identified Kelly Air Force Base (AFB), Texas as the first Air Force Reserve (AFRES) participant. SBK was fully staffed on February 2nd, 1995 and became operational with the arrival of the first class in February 7th. Since then SBK has functioned with the other Starbase facilities around the country.

There are 20 Starbase programs around the US, located in 15 states and Puerto Rico. Some of the programs operate at more than one site (for example, Starbase Kansas conducts classes at three different locations, though not at the same time), so there are actually 25 Starbase sites. All are funded by the US Department of Defense, although some also add private funding. Most are sponsored by the Air National Guard, some by the US Navy, and some (including SBK) by the Air Force Reserves. All of the programs are independent, and are not centrally controlled in any way other than the financing. All the programs use a similar curriculum (aviation, science, math, computer labs, *dreams + action = Reality*, rockets, etc.) although each program has developed its own specific course of instruction, which experiments they use, which computer programs, what type of rockets are used, and so on. Since the physical locations and Air Force operations are different for each site, the tours and interaction with the bases are also very different. Overall, the different programs have the same mission and purpose, but differing ways of accomplishing them (Starbase Kelly.)

How It All Works?

Starbase Kelly targets at-risk youth in grades four, five and six, and takes the students mainly from four area school districts - San Antonio, South San Antonio, Southwest, and Edgewood - which are in co-operation with SBK. Particular ethnicity of the students is not a requirement. Even though most of the attending students are Mexican-American by background, the program is open to all ethnicities (Anglo, African, and Native-Americans.) The majority of Mexican-Americans can be explained by the geographical location of SBK. It is located in San Antonio, Texas which is in the heartland of the so called Tex-Mex area.

All students in the program attend Starbase for five full days. There are two types of programs: the school year program where the attending students come to Starbase one day per week so the completion of the program will take five consecutive weeks. For the summer program the children will attend Monday through Friday for one week. It was encouraging to find that the homeroom teachers of the attending students were present the whole time, participating also in the activities like any of the children. At the end of the program the homeroom teachers will be given supplementary materials for reinforcing the skills learned at the program. SBK also offers week-long summer teacher workshops.

This program certainly raises many questions. One of the most probable questions is: what can be done in only five days that are divided into one day per one week? How much can you actually do in this short period of time? I do not have an answer. However, my thoughts are that the purpose of this program is to begin the learning process that will then be continued in the schools. As stated above, the homeroom

teachers are given materials to reinforce the skills learned during the five days of SBK.

During the five days at Starbase Kelly the students study careers, teamwork, drug demand reduction, aerodynamics, physics, aircraft components and instruments, goal setting, and self-esteem development using the *dreams + action = Reality* formula. This *dream + action = Reality (d + a = R)* formula emphasizes positive attitude, intuition, building one's self-esteem, and taking positive actions to reach the desired goal (Racosky, 1996.) It was developed by Rico Racosky and it can be easily attached to different kinds of programs with similar goals of motivating students and building up their self-esteem. This $d + a = R$ formula is a device that Racosky uses to base his attempt: the purpose of his book is to help people gain confidence in themselves and their abilities so that they can live full, rewarding lives and make positive contributions to humankind. The main idea behind the formula is that to achieve something you first dream about it and then you have to take positive actions to eventually reach your goal. The dreams have become reality.

One of the most important features of Starbase Kelly is the involvement of 433rd Airlift Wing (AFRES) and 149th Fighter Group (ANG) members, who instruct, assist, and act as positive role models. During the first day when the children come to SBK they do not go to the school building but stay in the bus and they are taken to see airplanes (F-16, C-5, and C-130) at the base and meet the pilots of the planes. The children get to go inside the planes and ask questions and watch F-16s take off.

A question of "propaganda" has raised its head in some states, in Texas as well. Starbase programs have been accused of trying to recruit new members for the US Air Force or the US Navy. SBK staff assures me that it simply is not true (Starbase Kelly.) They actively encourage kids

to look at possible career paths, and if they are interested in serving in the military, SBK provides information, just like they provide information to kids who want to be doctors or architects. But only a very small percentage of SBK students show any interest in military service. There is also the question why the US Air Force is involved in a program like this. We have to remember that the program is primarily sponsored by the Reserves and National Guard, who are local organizations that are part of their communities, as opposed to the active duty Air Force that recruits nationally and assigns people all over the world. For example, SBK are sponsored by the 433 Airlift Wing, an Air Force Reserve organization. The 433 AW is based at Kelly AFB in San Antonio, and draws all of its members from the population of San Antonio and the surrounding communities. So, a civil-military program such as SBK, gives the 433 AW a constructive role in its own community. It is very understandable that they hope this program will improve the quality of local education programs and at the same time provide positive public relations.

After this the real studying on the above-mentioned areas begin. During the five days of attendance the children work on different topics and learn things by doing hands-on experiments. One example of this is their learning of Newton's three laws of motion. After the children have studied a little of Sir Isaac Newton's background they will start to build a *"Newtonmobile."* The mobile constructs of one piece of 4 inch pine board cut from a "1X3", a 2 ½ inch rubber band, 3 # 102 nails, 6 inch string, and one large plastic straw cut in half. With this little simple device that looks like a kind of slingshot the students are able to compare the difference in distances when different kinds of masses are launched from the mobile. The children will also build a rocket from a ready made kit during the five days of attendance. The complete rocket is about 2-foot-tall with launch systems and parachutes. Before the

launch the students decorate the rockets the way they like and write messages to the aliens out in space. On the last day just before leaving SBK everybody goes outside and launches their rockets. They will fly approximately 150 feet into the air and then come down with a parachute. It is not surprising that the program motivates these students to be more interested in physics and mathematics when they go back to school (see Pre- and Post-test results chapter 7.)

In addition to all these hands-on activities, of which I gave only two examples, the students spend time in computer lab playing math-based computer games and using a flight simulator which they can try to master. Also, from the first day forward the students will study drug-demand reduction. They will try to define different terms (e.g., drug abuse, peer pressure, and consequences) that are part of drugs, by discussing them together with the teachers. Later a more detailed and serious discussion will be held in the class about the consequences of using and choosing not to use drugs and alcohol, and vise versa. The students will also learn different ways to say no if someone suggests drugs or drinking for them. Some possible ways to refuse are just saying plain "no thank you", giving a reason or excuse, walking away, and/or avoiding such situations.

Teamwork is learned in this program by doing the different hands-on activities together in small 3-4 person groups during the whole program. Teamwork is also talked about in the classroom. Teamwork is emphasized as an important method of going forward in your life. One will have to know how to work in a team in order to build a better future (especially in one's job opportunities.) In the classroom teamwork is especially practiced with specific exercises. One example is a Shuttle Breakdown Exercise. In this exercise the students are divided into 2-4 student teams that sit opposite each other on a large table with partition placed between them to prevent each from seeing what is on

the other team's side of the table. Each side will get duplicate sets of blocks. Then one team is assigned as *"Mission Control"* and the other team on the other side of the table as the *"Endeavor Crew"*. After this the students will hear a story about the Space Shuttle Endeavor in trouble. Now the Mission Control has to give instructions to the Endeavor Crew to get the problem solved. This means lots of communicating between the groups as the Endeavor Crew is trying to get the blocks (i.e., parts of the control panel) in exactly the same order as the Mission crew has set them.

Goal setting and self-esteem are other big components of the program and they are practiced through the *dreams + action = Reality* formula. The students get to make their own charts for their dreams, think how much they really want to achieve them, and to ponder what it takes to achieve the goal. The students will make so-called dream cards in the classroom on which they will write what they want to be. After this the Starbase Kelly staff tries to find someone of that profession to talk with individual students during one lunch break. These people will tell the children what it took to achieve the profession and talk about the work they are doing, as well as encouraging the children not to let go of their dreams (Curriculum outlines + student activities + material for teaching, Starbase Kelly, Student Flightlog Starbase Kelly.)

When the children come to Starbase Kelly they will take a pre-test, the so called *"Lift off"* (from now on referred only as *Lift Off*, see Appendix 1,) where they will have to answer questions that include something of all of the areas already handled above. It is a multiple-choice test and the students also have an alternative "I don't know" option. That will not give any points but it will not take any point off either. Then on the last day of attendance the same test will be given again but this time it is a post test called *"Landing"* (from now on referred only as *Landing*, see Appendix 2.) In the Landing are the same questions but there will

not be the "I don't know" option. The tests are not easy – especially the *Lift Off*. Most of the students do not have any idea about the physics and aerodynamics questions. They have been given a choice to guess the answers. Some may even think logically and find the right answer from the multiple-choices. This have not been studied anyway.

These tests have shown in a comparative analysis (Tammivuori 1998) that the program seems to have some kinds of effects on the attending students. According to the SBK the test results change quite dramatically. SBK reports that in the *Lift Off* the average score was 24 per cent, whereas in the *Landing* the average score was 70 per cent. The program seems to have a positive impact on the students but I will study that more closely in this research both the long term and short term result. All these areas are discussed in more detail later in this study.

6 MATERIAL

The purpose of this research study is to examine whether the selected at risk program achieves its goals in the short and long term. In other words, the study will examine whether the program has the desired effect on the attending children. This is done by analyzing the material which contains pre- and post-test results and a questionnaire sent to students who have attended SBK and their parents. The pre- and post-test results will be analyzed to find out the immediate effects of the program on the attending children. The analyzed questionnaire/survey has been conducted by SBK staff.

The research material consists of two different types of sources. There will be the pre- and post-test (*Lift Off* and *Landing*) results and also student and parent surveys. The material is also different in the scope of its nature. The pre and post test results are objective. Nothing else than the students own abilities has affected the test results and will show the achievement in a very objective way. The questionnaires, on the other hand, are subjective in nature. The students and parent may be deliberately lying or unconsciously answering the way the SBK staff wants: in other words, they know what the purpose of the survey is, so they give as positive a picture of themselves as possible even not true. Of course I cannot assure this. Now I will shortly describe the material in more detail.

Lift Off and Landing Results

The *Lift Off* and *Landing* tests picked for this study were randomly selected. I selected randomly four groups and their results from a stack of 25 groups (over 200 students.) In this way I had a sample total of 72 students. The reason for not taking all of them into this study was that

some were missing considerable amount of information on the test answers and results. The material did not indicate the students' grade level. Three of these groups had attended SBK in spring 1997 and one in fall 1996. Unfortunately, five student's tests papers had missing information and this way unusable. This means the tests had not complete test answers. This left me finally with 67 students with complete pre- and post-test results. I will analyze these selected 67 tests in more detail in the core section of this research. The tests are multiple-choice in nature and they include questions about physics, aerodynamics, drug demand reduction, teamwork, goal setting, and self-esteem. The tests are included in the appendix (see Appendix 1, and Appendix 2.)

The test questions are same in both test but in the *Lift Off* there is one choice more in the answer possibilities than in the *Landing*. In the *Lift Off* the students have a possibility to answer "I don't know" whereas in the *Landing* that particular choice has been taken out. This choice has been made so that in the *Lift Off* the students can choose the "I don't know" without getting any points taken or given. The *Landing* means to measure what the students have learned during the program, and this is the reason for taking out the "I don't know" choice.

Grading of the *Lift Off* and *Landing* results is very simple. Every right answer is one point gain whereas every wrong answer is one point loss. If the student chose "I don't know" option in the *Lift Off* she/he will not be punished for it. There will be no gain or losses in points. If every answer is correct it means 20 points which equals to 100; if the students have 15 correct answers it will equal to 75, and 10 correct answers equals to 50.

These *Lift Off* and *Landing* results will be measuring here the short-time effectiveness of the program. Analyzing the results will give an answer

suggesting whether the program achieves its goals in motivating the children to stay in schools.

Student and Parent Survey

SBK staff made a questionnaire for the former students and their parents about the program. This questionnaire's purpose is to find out the long-term effectiveness of the program. It answers questions like: Has it really achieved to motivate the kids to stay in schools? Are the students who attended the SBK program doing better in school/in physics and in math? What did the parents notice about their children during the program and now? The questionnaire is included in the appendix (see Appendix 3 and Appendix 4.) So the questionnaire was conducted to cover all the areas that are taught in SBK.

I am doing teamwork with SBK considering the survey. SBK staff made the questionnaire and handled all the mailing to the target students as well as mailing the returned questionnaires to me for analysis. My part is to pull together the information from the questionnaires and make an analysis based on them. The survey was sent to all students and their parents who has attended and completed the SBK program during its five-year existence and who could be located. There were 2131 surveys sent and 120 were returned by the post office as undeliverable. The returned questionnaires will be analyzed and the results will be studied to find out if the program achieved its goal in motivating the children to stay in schools and taking responsibility in their own learning and future in the long term aspect. But, it is important to remember that the results of these questionnaires are only based on the returned surveys and furthermore it must be remembered that the answers are subjective. In other words, the results represent only the returned surveys.

7 PRE- AND POST-TEST RESULTS

The *Lift Off* and *Landing* tests picked for this study were randomly selected. I just picked randomly four groups and their results from a stack of 25 groups (over 200 students.) In this way I had a sample of 72 students. The material I had did not indicate the grade level of these students. Two groups happened to came from the same elementary school, Sky Harbour E.S. and the other two came form H.B. Gonzales E.S. and Indian Creek E.S. Three of these groups had attended SBK in spring 1997 and one in fall 1996. Unfortunately, I was unable to use five students' tests because of missing information. This means that they had not completed their tests or that the test results were lacking either their *Lift Off* and/or *Landing* results. This left me with 67 students out of over 200 with complete pre- and post-test results.

Nature of the Tests

The children attending SBK take two exams during the program. The first one is a pre-test called *"Lift Off"* that will be taken the first day of SBK. The second test, the post-test called *"Landing"*, will be taken on the last day of SBK. Both tests are multiple choice in nature and both pre and post test have the same twenty questions on them (see Appendix 1, Appendix 2.) These questions handle the areas of Physics and aerodynamics, drug demand reduction, self-esteem, and teamwork. There are a few differences though: first, in the *Lift Off* all questions have an answer choice of "I don't know" where as in the *Landing* this alternative is not available and second, in the grading the "I don't know" alternative will not give or take any points off the total grade. A wrong answer will cause a one point loss.

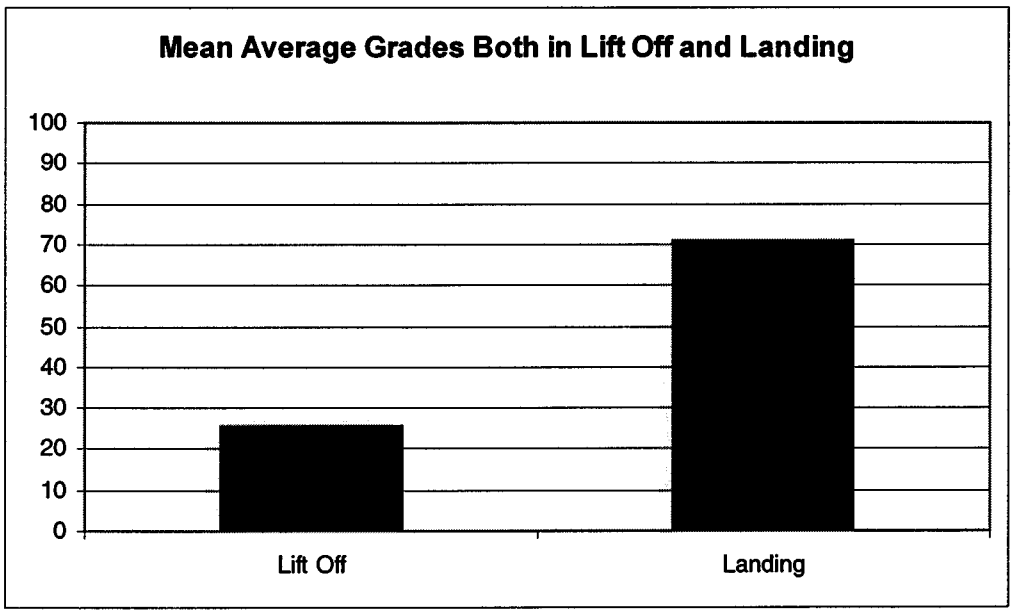
I criticize the tests for not having more questions on self-esteem and teamwork. Now the testing concentrates on physics and aerodynamics which counts ¾ the total amount of the test questions.

How the Results Were Analyzed?

The results of the *Lift Off* and *Landing* were analyzed question by question according to their areas of interest. I divided them in to the four categories mentioned above: 1) physics and aerodynamics, 2) drug demand reduction, 3) self-esteem, and 4) team work. In this division the biggest group formed was physics and aerodynamics, including 15 questions. The rest of the areas had together five questions (25 per cent of the total number of twenty) and they were divided as follows: drug demand reduction: two questions, self-esteem: one question, and teamwork: two questions. Each group of questions was analyzed, based on the right amount of correct answers in *Lift Off* and *Landing* and then looking at the difference. And after the comparison some conclusions can be drawn form the results.

Lift Off And Landing

When the average of both *Lift off* and *Landing* were counted the change was dramatic. The average grade of all 67 tests in *Lift Off* was 25 per cent while the average grade in *Landing* was 71 per cent. There was a dramatic change of 184 per cent (46 percentage units) for better in the grade averages (Figure 1, p. 44.)

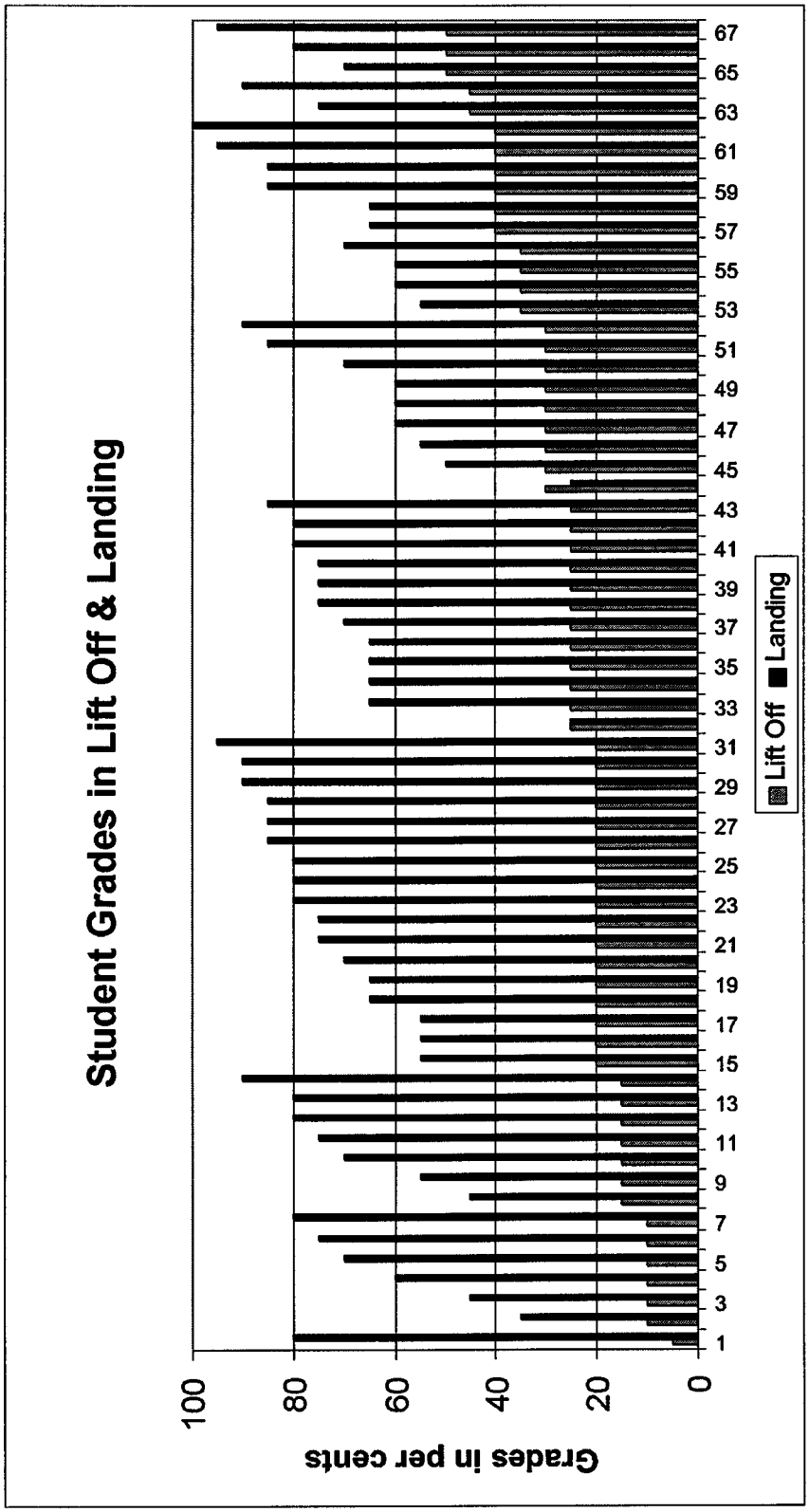


(Figure 1: Mean average grades both in Lift Off and in Landing)

A total of 65 students improved their grades. One student had the same grade for *Lift Off* and *Landing* and only one student had a better grade in *Lift Off* than in *Landing*. In almost every case the increase in the grades was more than 20 per cent. The only exceptions were the one student with no gain at all and the one with a loss in *Landing* grade. One student made an improvement or fifteen-fold between the tests. In number the most students gained between 25 to 60 percentage units. In other words students doubled, tripled, or improved their grade four-, five-, or even seven-fold. Individual achievement with their test results will be shown in the Figure 2 (p. 46.)

As we can see from these results, the students have dramatically improved their grades almost without exception. This certainly suggests something about the short term effectiveness of the program. The question remains, does the test really measure what they are designed to measure?

Almost everyone in this sample did improve their grades in the post test. It was expected in some measures. Of course children will learn new things. And I must remind that the *Lift Off* was not designed to measure the knowledge of these children in physics or in aerodynamics. So, it is expected that when one is taught about for example, aerodynamics, that one will also make some improvement in the knowledge after some time. The purpose of the tests, especially the post test, is to measure how well these children have been motivated to learn new things that have been taught them in quite different ways than in their schools. Even though the subject is not the easiest, these children will notice that when they really want to learn something/ want to gain a goal they can do it if they set their minds to it.



(Figure 2: Student grades in Lift Off and Landing)

I will next concentrate on analyzing the questions. The questions were divided into four groups according to the questions' subject. The groups are 1) teamwork, 2) self-esteem, 3) drug reduction, and 4) physics and aerodynamics. The order is not any particular one. However, I left the physics and aerodynamics questions to the end because they are not handled in such detailed maner as the other groups. The question numbers will not come in order because of this division. I will start with the groups 1, 2, and 3 and leave the questions on physics and aerodynamics (group 4) last.

Questions about Teamwork

Questions number seven and ten dealt with teamwork and its importance. The questions were formed as follows:

#7: Team working together must all be doing different things.

a. True
b. False
c. I don't know.

#10: According to many experts one of the most important abilities a person needs in the future workplace is to know how to work as the member of a team. For a team to work effectively and be a winning team:

a. Every team member must be highly intelligent.
b. Every team member must know how to communicate.
c. Every team member must know two languages.
d. Every team member must be athletically talented.
e. I don't know.

When I analyzed these two questions the tendency for improvement was apparent. The mean average of right answers on question number

seven in *Lift Off* were 39 per cent and 69 per cent in the *Landing*. There was 77 per cent (30 percentage unit) difference between the two tests and for better.

The individual achievements for better in question number seven was evident. Twenty-one students answered correctly the question both in *Lift Off* and in *Landing*. Altogether 25 students improved their grade with the question answering incorrectly in *Lift Off* but correctly in *Landing*. Very surprising was the high number of wrong answers in both tests: 16 students answered incorrectly in both *Lift Off* and *Landing*. Only five students had answered correctly in *Lift Off* but answered then incorrectly in *Landing*.

Question number ten was a bit more complicated in its form but the results were slightly better. Mean averages of the correct answers in this particular question in the case of both tests were 46 per cent in *Lift Off* and 85 per cent in *Landing*.

The number of students with correct answers in both tests was 29 where as almost the same number of students, 28, answered incorrectly in *Lift Off*, but then correctly in *Landing*. Only eight students did not achieve anything on this question. These eight students answered incorrectly in both tests. Two students lost their gain: they had correct answers in *Lift Off* but then they had answered incorrectly in *Landing*.

These results suggest that most of the students did learn something about the importance of teamwork during their five days in Starbase Kelly. The question still remains how well they will apply their knowledge in the real life, for example, when they go back to their respective schools. For some of these students teamwork may be quite a new conception. Learning what it means was one goal of the Starbase

Program. Teamwork exercises were done almost constantly in the class room. The intention was to learn through practice.

I have a strong feeling that the reason why some students did not adopt the practice or even the concept is that the background of these students prevented it somehow, either consciously or unconsciously. Many attending students in SBK come from neighborhoods where teamwork was not practiced. Gangs are everyday life of some of these children and outside these groups there is no trust in anyone else but in oneself. Everyone strives only to achieve his/her own goals and there is no room for helping or even encouraging others. Could it be that the parents' behavior have served as a role model to these children and in this way the negative and very reserved ideas have been planted into these children's minds? There is a strong need for positive role models and they are few in the Hispanic communities. The closer the positive role models are found to the communities, the easier it is to the children to follow the example inspired by these people. But only the existence of these role models may not be enough. These people should also be conscious of their position in the community and even outside of it. They should be prepared to show at least some interest to the situation. Especially in the case of Hispanic people where the problems are visible and very concrete. A kind, encouraging word to children in not much to asked.

Question about Self-esteem

The *Lift Off* and *Landing* had only one question on self-esteem, which was quite unexpected. I expected a couple more questions in this area because it seemed that raising the self-esteem of the attending children in Starbase Kelly was quite a central theme in the program.

Question number nine in the test was:
#9: When it comes to planning my future, the person(s) most responsible for my success is:

a. My parent(s)
b. My teacher(s)
c. My friend(s)
d. Me
e. I don't know.

The percentage of the correct answer in this particular question in both tests were: 36 per cent in *Lift Off* and 99 per cent in *Landing*. The difference between these results is altogether 175 per cent (63 percentage units.) These numbers suggest clearly that there is also big gain in individual achievement. Is this gain only temporary or a permanent one? This cannot be answered.

Twenty-four students answered correctly in both tests. As many as 42 students answered incorrectly in *Lift Off* but they corrected this "mistake" in the *Landing* by answering correctly. None of the students answered first correctly and then incorrectly and there was only one student who answered incorrectly in both tests.

Self-esteem is something that every individual should have. Or if they do not have strong self-esteem they should try to build it. In SBK self-esteem is practiced through the *dreams* + *action* = *Reality* formula developed by Racosky (1996.)

When children are in grades from four to six they are affected very much by their friends. They want to be able to do everything their friends are allowed to do, they want to have the same hobbies, they want to dress alike, etc. They do not realize how important their choices

may be for the future, for example., the case of drugs. Developing self-esteem and really making it clear to these students seems to be one of the main aspects of the SBK program. During the program the students will hear numerous times how important it is to graduate from high school in order to have a better future. And even graduation is not enough, but they must struggle on in the "jungle of life." If they do not strive forward in life they will most probably drop out or stay at the lowest level of society.

Questions about Drug Reduction

Among the twenty questions in the tests there were two questions concerning drug reduction. Questions numbered 14 and 17:

#14: If I do illegal drugs at any time:

a. I might crash my future.
b. I may ruin my *dreams + action = Reality* formula for success.
c. I could affect the health of any children I plan to have.
d. All of the above.
e. I don't know.

#17: Which is not a recommended way to say "no" to someone who offers you drugs or alcohol:

a. Ignore the person and walk away.
b. Politely say "No thank you" and walk away.
c. Say you have something else to do and leave.
d. Discuss with the person the bad effects of drugs and other things you've heard about drugs.
e. I don't know.

In question number 14 the percentage of correct answers in *Lift Off* was 31 per cent. The respective result in *Landing* was 40 per cent. I was surprised to see the results of this particular question. I had thought that because of the young age of these children they would have been easier affected. Apparently this assumption was wrong. I honestly expected higher percentage of correct answers in *Landing*. What comes to the individual achievement in this questions the results were the following. Fourteen students answered correctly in both *Lift Off* and *Landing*. The number of those who had first answered incorrectly and then correctly in *Landing* was 13. As many as 33 students answered incorrectly in both tests. Only four students had reversed their answers from correct in the pre test to incorrect in the *Landing*.

Question number 17 had much better results. The percentage of correct answers in *Lift Off* was 15 per cent where as in *Landing* it was 66 per cent. Here the difference is much more that in question number 14, altogether 340 per cent (51 percentage units.) Very impressive indeed.

Six students answered correctly in both tests. As many as 38 made a difference between their *Lift Off* and *Landing* (they had answered incorrectly in the pre test but then correctly in the post test.) Nineteen students answered incorrectly in both tests. No one answered first correctly and then incorrectly.

One question rose during the analyzing these questions: how can there be one correct answer? It is understandable that SBK staff is seeking for the answer the students are taught in the SBK classroom. When looking at these questions there could be many possible right answers. But now we are strictly looking at the key of right answers that SBK provided me. The goal of this study was not to analyze the tests even though there maybe should be a closer study made of the tests and their nature, and whether they measure the right things etc.

These two analyzed questions show clearly two facts about the children's knowledge and attitude toward drugs. Drugs are so much part of everyday life in the sense that these children see drugs, they are offered drugs, their parents may use drugs, or they may even use drugs themselves. I also assume that the dangers and effects of drugs have been discussed in many different occasions to these children. They seemed to know quite a lot about drugs in general but it seemed that most of the children still lacked the knowledge of the consequences of these harmful and dangerous substances. Even though the attending students of SBK receive practical instruction on drugs and their effects it seems that most of the information is pushed back as " I've heard this before, I don't need to know more." I can only assume that the environment surrounding these children most of the time is not very supportive to drug reduction attitudes.

But as we saw in the results of question number 17, that the children have knowledge or then they have learned during the program about the serious consequences of using drugs. When it comes to practical knowledge about drugs the students in SBK learn different ways to say "NO!" to drugs and how to handle situations where someone offers drugs. I found this kind of practice important. I must tell about my own experience when I encountered drugs for the first and so far the last time. At that time I was in San Antonio as an exchange student in 1991-1992. One day in school during the lunch break some one totally strange came to me and simply asked " Do you want to get high? I've got some stuff, if you want." I was amazed and startled but I simply said "No thank you" and walked away. I will probably never forget that. For some one who has lived in a society where drugs are not so visible or "popular" it was actually quite a shock. I knew about drugs and their effects but I had never dreamed of getting into a situation where some one actually offers me drugs. The question number 17 asks

the students to point which is not the "recommended" way to say "No" to some one offering you drugs. My experience shows what the SBK staff is trying to teach to the children: say no and walk away.

The following two tables (Table 4, p. 54, Table 5, p. 54) will show the number of answers both in numbers and in percentage in the types of change in answers between Lift Off and Landing (correct -> correct, incorrect -> incorrect, correct -> incorrect, incorrect -> correct) the students had given in Lift Off and in Landing.

Answer change types	Number of answers				
	Q#7	Q#9	Q#10	Q#14	Q#17
Correct -> correct	21	24	29	14	6
Incorrect -> incorrect	16	1	8	33	19
Correct -> incorrect	5	0	2	7	4
Incorrect -> correct	25	42	28	13	38
Total	67	67	67	67	67

(Table 4: Number of answers in each change type)

Answer change types	Number of answers in per cents				
	Q#7	Q#9	Q#10	Q#14	Q#17
Correct -> correct	31,3	35,8	43,3	20,9	9
Incorrect -> incorrect	23,9	1,5	11,9	49,3	28,4
Correct -> incorrect	7,5	0	3	10,4	6
Incorrect -> correct	37,3	62,7	41,8	19,4	56,7
Total	100	100	100	100	100

(Table 5: Number of answers in per cents in each change type)

These tables shows how students have answered the questions first in *Lift Off* and then in *Landing*. This table is a summary of results described above concerning only these five questions.

The two tables above describing the results in the given five questions do not leave much room for interpretation. The results suggest that some of the questions and the subject areas they cover have been familiar to the children before attending SBK and they have some kind of ideas of these subject (questions 7, 9, and 10.) In question number 14 nearly 50 per cent of the students had answered incorrectly both in *Lift Off* and in *Landing*. This could mean that the particular question left too much room for interpretation and that way was not well formed. However, it seems that even though some students have been familiar with some or all of the subject areas in these five questions there are still many students who are yet learning them.

Questions about Physics And Aerodynamics

The remaining questions (altogether 15) in the both tests concern physics and/or aerodynamics. I will not handle them question by question, as I did with the questions covering the other areas (drug demand reduction, self-esteem, and teamwork.)

In tables 6 (p. 57) and 7 (p.57) I have summarized the results of these 15 questions on physics and aerodynamics. I will analyze some of the questions in more detail using the summaries and the questions in the process. Based on these information I will draw conclusions and discuss them.

The questions on physics and aerodynamics varies a lot. Some of the questions asks more detailed questions on airplane structure and operation while some cover basic physics. I liked that the questions were mixed with the other areas (teamwork, self-esteem, and drug reduction) so that they appeared in random order and not one subject area after another.

Almost every question (15) under the physics and aerodynamics heading showed the desired results. In 13 questions the majority of the students had made the change from incorrect in *Lift Off* to correct in *Landing*. In two questions the case was different. In question 6 the majority of the students answered incorrectly both in *Lift Off* and in *Landing*. This can suggest that the question should have been formed more carefully. Or that the answer choices were too similar. In question 18 the case was vise versa: 53.7 per cent of the students had answered correctly in both tests. This result tells that the students really knew what the answer was even before attending SBK.

It was expected that the results in *Landing* were a lot better that in *Lift Off*. This expectation was only natural. When the children come to SBK they have not been taught aerodynamics in school. The question is, why *Lift Off* even has the questions on physics and aerodynamics if it is not expected that the students know these areas? This way the difference in grades between *Lift Off* and *Landing* rises so high. And any evaluations or results about the program based only on the *Lift Off* and *Landing* is not statistically valid, but they still allows to make some conclusions.

Answer change types	Number of answers																			
	Q#1	Q#2	Q#3	Q#4	Q#5	Q#6	Q#8	Q#11	Q#12	Q#13	Q#15	Q#16	Q#18	Q#19	Q#20
Correct -> correct	8	6	7	13	5	3	3	9	17	4	17	3	36	15	17
Incorrect -> incorrect	22	12	24	12	15	39	13	17	16	7	17	16	2	9	10
Correct -> incorrect	1	1	5	2	4	9	1	4	11	2	10	0	4	2	7
Incorrect -> correct	36	48	31	40	43	16	50	37	23	54	23	48	25	41	33
Total	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67

(Table 6. Number of answers in each change type in questions about physics and aerodynamics.)

Answer change types	Number of answers in percentages														
	Q#1	Q#2	Q#3	Q#4	Q#5	Q#6	Q28	Q#11	Q#12	Q#13	Q#15	Q#16	Q#18	Q#19	Q#20
Correct -> correct	11,9	9	10,4	19,4	7,5	4,5	4,4	13,4	25,4	6	25,4	4,5	53,7	22,4	25,4
Incorrect -> incorrect	32,8	17,9	35,8	17,9	22,4	58,2	19,4	25,4	23,9	10,4	25,4	23,9	3	25,4	14,9
Correct -> incorrect	1,5	1,5	7,5	3	6	13,4	1,5	6	16,4	3	14,9	0	6	3	10,4
Incorrect -> correct	53,7	71,6	46,3	59,7	64,2	23,9	74,6	55,2	34,3	80,6	34,3	71,6	37,1	61,2	49,3
Total	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100

(Table 7. Number of answers in each change type (in per cents) in questions in physics and aerodynamics.)

As we have seen in this chapter there are changes, some even dramatic, in the differences of the *Lift Off* and *Landing* grades. Even though some of the changes are dramatic they are very positively so. But as I already suggested earlier the big number of physics and aerodynamics questions (15 out of 20) and the fact that the children do not know very little if anything about this area when taking *Lift Off*, maybe the cause of the big positive changes in the test grades.

These results have also shown that the children are capable of learning difficult things in very short period if the learning process is fun and motivating. SBK has succeeded to raise an interest in the attending children to the subject matters taught at the program but does it really show anything about the effectiveness of the program in short term? Even though the children are motivated while in SBK, does it mean that this interest to school and learning remains. We can only speculate and still there would be no definite answer without a closer study of the children back in their respective schools.

8 SURVEY RESULTS

In this chapter, the student and parent surveys are analyzed in detail. The idea of the survey was to find out what the children who had attended SBK and their parents think now. Especially, have the ideas of the students' changed since they left the program? The survey was conducted in San Antonio, Texas, U.S.A. by Starbase Kelly. My job was to analyze them and draw interpretative conclusions. Louise Cruz (Texas Certified Teacher, Career Guidance Coordinator, SBK) was the one primarily responsible for creating the survey instrument. Ron Jackson (Director, SBK) and Heather Neel (Texas Certified Teacher, Career Guidance Coordinator, SBK) both read over it and gave input and approval.

Some Facts

SBK sent altogether 2,131 surveys to its former students and their parents (one student survey and one parent survey per family.) The surveys were mailed out to students who had attended the program during the years 1995, 1996, 1997, and 1998. The total number of surveys mailed out according to the participation years follows:

Year of attendance	Number of surveys sent
1995	495
1996	517
1997	556
1998	599

(Table 8: Number of surveys sent per attendance year)

All the sent surveys covered seventeen zip code areas in San Antonio area. The Post Office returned 263 surveys as "Not Deliverable As Addressed" (NDAA.) This leaves the total number of surveys potentially delivered to 1,868. There are some explainable reason for the returned NDAA surveys. In 1996, Springview Apartments, a public housing project, was torn down and replaced with one- and two-family dwellings. Many of those displaced left no forwarding address. In 1996, many families living in Section 8 housing were relocated into apartments. Many of those displaced left no forwarding address. In October of 1998, a massive flood destroyed or severely damaged many of the homes in East San Antonio. Many of those displaced left no forwarding address.

Year of attendance	Number of surveys returned as NDAA
1995	95
1996	43
1997	99
1998	24

(Table 9: Number of surveys returned as NDAA per attendance year)

The total number of surveys returned to SBK was unfortunately as low as 120, i.e., 6 per cent of the total 1868 potentially delivered surveys.

The number of the returned surveys according to the year of attendance is presented in the next table.

Year of attendance	Number of surveys returned to SBK
1995	12
1996	33
1997	30
1998	41

(Table 10: Number of surveys returned to SBK per attendance year)

The low number of returned surveys will not give any statistical importance when it comes to any conclusions drawn from the data. However, I am able to study the returned surveys and get an idea of the attitudes toward the SBK program and if the children who attended the program have changed their way of thinking in some areas covered in the survey because of the impact of the program or then later after attending SBK (see Appendix 3.)

Starbase Kelly Student Survey

These surveys were marked with a color code before they were sent out. There were four colors (pink, orange, green, and yellow) and each one indicating a particular year of attendance in SBK. These colors were meant to help the sorting out when the surveys were returned. Here are the colors and the years they indicated: pink - 1995, orange - 1996, green - 1997, and yellow 1998. After receiving the surveys I numbered each year starting from one, in case I needed to refer to any of them. If any student survey is referred it will be marked from now on as SS1:1998 (Student survey numbered one in year 1998.)

The survey (see Appendix 3) was divided into four main sections with a main heading. *"Did Starbase Kelly help you to:..."* heading had altogether sixteen more detailed questions. This section also started the whole survey. It deals with the more abstract matters the children learnt in SBK like drug reduction, about gangs, self-esteem, teamwork, problem solving, and goal setting among others. The next heading was *"Think about the Starbase Kelly Team, the Air Force personnel, and the Career Guides you met. Did they:..."* This particular section (six questions) concentrated only on the personnel and the students' experience about them. The third section was headed *"Before you attended Starbase Kelly, did you:..."* In the six more detailed questions the survey tries to form a picture what the attending students thought about math and science and how they managed in these two subjects. This sections also questions about goal setting and thinking about future career choices. The following section headed *"Now, do you:..."* asks the same six questions but now from the perspective of today. The student survey is ended with two separate individual questions one asking for the current goal after high school. The second one asked the students to tell if something exciting or unusual had happened to them since they had attended SBK.

Analysis

Most of the student surveys were filled out completely. There were a few surveys in which some individual questions were left blank and in five surveys (SS9:1995, SS2:1998, SS3:1998, SS32:1998, and SS40:1998) a whole page of the survey was left blank, either accidentally or on purpose. If the numbers do not match the group's total number it means that there has been individual questions that have not been filled and because of that have been left out of the tables.

If we first look at the sixteen questions under the first heading the result is quite one-way directed. In each year the survey covers there is little difference in the answers. The majority had answered "Yes" to every question. Some questions seemed to cause more variation in the answers than others. All answers concerning the sixteen first questions have been listed in table number 11 (p. 66.)

According to the surveys the children had learned to achieve and set goals while in the program. Only four students had answered "No" and the number of those who were uncertain about this was as low as nine out of all 120 surveys. Making choices based on one's principles, values, and goals, as well as thinking about future career choices and taking responsibility for one's choices seemed to be an area where the majority of the students agreed that they got valuable help from SBK. These questions are numbered 2, 3, and 4. The next three individual questions dealt with drugs, gangs, and teen pregnancy. Here the consensus of opinion was as clear as possible. All of the students had chosen to say "NO" to all of these things (the question formed: *Did Starbase Kelly help you to choose to say no to drugs. ..... to gangs, ...to teen pregnancy*). The unanimous result definitely means that SBK has had a very positive and, even more so, very effective impact on the attending students concerning these areas. The answers to the eighth question are almost as unanimous to the three questions before it. This particular question asks about whether the program helped to choose to graduate from high school. One student answered "No" and two were not sure and answered "Don't know". All others were ready to reach for the goal with determination. This is another area where SBK has succeeded very well. All the teaching about the importance of education for the future of these children has obviously not been forgotten. Teamwork seemed to be also quite a clear matter and the students had understood it too. The answers were divided pretty clearly again with little difference between the year groups. In the year 1995 the results were 12/0/0

(Yes/No/Don't know), in 1996 32/1/1, in 1997 27/1/2, and in 1998 38/3/1. As you can see there is no much difference in the opinions in this matter either. As in the question about teamwork the question concerning good communication skills students were very unanimous in their answers. Here too there were no dramatic changes to report.

From here forward in this group of questions the answers seem to divide more than in the previous questions. There is nothing dramatic to report here either but the change is clearly visible, based on the results. Questions 11 and 12 dealt with developing, and using problem-solving skills and solving the problems. In question number 11 altogether 95 students answered "Yes," meaning that they felt the program had helped in using good problem-solving skills, six students answered "No" feeling that the program had not helped, and 17 did not know. In question number 12 the ratio was 101/3/13, which is more varied than in any of the questions described above. The higher amount of "I don't know" answers means that the students are not sure about this particular matter and how to deal with it. Maybe it would need some improvement in the teaching in the SBK classroom.

In the same category of more varied answers belong the four following questions from 13 to 16. These questions go hand-in-hand and in pairs 13 and 14 belonging together and 15 and 16 being a pair. Here again most of the students had answered "Yes" to these questions. But for some it seemed to be either clear that the program did not help in finding the understanding of everyday use of math and science. Some of the students also were not more interested in science and math in school after attending the program. Of course, we must understand that the students cannot learn everything perfectly during the short period of time in the program and there are more important goals than getting all the children enthusiastic about mathematics and physics.

(Table 11. Did Starbase Kelly help you to...?)

Did Starbase Kelly help you to.....?	1995			1996			1997			1998		
	YES	NO	D/S	YES	NO	D/S	YES	NO	D/S	YES	NO	D/S
1. Set and achieve goals?	10	1	1	32	1	1	26	1	3	38	1	4
2.. Make choices based on your principles, val...	10	0	2	32	1	1	25	1	4	37	1	5
3. Take responsibility for the choices you make?	11	0	1	31	1	2	26	2	2	42	1	0
4. Think about future career choices?	11	0	1	32	2	0	26	1	3	41	0	2
5. Choose to say no to drugs?	12	0	0	34	0	0	30	0	0	41	1	0
6.Choose to say no to gangs?	12	0	0	34	0	0	30	0	0	42	0	0
7. Choose to say no to teen pregnancy?	11	1	0	32	0	0	29	1	0	42	0	0
8. choose to graduate from high school?	12	0	0	33	1	0	30	0	0	40	0	2
9. Understand the importance of teamwork?	12	0	0	32	1	1	27	1	2	38	3	1
10. Understand the importance of developing ...	12	0	0	33	0	1	25	1	4	38	2	2
11. Develop and use good problem solving ...	9	2	1	30	0	4	24	1	5	32	3	7
12. Look for win/win solutions for problems?	8	0	4	29	0	4	27	1	2	37	2	3
13. Understand how science is used in every day...	10	2	0	26	5	3	24	2	4	32	3	8
14. Be more interested in science in school?	9	1	2	25	5	4	23	4	3	35	5	4
15.Understnad how math is used in every day...	10	1	1	27	4	3	27	0	3	38	3	2
16. Be more interested in math in school?	8	2	2	20	8	6	24	4	2	33	7	3

The second bigger heading in the student survey was "Think about the Starbase Kelly Team, the Air Force personnel, and the Career Guides you met. Did they:..." (table 12, p. 68.) In this section there are six more detailed questions trying to map the thoughts of the students in the staff on the whole. The first of these questions, numbered 17, asks whether the staff was knowledgeable and almost all students thought so. One thought they were not, and seven students did not know. Question number 18 asked if the staff served as a good role model. Here too the result was positive, 103/6/9. The next two questions were even more positive in their results. The students thought that they were treated with respect and that the staff helped them to learn. The staff's participation in encouraging to set and achieve goals can also be considered successful based on the results, as well as helping the students understand the importance of self-esteem. This section on the whole suggests clearly that the SBK staff and cooperating partners, the Air Force personnel and the variety of Career Guides, have succeeded well in creating a working staff group. Based on the children's answers in the survey this group of people working in the program are really dedicated to their work and it can be seen in the knowledge of their work and also in the attitudes towards the children and their situation. The detailed numbers of answers in these questions are presented in table 12 (p. 68.)

(Table 12. think about the Starbase Kelly Team and the Air Force personnel, did they...?)

Think about the Starbase Kelly Team, the Air Force personnel and the Career Guides you met. Did they...												
	1995			1996			1997			1998		
	YES	NO	D/S	YES	NO	D/S	YES	NO	D/S	YES	NO	D/S
17. Know a lot about what they were teaching you?	12	0	0	31	1	2	26	0	4	41	0	1
18. Serve as good role models for you?	10	1	1	31	1	2	28	1	1	34	3	5
19. Treat you with respect?	12	0	0	34	0	0	29	1	0	42	0	0
20. Help you learn?	12	0	0	33	0	1	30	0	0	43	0	0
21. Encourage you to set and achieve goals?	12	0	0	31	0	3	28	0	2	41	0	1
22. Help you feel good about yourself?	10	0	2	29	1	3	28	1	1	41	1	1

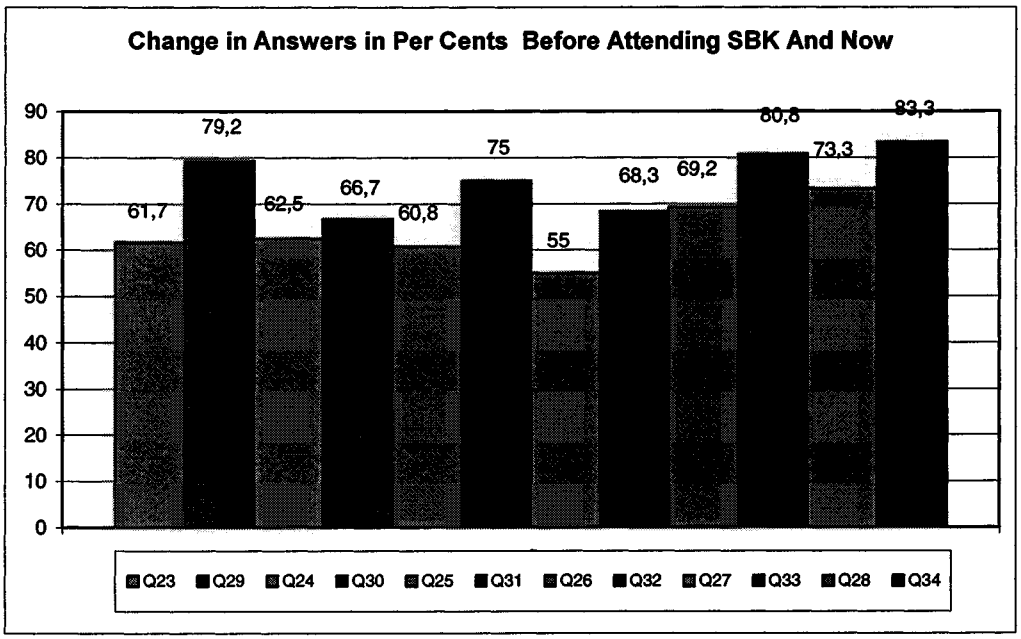
The third heading in the survey dealt with matters before attending the program. There are six questions under the heading "Before you attended SBK, did you:..." These ask the students how they did in math and science before coming to SBK and what kind of grades they got. Question numbered 23 asks whether the students made good grades in science, and a surprisingly large amount declared that they indeed did get good grades. The ratios were the following year by year 10/0/2 in 1995, 22/1/11 in 1996, 15/4/11 in 1997, and 27/4/11 in 1998. The next question asked the same thing about math and the results were almost identical to question number 23. However, even if the children did make good grades the surveys suggest that not that many of them liked science or math. Whereas 73 students told that they liked science, 30 students announced the opposite and 17 students answered that they liked science sometimes. With math the numbers were: 66 liked, 28 did not like, and 25 liked it sometimes. Table 13 (p. 70) will give detailed information on answers in these six questions.

Setting goals seemed to be quite clear and something that was practiced. There was, however, a larger number of "No" and "Sometimes" answers in surveys that were filled by students who had attended the program in years 1997 and in 1998. Question number 26 also was quite clear in its results. It asked whether the children thought what they might do when they grew up. According to the results many did know what they were going to do when they grew up.

(Table 13. Before you attended Starbase Kelly, did you...?)

Before you attended Starbase Kelly, did you...	1995			1996			1997			1998		
	YES	NO	D/S	YES	NO	D/S	YES	NO	D/S	YES	NO	D/S
23. Make good grades in science?	10	0	2	22	1	11	15	4	11	27	4	11
24. Make good grades in math?	10	1	1	22	3	9	16	3	11	27	5	11
25. Like science?	7	4	2	21	5	8	19	10	1	26	11	6
26. Like math?	9	2	1	20	8	6	12	10	8	25	8	10
27. Set goals for yourself?	10	1	1	26	2	6	19	6	5	28	8	7
28. Think about what you might...	10	0	2	26	2	6	21	3	6	31	6	6

The final heading which had more detailed questions under it consisted the same question that the previous heading ("Before you attended Starbase Kelly, did you...?) but this time from the perspective of "Now." A quick glance at all results gives a picture of improvement in all areas. Growing numbers of students reported that they either liked science and math better and achieved better grades in both subjects. For the detailed results comparing the former and the following, tables are the best sources (Figure 3, p. 71, Table 14, p 72.)



(Figure 3: Change in answers in per cents before attending SBK and now.)

In this figure the question numbers are located under the columns, for example, Q23 is question 23. The lighter shaded columns describe the answers to the questions under the heading " Before attending SBK, did you..." while the darker shaded columns indicate the same questions but now under the heading " Now, do you..."

(Table 14. Now, do you...?)

Now, do you...	1995			1996			1997			1998		
	YES	NO	D/S	YES	NO	D/S	YES	NO	D/S	YES	NO	D/S
29. Make good grades in science?	7	0	4	28	0	6	26	0	4	34	1	6
30. Make good grades in math?	8	1	2	27	0	7	19	1	10	26	4	12
31. Like science?	8	3	0	27	2	5	25	2	3	30	4	8
32. Like math?	9	1	1	23	5	6	19	2	9	31	4	7
33. Set goals for yourself	10	0	0	29	0	5	24	0	6	34	0	7
34. Think about what you might do when...	9	0	1	30	1	3	25	1	4	36	1	4

The second last question in the student survey dealt with the future plans after graduating from high school. The students were given five alternatives to choose from: 1) get a job, 2) attend a technical/trade school, 3) attend college, 4) enter the military service, and 5) other. In all year-groups the college gathered more numbers as a future goal after high school than any other alternative. Entering the job market was the second popular. After these two come military service and technical/trade schools in almost the same numbers. A few had chosen the alternative "other" but had not stated what that might be. One student had added an alternative to the list saying "I don't know." Some students had chosen more than one alternative usually two. I have collected all the answers to table 15 (p. 73)and to figure 4 (p. 74) to give a clearer picture of the answers. In this table I have included also the second alternatives, some had stated, in equal position with the others.

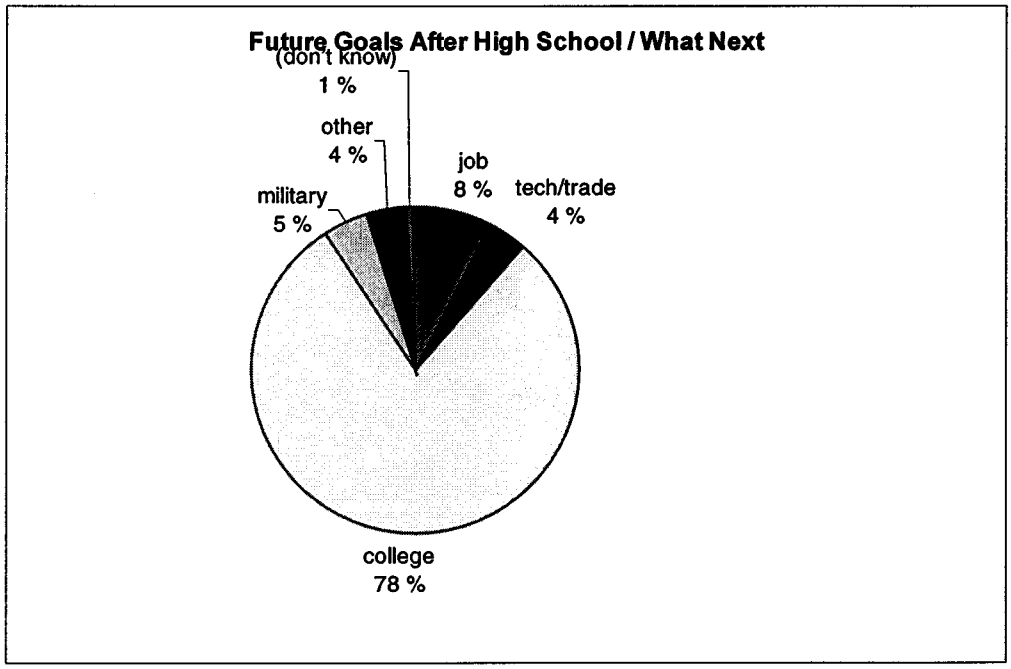
What next...				
	1995	1996	1997	1998
Job	2	2	2	4
Tech/trade		1	4	
College	10	27	21	34
Military	1	2	2	1
Other		3	1	1
(don't know)		1		

(Table 15: What next)

We might ask why the numbers in this particular question are the way they are. Most of the students seem to have chosen to continue to

college. Could it be because they have realized or that at least they are aware of education's importance in getting forward in the future.

So, this table indicates quite clearly that many of these students have set their minds on college. However, this survey does not examine whether their intentions are genuine. Some of the answers may have been just filled out indifferently to get the work done.



(Figure 4: Future goals after high school/What next.)

Student Comments

The last question in the survey asks the students to tell if something exciting has happened to them since they left the program. I was surprised that not that many students answered this question. From the number of surveys analyzed (120) only 26.7 per cent answered. Many students wrote about the program itself and what had been memorable about it. I wanted to include some of the comments the students wrote

because they show some of the efforts they have taken to stay in school and to keep a positive attitude toward it.

"Yes, I am Vice President in NJHS [National Junior Honor Society] at Dwight Middle School." SS1995:2

"Since I wanted to be a singer I formed a singing group and there are four people in it..." SS1995:3

"...got into band and was in the Spurs Youth League Basketball Games. Now that I'm in 7th grade I'm in volleyball, basketball, and I'm still playing in the Shepard Patriots Band." SS1996:4

"...I got in extra curricular programs..... I have been in PREP for now two years and this summer is going to be my third..."SS1996:7

"...I'm in all G.T. classes (gifted and talented)...,I'm an A student..." SS1996:11

"Since I went to Starbase Kelly I was honored to be joined into National Junior Honor Society (NJHS.)" SS1996:13

"Yes. I attended St Phillip's College on June '98 'til July 29,1998 for the Pre-Freshmen Engineering course. I enjoyed it very much. I earned a credit. Now, this coming summer I have the opportunity to attend again..." SS1996:23

"Yes I have joined fencing, I go to practice and tournaments. I have won medals. I have even came out in U.S.A. Today [sic]. I will also be coming out in the Olympian magazine..." SS1996:26

"I entered in sports and have fun and hope to be in the woman's basketball league. My grades have gone up and I got to put in honor classes in middle school." SS1996:29

"I make good grades now." SS1997:11

"I have become a member of a program (CIS) at my school McAuliffe Middle School. In this program I learn about different colleges and how to apply to them and their scholarships.... It's a Pre-Freshmen Engineering program. I attended it last summer...I will also start Saturday classes in February..." SS1997:17

"Yes! I have gone to the 6th grade and I am in Band. I am playing the clarinet." SS1998:17

"My report card grades went up to 95s - 100s in the first grading period..." SS1998:21

"I learn more there than in school." SS1998:35

Overall, students agreed that SBK had a positive impact in the science and math domain. Approximately 73.2 per cent of the respondents agreed that Starbase Kelly helped them to be more interested in science and math and therefore have positive impact on the grades. Over 90 per cent of the students agreed with statements concerning the positive effects of SBK in the areas of teamwork and communication. And finally 85.3 per cent of the students agreed that they had learned to set goals and the importance of goal setting.

The students answered six items describing the staff at the SBK. The questions asked among other things, whether the staff were knowledgeable, were good role models, treated students with respect and helped them learn. The students overwhelmingly agreed with all items (Questions 17, 18, 19, 20, 21, 22: 91.7 per cent, 85.8 per cent, 97.5 per cent, 98.3 per cent, 93.3 per cent, 90 per cent.)

The participants were asked to respond to nine items concerning self perceptions of their abilities before and after attending SBK. These items were concerned with the target areas of the camp: science and math, teamwork, goal setting, and thinking future career choices. For all six item (questions 23/29, 24/30, 25/31, 26/32, 27/33, 28/34,) the students rated their abilities significantly higher following the attendance in SBK.

Starbase Kelly Parent Surveys

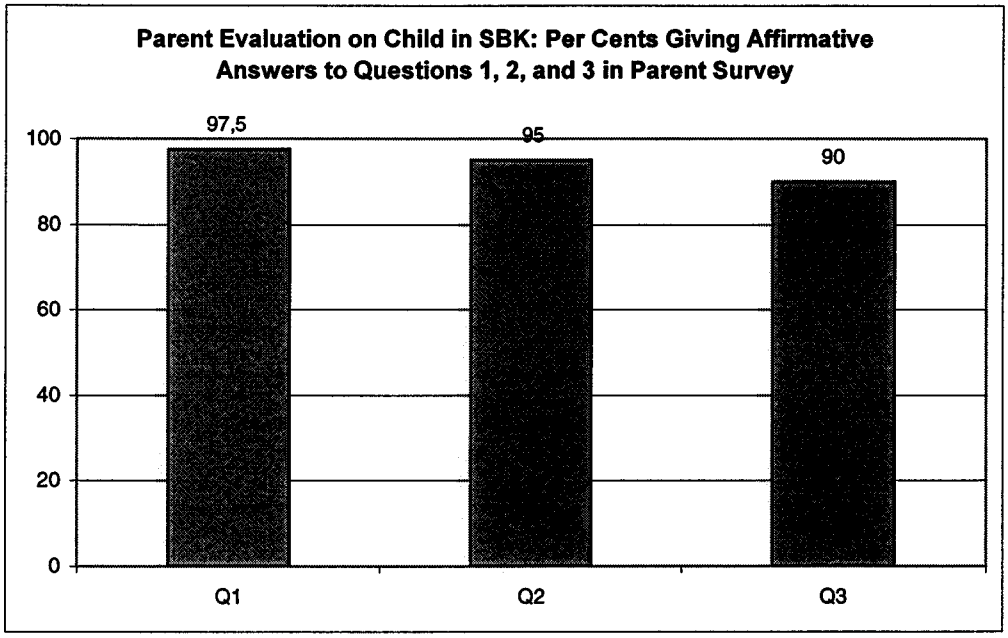
The statistical value of the parent surveys is practically non-existent. There are a few very obvious cases where the children have filled out also the parent survey (e.g., PS1995:1, PS 1996:19). There was no way of controlling who filled out the parent surveys. A space for a parent's signature would have been one improvement but even that would have not guaranteed that a parent would have filled out the survey. There were five parent surveys that were signed by the parent (PS1996:9, PS1996:25, PS1996:30, PS1998:18, PS1998:26.) In spite of this I will draw conclusions of the filled surveys but it must be remembered that actually they do not have any statistical validity. However, they can suggest a variety of things.

The parent survey consists of three parts. They are each under different heading separating different subject areas from each other. The headings are called "Did your child:...", "After your child attended Starbase Kelly, did you notice any of the following changes?," and "Any other comments" (see Appendix 4) which has space for the parent's own comments. Altogether there are 11 more detailed questions plus the comments part. I will handle all three sections separately.

The first three questions are generally about SBK concerning such matters as, did their child enjoy being at SBK, did he/she learn a lot there, and did he/she speak well of the adults at SBK. Basically all the parents in each year group agreed with all of the three questions. There were only a few exceptions. One parent was not sure about if the child had enjoyed his/her stay at the program (PS1995:10.) No other exceptions appeared in question number 1 in the parent survey. As to what the child learned in the program, a few more were unsure about the matter and one parent even stated that their child had not learned a lot at SBK (PS1998:9.) The majority of the parents also thought that the children did speak well of the staff (Table 16, p. 79, Figure 5, p. 80.) Here again were few exceptions.

(Table 16. Did your child...?)

Did your child...	1995			1996			1997			1998		
	YES	NO	D/S	YES	NO	D/S	YES	NO	D/S	YES	NO	D/S
1.Enjoy being at Starbase Kelly?	11	0	1	33	0	0	29	0	0	44	0	0
2. Learn a lot at Starbase Kelly?	12	0	0	32	0	1	28	0	1	42	1	1
3. Speak well of the adults at Starbase	10	0	2	30	0	3	29	0	0	39	2	3



(Figure 5: Parent evaluation on children in SBK: per cents giving affirmative asnwers to quieston 1,2, and 3 in parent survey.)

The following eight questions numbered from 4 to 11 were under the heading "After your child attended SBK, did you notice any of the following changes." Twelve parents found that the attitudes of their children had not changed for better. Also 12 parents were not sure about the change. The rest were positive about change for the better attitude, which is very encouraging result. Parents also thought that overall, their children were more interested in science (question 5: 92/13/12) and math (question 7: 88/22/6.) According to the parents the grades had gone up in both subjects (question 6: 90/7/7 and question 8: 90/17/9.) The parents also saw that their children thought more about the future career choices than before attending the program. The two last questions concerning setting and achieving goals and the child having better problem solving skills gave very good results. Table 17 (p. 82) gives detailed information on the answers to these 8 questions.

The survey results described in table 16 (p. 79) and figure 5 (p. 80) speak for themselves. The parents thought definitely that their children had

enjoyed the program as well as learned a lot while there. This suggests clearly that the parent's opinion of the program based on their children's experiences was extremely positive. The parent survey does not really ask the parents' own opinion about the SBK program. The space for comments was the only possibility for a parent to state his/her own opinion and unfortunately very few used this possibility. In a way this lack in the parent survey is understandable. The purpose of the survey was to find out whether the children who had attended SBK had changed or showed any improvement in school, in attitude towards it.

(Table 17. After your child attended Starbase Kelly, did you notice any of the following changes?)

After your child attended Starbase Kelly, did you notice any of the following changes?	1995			1996			1997			1998		
	YES	NO	D/S	YES	NO	D/S	YES	NO	D/S	YES	NO	D/S
4. Better attitude in school.	9	3	0	26	3	3	24	2	3	34	4	5
5. Greater interest in science.	8	3	1	25	4	4	22	2	5	37	4	2
6. Better grades in science.	10	2	0	30	1	1	25	2	1	35	2	5
7. Greater interest in math.	10	2	0	21	10	2	22	3	3	35	7	2
8. Better grades in math.	9	3	0	27	4	2	22	2	4	32	8	3
9. More interest in future career choices.	12	0	0	30	1	2	25	0	3	39	3	1
10. Sets and achieves goals.	10	0	2	31	1	1	21	2	5	31	5	8
11. Better problem solving skills.	10	0	2	30	1	1	18	4	6	36	4	2

So, the parents of students participants were asked about their perceptions of their child's experience at the SBK program. Results from all two items in this section demonstrated that 96.3 per cent of parents agreed that their child had enjoyed being at SBK and that they had learned a lot while being in the program. Ninety per cent of the parents also reported that their children spoke positively about the staff.

The parents' opinion about the change for positive related to the goal areas of the program was as high as 78.7 per cent. Over 77 per cent agreed that their child had improved in school attitude. The majority of the parents (77.1 per cent) also agreed that their child had greater interest in science and math and made better grades in both subjects. More interest in future career choices was reported by 88.3 per cent. Increased ability to set goals and better problem solving skills were reported by 78 per cent of the parent respondents.

The final heading in the parent survey was "Any other comments." I was personally disappointed at the low number of parent comments: 33 out of 120 had written something. Many of these 33 comments were in the form of thanking SBK for their child's experience. All the comments were positive and more similar types of programs or continuation for the SBK were inquired. Here are few of the comments the parents wrote:

Parent Comments

"It was a lot of fun - even I enjoyed it. Very interesting." PS1995:9

"Thank you for allowing my daughter to attend SBK [Starbase Kelly]. It was a wonderful experience for her and for us. Please let her know any other projects that she can attend." PS1996:8

"This is an excellent idea. All children should be exposed to this. My son is doing so much better in science and in math. Again. Excellent program." PS1996:9

"I wish SBK can return to our school Kindred Elementary. I have two more children there and believe they would like to experience this trip." PS1996:27

"Thanks for taking the time out to help my child." PS1997:11

"Students should be able to attend more trips to SBK because of the very positive outcome it had on them." PS1997:16

"SBK is a great program, it makes our children at Sky Harbour feel special and very important. Our hats go off to you." PS1997:17

"Jessica really enjoyed going to SBK that is all she talks about. Thank you for the program." PS1998:18

"My son has always wanted to be an astronaut and now he really wants to be one." PS1998:19

"Good program and I'd like to see more of it." PS1998:26

"I'd like to reinforce SBK: It did make an impression." PS1998:36

Here are only few of the comments parents had written. Even these few give a very clear picture that the parent's overall opinions of Starbase Kelly were very favorable. Again we must remember that there were no control over who answered the surveys. This may suggest that the comments were written by someone else.

In this chapter I studied the answers in the 120 SBK student/parent surveys. According to the results the program has helped a great deal

of children who attended SBK during years from 1995 to 1998. Of course there were some who still had negative attitudes toward the program as well as school. Even though the majority of the 120 students who returned the questionnaire seem to have gained long term benefit we must remember that the survey answers are very subjective. When interpreting and drawing conclusions based on the results we need to be aware of the fact that the answers may not have been totally honest if at all. What comes to the parent surveys, subjectivity is also here an issue. In addition, we need to consider the fact that there is no guarantees that a parent has filled the parent survey. I have, however, drawn conclusions based on the answers. assumptioning that a parent has really filled out the survey. According to the results parents had made positive observations in their children after they had attended SBK.

Based on both student and parent observations and opinions I would claim that SBK has some positive long term effects on its attending students. The questions of genuineness of the results rises its head again, but when dealing with material like this it will always be present.

9 CONCLUSION

The results of this program seem to be extremely positive based on the material I have studied. The whole idea of the program is to motivate the students to stay in school and graduate from high school. Getting an education is crucial in today's world and the program sets a heavy weight on this idea. Making the learning process fun and something that everybody can take part into motivates the students to notice, that no matter how difficult the subject, if you set your goal on something you will eventually achieve it by working hard enough for it.

The pre- and post-tests of the 67 students indicate very clearly that the program succeeds to teach the attending children what they have set to be their goal. The very positively dramatic results in the tests show that the program works at least in the short term. On the other hand, the 120 returned surveys give an impression of more confident and successful children in the school environment. As a reminder of the validity of the survey results, the survey answers are always subjective and because of that nothing very infinite cannot be drawn from them. The results from the surveys certainly indicate tendencies and suggest some ideas but only from the analyzed 120 surveys.

The results of this research show that the program works in short time period as well it seems to have positive effects in the long term. As a reminder, 69 per cent of the students stated their goal to be attending college after graduating from high school. I doubt this was the case before these children attended SBK.

The research was done by first analyzing 67 students' *Lift Off* and *Landing* answers and then analyzing returned student and parent surveys that were made by the SBK staff. Unfortunately there was only

120 surveys returned of all 1868 potentially delivered surveys. Even though the number of the surveys was so small some conclusion can be drawn from them. At least they will show some tendencies. The supposed sample was to be as big as over 2,000. As every one can see, 120 instead is a very small number of the total surveys sent.

Now when finishing the study I still believe this was the right way to do it. There would have been so much material to draw conclusions on (home teacher reports, SBK staff letters, guest book - a record where any written comments from visitors have been collected, among other items) but I decided to leave them out of this particular study. I wanted to concentrate more on the effects of the program on the attending children. And even though the sample of returned surveys was so small, it gave me plenty enough material to work with. Maybe next study about this particular program could be descriptive one without including the test and surveys in it.

Future Research

When I started this research I came across something that I was not aware of. As I have mentioned earlier in this study, there seem to be masses of studies done about the factors that place Mexican-American at risk as well as other ethnicities. But there is no valid research done about the programs that are targeted to these people. There are vast amount of possibilities in this area for research and the next step should be closer studies of the different kinds of programs with results available to all interested. One possibility here in Finland would be to study the situation in our present comprehensive schools (classes through 1-9.) Do we have this kind of at-risk population? How they are noticed, if they are? Would a program similar to Starbase Kelly work here? The reason for this kind of study is continually changing situation

in Finland. There is an ever-growing foreign population living in our country and the demographic description of school population changes along it when the immigrants' children come to school. Is Finnish culture going to face similar kind of problems that the United States are facing now?

I have never seen as motivating and enthusiastic a program in my life. I must admit that I admire the work these people are doing and hope that this study will give further reasons to continue helping the children in San Antonio. Like one of the parents commented in the parent survey I would hope that all children could experience this program.

BIBLIOGRAPHY

Primary Sources

Starbase Kelly program:

Curriculum outlines + student activities + material for teaching (Starbase Kelly)

Pre- and post test questions and results of individual students

Starbase Kelly 433D Airlift Wing - Starbase Kelly an AFRES Youth Program (brochure)

Starbase Kelly questionnaire and the filled questionnaires

Starbase Kelly Youth Program - San Antonio's Youth Aiming High Into America's future (brochure)

Student Flightlog (Starbase Kelly)

Secondary Sources

Alva, S. A. 1991. Academic invulnerability among Mexican American students: the importance of protective resources and appraisals. *Hispanic Journal of Behavioral Sciences*, 13 (1), 18-34.

Arias, M.B. 1986. The context of education for Hispanic students: an overview. *American Journal of Education*, 95, 26-57.

Bryant, Donna M., Graig T. Ramey 1987. An analysis of the effectiveness of early intervention programs for environmentally at-risk children. in F. Bennet and M. Guralnick (eds.). *The effectiveness of early intervention for at-risk and handicapped children*, Child Development And Mental Retardation Center, University of Washington, Seattle, WA. Academic Press, Inc. San Diego, CA.

C.A.R.T. (no author). *C.A.R.T. Home Page*. Available from http://www.curbet.com/cart/index.htm [Accessed Feb. 16, 1999].

Center for Applied Linguistics 1994. *Project Adalante: moving onward to a better education*. Washington, DC,

Chadwick, Bruce A., and Tim B. Heatan 1996. *Statistical handbook on U.S. Hispanics*. Onyx Press, Phoenix, AZ.

Chang, H. N. 1990. *Newcomer programs: Innovative efforts to meet the challenges of immigrant students*. San Francisco, CA, California Tomorrow.

Dinnerstein, Leonard, and David M. Reimers 1982. *Ethnic Americans: a history of immigration and assimilation*, Second Edition. Harper & Row, Publishers, Inc., New York, NY.

Dougherty, V. 1989. Youth at risk: the need for information, In J.M. Lakebrink (ed.). *Children at risk* , Springfield, IL, Charles C. Thomas.

Henrikson, Markku 1990. *Siirtokunnista kansakunnaksi, johdatus Yhdysvaltain historiaan*. Gummerrus kirjapaino Oy, Jyväskylä.

Hilliard, Asa G. III 1989. *Public support for successful instructional practices for at-risk students.* Delivered paper.

Hirano-Nakanishi, M. 1986. The extent and relevance of pre-high school attrition and delayed education for Hispanics. *Hispanic Journal of Behavioral Sciences,* 8(1), 61-76.

Irmsher, Karen Apr. 1997. *Education reform and student at risk.* ERIC Digest Number 112. Clearinghouse on Education Management, Eugene, OR.

Keefe, Susan E., and Amado Padilla 1987. *Chicano ethnicity.* Albuquerque: University of New Mexico Press.

Kindler, Anneka 1995. *Education of migrant students in the United States.* Available from: http:// www.ncbe.gwu.edu/ncbepubs/ directions/volume1/ 08.htm [Accessed Oct. 6, 1998].

Klingstedt, Joe Lars 1989. *Students at-risk. Final Report.* Texas Univ., El Paso, TX.

McDill, Edward L. 1973. *Structure and process in secondary schools: the Academic impact of educational climates.* Johns Hopkins University Press, Baltimore.

Miller, E. William, and Ruby M. Miller 1996. *United States immigration.* ABC-CLIO, Inc., Santa Barbara, CA.

Ministry of Education NZ (N.d.). *Improving achievement of at-risk students: alternative learning programmes.* Available from: http://www.minedu.govt.nz/Schools/ImprovingAchievement/3.htm [Accessed Feb 17, 1997].

Moreno, Luisa 1996. Caravans of sorrow: non-citizen Americans of the Southwest, in Gutierrez, D. (ed.). *Between two worlds.* Scholarly Resources, Wilmington, DE.

National Council of La Raza 1992. *State of Hispanic American 1991: an overview.* Washington, DC, National Council of La Raza.

Oakes, Jeannie 1985. *Keeping Track: How Schools Structure Inequality.* New Haven, Connecticut, Yale University Press.

Omega High School (no author). *Omega High School Home Page.* Available from: http://www.wccud.k12.ca.us/omega/omega.htm [Accessed Feb 16, 1999].

Racosky, Richard J. 1996. *dreams + action = Reality, a step-by-step guide to lifelong success for youth.* Second Edition, ActionGraphics Publishing, Boulder, CO.

Rumberger, R.W. 1987. High school dropouts: A review of issues and evidence. *Review of Educational Research,* 57(2), 101-121.

Shafiutz, J.M., R.P. Koeppe, and E.W. Soper 1988. *Dictionary of Education.* New York, NY, Facts on File.

Schick, Franck L., and Renee Schick eds. 1991. *Statistical handbook on U.S. Hispanics.* Onyx Press, Phoenix, AZ.

Siu, Sau-Fongm (n.d.). *Report 8: Asian American students at risk: a literature review.* Available from: http://www.csos.jhu.edu/crespar/CRESPAR %20Reports/report08entire.html [Accessed Sept 27, 1998].

Smith, Gayle, and Don Smith 1989. *Learning styles of at-risk youth: a schoolwide study skills program. Practitioners guide series number six.* Texas Education Agency, Austin, Texas Dropout Information Clearinghouse.

Sosa, Alicia 1990. *Making education work for Mexican Americans: promising community.* Available from: http:// ericps.crc.uiuc.edu npin/respar/texts/parschoo/mexcomm.html [Accessed Oct 5, 1998].

Steinberg, L., S.L. Blinde, and K.S. Chan 1984. Dropping out among language minority youth. *Review of Educational Research,* 54(1), 113-132.

Sue, S., and Amado Padilla 1986. *Ethnic minority issues in the United States: Challenges for the educational system.* In Bilingual education Office (Ed.), Beyond language: Social and cultural factors in schooling language minority students. Los Angeles, CA, California State University, Evaluation, Dissemination and Assessment Center.

Suro, Roberto 1996. *Watching America's door: the immigration back lash and the new policy debate.* Twentieth Century Fund, Inc.

Tammivuori, Christina 1998. *At-Risk program Starbase Kelly: does SBK achieve its goals in changing student attitudes on school and learning?* Unprinted Proseminar Thesis, University of Jyväskylä.

Trueba, H. T. 1983. Adjustment problems of Mexican and Mexican-American students: An anthropological study. *Learning Disabilities Quarterly,* 6(4), 393-415.

US Bureau of Census 1997. *Statistical Abstract of the United States 1997, The National Databook, 117th Edition.* US Bureau Of Census, Washington DC.

US House of Representatives Report 103 – 227 1994. *Goal 2000: Educate America Act of 1994.* Available from: http://inet.ed.gov/legislation /GOALS2000/The Act/sec912.html [Accessed: Oct 18, 1998].

Valverde, S.A. 1987. A comparative study of Hispanic high school dropouts and graduates: Why some leave school early and some finish? *Education and Urban Society,* 19(3), 320-329.

Vega, William A. 1990. Hispanic families in the 1980s: A decade of research. *Journal of Marriage and the Family* 52, 1015-1024.

Veléz-Ibáñez, Carlos 1996. *Border Visions. Mexican cultures of the Southwest of United States.* Arizona Board of Regents, The University of Arizona Press.

Vogt, W. Paul 1997. *Tolerance & Education, Learning to Live With Diversity and Difference.* SAGE Publications, Inc.

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APPENDIX 1

LIFT OFF

1. Two of the three flight control surfaces on a typical airplane are located on the tail section (empennage); the third is located on the:

a. Fuselage
b. Canards
c. Main Wings
d. Pitot system
e. I don't know.

2. Which is not a part of model rocket?

a. Fins
b. Liquid fuel
c. Solid fuel
d. Recovery system
e. I don't know.

3. Which control surface on the airplane controls bank (roll)?

a. Rudder
b. Flaps
c. Ailerons
d. Elevator
e. I don't know.

4. When a person experiences 4 g's, it is approximately the same as experiencing:

a. Four times his/her weight
b. One fourth his/her weight
c. Four times his/her mass
d. One fourth his/her mass
e. I don't know.

5. Newton's third law states: for every action there is:

a. An equal reaction
b. An unequal reaction
c. An equal and opposite reaction
d. An unequal and opposite reaction
e. I don't know.

6. The air moving faster over the top of an aircraft wing (airfoil) will create:

a. Less pressure over the wing
b. No change in pressure over wing
c. Greater pressure over the wing
d. Same pressure
e. I don't know.

7. Team working together must all be doing different things.

a. True
b. False
c. I don't know.

8. Newton's first law says: A body in motion tends to reamain in motion and a body at rest tends to remain at rest, unless acted by an outside force. This is know as the law of:

a. Constant forces
b. Preservation of energy
c. Inertia
d. Preservation of mass
e. I don't know.

9. When it comes to planning my future, the person(s) most responsible for my success is:

a. My parent(s)
b. My teacher(s)
c. My friend(s)
d. Me
e. I don't know.

10. According to many experts one of the most important abilities a person needs in the future workplace is to know how to work as the member of a team. For a team to work effectively and be a winning team:

a. Every team member must be highly intelligent.
b. Every team member must know how to communicate.
c. Every team member must know two languages.
d. Every team member must be athletically talented.
e. I don't know.

11. Newton's second law states that a force can be applied to an object. If you increase the force is the direction of movement, and do not change the mass of the object, what will happen?

a. The object will move slower.
b. The object will move faster.
c. The object will stop moving.
d. The object will move at the same speed.
e. I don't know.

12. If astronauts wanted to equally accelerate two satellites from the cargo bay of the Space Shuttle where the first satellite has twice the mass of the second, they would have to apply more force to the second satellite.

a. True

b. False
c. I don't know.

13. Which is not one of the four forces of flight?
a. Lift
b. Pressure
c. Thrust
d. Drag
e. I don't know.

14. If I do illegal drugs at any time:
a. I might crash my future.
b. I may ruin my dreams + action = Reality formula for success.
c. I could affect the health of any children I plan to have.
d. All of the above.
e. I don't know.

15. Thrust is a force created by a power source which gives an airplane:
a. Upward motion.
b. Downward motion.
c. Forward motion.
d. Backward motion.
e. I don't know.

16. The aerodynamic force which creates low pressure over a curved surface was first described by:
a. Bernoulli
b. Newton
c. Einstein
d. Yeager
e. I don't know.

17. Which is not a recommended way to say "no" to someone who offers you drugs or alcohol:

f. Ignore the person and walk away.
g. Politely say "No thank you" and walk away.
h. Say you have something else to do and leave.
i. Discuss with the person the bad effects of drugs and other things you've heard about drugs.
j. I don't know.

18. Air takes up space, has weight, and exerts pressure?

a. True
b. False
c. I don't know.

19. For which aircraft must we overcome the greatest amount of inertia in order to move.

a. C-130
b. C-5
c. F-16
d. F-4
e. I don't know.

20. When the engine of our model rocket pushes it into the sky, the main force it overcomes is:

a. Resistance from air pressure
b. Force of gravity
c. Centrifugal force
d. Force of nature
e. I don't know.

APPENDIX 2

LANDING

1. Two of the three flight control surfaces on a typical airplane are located on the tail section (empennage); the third is located on the:

a. Fuselage
b. Canards
c. Main Wings
d. Pitot system

2. Which is not a part of model rocket?

a. Fins
b. Liquid fuel
c. Solid fuel
d. Recovery system

3. Which control surface on the airplane controls bank (roll)?

a. Rudder
b. Flaps
c. Ailerons
d. Elevator

4. When a person experiences 4 g's, it is approximately the same as experiencing:

a. Four times his/her weight
b. One fourth his/her weight
c. Four times his/her mass
d. One fourth his/her mass

5. Newton's third law states: for every action there is:

a. An equal reaction
b. An unequal reaction
c. An equal and opposite reaction
d. An unequal and opposite reaction

6. The air moving faster over the top of an aircraft wing (airfoil) will create:

a. Less pressure over the wing
b. No change in pressure over wing
c. Greater pressure over the wing
d. Same pressure

7. Team working together must all be doing different things.

a. True
b. False

8. Newton's first law says: A body in motion tends to remain in motion and a body at rest tends to remain at rest, unless acted by an outside force. This is know as the law of:

a. Constant forces
b. Preservation of energy
c. Inertia
d. Preservation of mass

9. When it comes to planning my future, the person(s) most responsible for my success is:

a. My parent(s)
b. My teacher(s)
c. My friend(s)
d. Me

10. According to many experts one of the most important abilities a person needs in the future workplace is to know how to work as the member of a team. For a team to work effectively and be a winning team:

a. Every team member must be highly intelligent.
b. Every team member must know how to communicate.
c. Every team member must know two languages.
d. Every team member must be athletically talented.

11. Newton's second law states that a force can be applied to an object. If you increase the force is hte direction of movement, and do not change the mass of the object, what will happen?

a. The object will move slower.
b. The object will move faster.
c. The object will stop moving.
d. The object will move at the same speed.

12. If astronauts wanted to equally accelerate two satellites from the cargo bay of the Space Shuttle where the first satellite has twice the mass of the second, they would have to apply more force to the second satellite.

a. True
b. False

13. Which is not one of the four forces of flight?

a. Lift
b. Pressure
c. Thrust
d. Drag

14. If I do illegal drugs at any time:

a. I might crash my future.

b. I may ruin my dreams + action = Reality formula for success.

c. I could affect the health of any children I plan to have.

d. All of the above.

15. Thrust is a force created by a power source which gives an airplane:

a. Upward motion.

b. Downward motion.

c. Forward motion.

d. Backward motion.

16. The aerodynamic force which creates low pressure over a curved surface was first described by:

a. Bernoulli

b. Newton

c. Einstein

d. Yeager

17. Which is not a recommended way to say "no" to someone who offers you drugs or alcohol:

a. Ignore the person and walk away.

b. Politely say "No thank you" and walk away.

c. Say you have something else to do and leave.

d. Discuss with the person the bad effects of drugs and other things you've heard about drugs.

18. Air takes up space, has weight, and exerts pressure?

a. True

b. False

19. For which aircraft must we overcome the greatest amount of inertia in order to move.

a. C-130
b. C-5
c. F-16
d. F-4

20. When the engine of our model rocket pushes it into the sky, the main force it overcomes is:

a. Resistance from air pressure
b. Force of gravity
c. Centrifugal force
d. Force of nature

APPENDIX 3

Starbase Kelly Student Survey

We would like to know what you think about your Starbase Kelly experience. Please answer as honestly and completely as you can by filling in the circle to show your answer to each question.

Did Starbase Kelly help you to:	**Yes**	**No**	**Don't know**
Set and achieve goals?	0	0	0
Make choices based on your principles, values, and goals?	0	0	0
Take responsibility for the choices you make?	0	0	0
Think about future career choices?	0	0	0
Choose to say no to drugs?	0	0	0
Choose to say no to gangs?	0	0	0
Choose to say no to teen pregnancy?	0	0	0
Choose to graduate from high school?	0	0	0
Understand the importance of teamwork?	0	0	0
Understand the importance of developing and using good communication skills?	0	0	0
Develop and use good problem solving skills?	0	0	0
Look for win/win solutions to problems?	0	0	0
Understand how science in used everyday life?	0	0	0
Be more interested in science in school?	0	0	0
Understand how math is used in everyday life?	0	0	0
Be more interested in math in school?	0	0	0

Think about the Starbase Kelly Team, the Air force personnel, and the Career Guides you met. Did they:	**Yes**	**No**	**Don't know**
Know a lot about what they were teaching you?	0	0	0
Serve as good role models for you?	0	0	0
Treat you with respect?	0	0	0
Help you learn?	0	0	0
Encourage you to set and achieve goals?	0	0	0
Help you to feel good about yourself?	0	0	0

<u>Before</u> you attended Starbase Kelly, did you:	**Yes**	**No**	**Some times**
Make good grades in science?	0	0	0
Make good grades in math?	0	0	0
Like science?	0	0	0
Like math?	0	0	0
Set goals for yourself?	0	0	0
Think about what you might do when you grow up?	0	0	0

<u>Now</u>, do you:	**Yes**	**No**	**Some times**
Make good grades in science?	0	0	0
Make good grades in math?	0	0	0
Like science?	0	0	0
Like math?	0	0	0
Set goals for yourself?	0	0	0

Think about what you might do when you grow up?	0	0	0

Please indicate your current goal after high school. (choose only one.)

0 Get a job.
0 Attend a technical/trade school.
0 Attend a college.
0 Enter the military service.
0 Other.

Has anything exciting or unusual happened to you since you were at Starbase Kelly? If so, please tell us about it.

_____
_____
_____
_____
_____
_____
_____
_____

Thank you taking the time to complete this survey. Please return it with your parent's/guardian's survey in the envelope provided by January 29th, 1999.

APPENDIX 4

Starbase Kelly Parent Survey

We would like to know what you think of your child's Starbase Kelly experience. Please answer as honestly and completely as you can by filling in the circle to show your answer to each question.

Did your child:	**Yes**	**No**	**Don't know**
Enjoy being at Starbase Kelly?	0	0	0
Learn a lot at Starbase Kelly?	0	0	0
Speak well of the adults at Starbase Kelly?	0	0	0

After you child attended Starbase Kelly, did you notice any of the following changes?	**Yes**	**No**	**Don't know**
Better attitude in school.	0	0	0
Greater interest in science.	0	0	0
Better grades is science.	0	0	0
Greater interest in math.	0	0	0
Better grades in math.	0	0	0
More interest in future career choices.	0	0	0
Sets and achieves goals.	0	0	0
Better problem solving skills.	0	0	0

Any other comments?

_____

_____

_____

_____

_____

Thank you for taking the time to complete this survey. Please return it with your child's survey in the envelope provided by January 29, 1999.