



EDWIN E. ALDRIN FUND

RESEARCH FELLOWSHIP PROGRAM



State of New Jersey

Department of Higher Education

974.90

C697

1972k

51

BOARD OF TRUSTEES

Dr. James Hillier
Executive Vice President
RCA Laboratories

Honorable Clarence C. Ferguson, Jr.
Department of State
Washington, D.C.

Dr. James B. Fisk
President
Bell Telephone Laboratories

Mr. Walter J. Bilder, Esquire
Newark, New Jersey

Dr. Carl Kaysen
Director
Institute for Advanced Study

Mr. Reuven Frank
President
NBC News

Mr. H. I. Romnes
Chairman of the Board
American Telephone & Telegraph Co.

Colonel Edwin E. Aldrin
Brielle, New Jersey

ADVISORY PANEL

Dr. Elizabeth L. Ehart
Director
New Jersey State Scholarship Commission

Dr. Milton Grodsky
Vice President for Academic Affairs
William Paterson College of New Jersey

Dr. Joseph H. Hammel
Assistant to the President
Essex County College

Dr. Erich Hirschberg
Associate Dean for Research
College of Medicine & Dentistry of N.J.

Mr. Reuben Johnson, Director
Educational Opportunity Fund
Montclair State College

Dr. Patrick J. Kennedy
Acting Vice President for Student Services
Seton Hall University

Dr. Francis J. Mertz
Vice President for Finance & Development
Saint Peter's College

Dr. Barbara A. Morrison
Chairman, Mathematics Department
College of Saint Elizabeth

Dr. Bard Thompson
Dean of the Graduate School
Drew University

Dr. JoAnne Whitaker
Director, Division of Science
Somerset County College

CONTENTS

Introduction	i
FELLOWSHIPS FUNDED -- 1971-1972	
Alternatives to the Family Mathew Greenwald and Carl Danziger	1
Changing Attitudes Toward Mental Illness Marguerite C. Hanlon	2
Lead Poisoning in Newark Sister Gretchen Hermann, Richard G. LaMere, and Angelo Sparagna	3
An Exploration Into The Relationships Among Puerto Rican Migrant Farm Workers' Cultural Background, Occupational Position and Health Attitudes, and the Consequences for the Delivery of Health Services Deborah Humphreys	4
Day Care Management and Instruction Eleanore Murad	5
Drug Abuse Education: Peer Group Formation and Leadership Richard Roscitt and Steven Stalgaitis	6
Training of Perceptual Motor Skills in Minimally Brain-Damaged Children Hilda Glazer	7
Child Care Center, Teaneck, New Jersey David Courson, Katherine Sherman, Fred Silver, Jackie Susser, Carl Vitale, and Donna Wolkoff	8
An Investigation of the Effects of Neonatal Intensive Care Upon the Intellectual Development and Social Functioning of Very Low Birthweight Infants Peter Madden	10
Minority Business Enterprise As A Means to Full Quality Employment June Jaffe, Willa Hogan, and Joel Jaffe.	11

Audiometric Screening of Pre-School Children in Middlesex County Carmen Crowell and Lynne Ragone	12
Student Oriented Studies: Impact of Proposed Watershed Changes on the Ecology of the New Jersey Pine Barrens Thomas Givnish	13
Norms for Urban Black Children on the Berry Developmental Test of Visual Motor Integration Andrea Padlowski and Elizabeth Davidson	14
Funding of Day Care Centers Joan Lyons	15
Environmental Implications of Full Replacement of Detergent Phosphate by NTA in the Passaic River Nancy Cosentino	16
Automated Teaching Techniques, with Emphasis on Teaching English Composition at the College Level Joseph Graff, Christine Ball, Neil Figurelli, Devora McIntosh, and Arlette Naspinski	17
Newark State College and Community Service Peter Zanais	18
The Effects of a Literature-Based Concept Development Program on the Acquisition of Basic Concepts in Disadvantaged, Preschool Children Nina Molee, and Mary Jo Paglia	20

INTRODUCTION

On July 20, 1969 a decade or more of space exploration was crowned with astounding success when Neil A. Armstrong and Edwin E. Aldrin, Jr. became the first human beings to set foot on the moon. In creative celebration of this brilliant accomplishment and in proud recognition of the fact that Colonel Aldrin was born and raised in New Jersey, Governor Richard J. Hughes on July 30, 1969 proposed the creation of the Edwin E. Aldrin Fund for the Advancement of Knowledge. A short week later, legislation was introduced with bipartisan support by Senators Frank X. McDermott, Raymond H. Bateman, J. Edward Crabel, Harry Sears, and James Wallwork, approved that same day by the State Senate, and passed by the State Assembly shortly thereafter. Solid encouragement and support have been continued since that time by Governor William T. Cahill, the Legislature, and the Chancellor of Higher Education, Ralph A. Dungan.

The basic purpose of the Aldrin Fund has been the provision of small grants to enable students of undergraduate, graduate, and professional schools in New Jersey to undertake research projects of social value and concern. Of all the investigations that might engage young minds devoted to the advancement of knowledge, those which would be potentially most beneficial to society were given the highest priority. Selection of the projects was entrusted to an advisory panel of faculty members and administrators from New Jersey's colleges and universities, who made their recommendations to the distinguished Board of Trustees selected by the Governor.

During 1971-72, over one hundred applications were received and twenty-eight met the rigorous criteria of selection and were given support. In the current academic year, an additional twenty-one projects were chosen from a group of seventy-two applications. At this writing, competition for the next period has already begun.

Each project has been proposed and carried out by one or more students with the assistance of a faculty advisor. Upon completion of the study, a report detailing and summarizing the findings is filed with the Department of Higher Education. The first collection of these reports is presented herewith to highlight the surprisingly wide variety of useful projects and the encouragingly high quality of their conception and execution. This report is dedicated to the vision of the leaders of New Jersey who created the Edwin E. Aldrin Fund for the Advancement of Knowledge and to the enthusiasm and creativity of the young men and women who have made their individual contributions to a better tomorrow for us all.

ALTERNATIVES TO THE FAMILY

Mathew Greenwald and Carl Danziger (Graduate Students)
Rutgers University, The State University

There has been much concern in recent years that the family structure is in jeopardy. One of the major causes of this concern has been the growth of alternatives to the traditional family. Unmarried couples and communes are the two alternatives receiving most of the attention.

The researchers believe that these alternatives are growing and will continue to grow, but do not present a real danger to the family. Rather, they represent another stage in the life cycle called "youth". This period usually extends from the end of adolescence to an indefinite point, often the late twenties or early thirties, after which the experimenters seem to drop back into society and start traditional families.

In order to aid our understanding of this development, the researchers undertook an extensive study of unmarried couples and communes. Through numerous interviews the researchers found that the couples are generally young, slightly dependent financially on their parents and live by themselves in a working class neighborhood of a "university" town. At least one partner is a student, and both contribute equally to the payment of bills. They come from similar suburban middle class backgrounds and view their parents as happily married. They have been living together for about one year and were "going together" for about eight months prior to this arrangement. Their relationship is exclusive, and they classify it as happy and very stable. They use "illegal" drugs occasionally, almost exclusively marijuana. They are taking precautions to guard against an unwanted pregnancy, and agree that if pregnancy should occur, an abortion would be arranged. The couples have found living together to present fewer problems than they anticipated. Although they have no specific plans for marriage, they think there is a good possibility they will marry some day.

The second alternative studied was communal living. The researchers prepared a nine-fold typology of communes, providing a descriptive account of each type.

It was found that three themes of personal motivation (working in conjunction with societal changes) seem to best explain the growth of communes. These themes are rejection of society, desire for personal evolvment, and a search for a practical community by the communards.

In the future it is expected that some of the types of communes will decrease while others appear likely to have a real chance of becoming a permanent part of American society. In summing up the impact of communes on society, it appears that most communes do not last for a long time, and most communards do not desire to live permanently in them. These settlements cannot be viewed as a permanent alternative to marriage, and children are not frequently found in them. Although some communes may be a threat to society, the majority are attempting to adjust to society and live within it.

It is the conclusion of the researchers that communes do deserve legal protection and, at times, public support since these groups can serve positive functions for their members. Action should not be taken to discourage them; however, provision should be made to provide realistic information concerning the communal movement.

Faculty Advisor: Dr. David Popenoe, Department of Sociology

CHANGING ATTITUDES TOWARD MENTAL ILLNESS

Marguerite C. Hanlon (Graduate Student)
Rutgers University, The State University

In the United States today more patients are hospitalized for mental illness than for all other diseases combined (1,800,000). Ninety-eight percent of these are in public hospitals. In addition, with the advent of more modern treatment methods which return the patient to his family and community, recovery is contingent upon the willingness of the community to accept the patient and provide services for him. The attitude of the public is, therefore, of importance in providing treatment for the mentally ill.

Previous studies using the Opinions About Mental Illness (OMI) as a measuring instrument show that attitudes toward mental illness do change through proper instruction. The subjects of these studies have all been college students who have participated in college level psychology courses. The largest percentage of our youth, however, do not go to college and are not often exposed to the type of information that would favorably influence their attitudes.

The current study was designed to determine whether a six-week unit on mental illness could change attitudes of high school seniors in this area. The subjects were members of eleven psychology classes at North Hunterdon Regional High School, Annandale, New Jersey. The experimental group consisted of 145 members of 6 classes who were tested after participating in the unit, while the control group included 130 students in 5 classes who were tested prior to the instructional unit. The test used was the OMI.

Results of the study show that it is possible through education to influence attitudes of high school students toward mental illness. The scores suggested changes in a positive direction in all five areas measured by the test. Statistically significant changes were found, however, on only two factors, mental hygiene ideology and interpersonal etiology. This indicates that change is most likely to be effected with attitudes closely associated with a knowledge of mental illness. The lack of significant attitude change in the other areas has been found by prior researchers who have concluded that such factors are more closely related to basic personality structure than to knowledge.

Faculty Advisor: Dr. David L. Cox, Department of Psychological Foundations

LEAD POISONING IN NEWARK

Sister Gretchen Hermann, Richard G. La Mere, and Angelo Sparagna (Graduate Students)
College of Medicine and Dentistry of New Jersey - New Jersey Medical School

Lead poisoning among children in Newark is a serious problem. As a part of the college's program of investigation and treatment of lead poisoning, the researchers undertook studies to evaluate public understanding of the problem in high risk areas, to assess the community's utilization of lead testing programs and to test the psychomotor functioning of children with high lead levels.

A survey of 358 families, representing 698 children between the ages of one and six years, was undertaken. It was found that 61% of the parents had some knowledge about lead poisoning. Of those with some knowledge of the problem, however, only 38% knew some of the symptoms. By far the most effective source of information was television.

Two methods of lead testing were compared in order to assess utilization of this service. In one area of the city door-to-door canvassing was used to arrange appointments. A second area of Newark was informed of the program through publicity methods using posters and sound-trucks. In both areas, children who did not avail themselves of the opportunity to be tested were then located and tested.

It appears that both methods were equally successful in reaching the population. Theoretically, the publicity method should be more effective with concerned persons whereas appointments should reach more of the hard-to-motivate families, but is more costly in time spent per child. The appointment method produced a slightly lower yield of subjects but it is felt that this method is less subject to large fluctuations in respondents and is a better method of educating people.

When the blood lead levels of those children who had not responded to the pro-

grams during the first round of testing were compared to those who were tested, no significant differences were noted.

The final portion of the research involved testing of one hundred Newark children from the ghetto population by the Denver Development Screening Test (DDST). The test is a screening device intended for clinical practice to alert the examiner to developmental problems in children. The test data was compared with the child's blood lead level on the day of testing and with the child's highest recorded lead level.

Examination of the tests showed no correlation between the DDST scores and the lead levels on the day of testing. A correlation was found between fine motor function scores and the highest recorded lead levels. A study of individual cases also raised some disturbing questions. Some children showed fine motor deficits yet had no records of blood lead levels high enough to expect this deficit. Although these test results may derive from problems other than lead poisoning, it is possible that various structures of the body had been damaged by previous exposure although evidence of corresponding levels in the blood is not present.

Faculty Advisor: Dr. Ann A. Browder, Department of Public Health and Preventive Medicine

AN EXPLORATION INTO THE RELATIONSHIPS AMONG PUERTO RICAN MIGRANT FARM WORKERS' CULTURAL BACKGROUND, OCCUPATIONAL POSITION AND HEALTH ATTITUDES, AND THE CONSEQUENCES FOR THE DELIVERY OF HEALTH SERVICES

Deborah Humphreys (Undergraduate Student)
College of Saint Elizabeth

Migrant farm life involves almost 20,000 part-time "residents" of New Jersey and their families. This life style generates inadequate arrangements for community services for these people.

The purpose of this project was to study the interrelationships among the cultural background of the migrant Puerto Rican farm worker, his occupational position in the migrant stream, his attitudes toward health and hygiene, and the consequences of such relationships for the effective deliverance of health services.

Information for the study was gathered by reviewing existing literature, interviewing health services personnel, and through interviews with 30 male Puerto Rican migrant farm workers residing in Cumberland, Gloucester, and Salem counties.

An analysis of the data shows that the primary framework within which the worker

is located in Puerto Rico is a rural, agricultural life but with indications of some movement away from this rural existence. Interpersonal relationships are strong and directed almost entirely within the family which is a tightly knit group. The respondents value highly all aspects of life on the island, indicating that economic considerations force immigration to the mainland. The majority also characterize life on the mainland as satisfactory, although to a lesser degree. Generally, living conditions are viewed as more satisfactory in Puerto Rico, whereas working conditions are seen as improved on the mainland. The overall level of satisfaction of the workers is high and is coupled with a high level of expectations and an awareness of middle class values. Also evident is an awareness of society's denigration of migrant farm labor which carries over into a negative self-evaluation.

The workers view health status, attitudes, and practices as similar on both the mainland and the island. Health care is determined by individual resources, the gravity of the illness, and the accessibility of health facilities. But there appears to be greater isolation of the men and unfamiliarity with health services on the mainland. However, most workers seek health care from established health services and demonstrate increasing sophistication in their knowledge of health and hygiene. The workers also evaluate their present health status as good (although this evaluation does not coincide with results of current studies) and feel that better health care is received if one pays for the service.

Based on the information gathered, the researcher evaluated various types of health care programs to determine their desirability for the workers. Occupational health care maintains the patient to a level at which he can perform satisfactorily as a worker but reinforces the existence of a subculture and the dependency of the worker on his employer. A separate but comprehensive program is also unacceptable because it perpetuates the isolation of the men from the community and its resources. Although regular health care programs are desirable, the workers are financially unable to participate in them.

The best solution appears to be the creation of a comprehensive rural health program which would serve all sectors of the rural population. In her report, this researcher outlines the general requirements for such a program and gives numerous specific recommendations as to how such a program may be instituted.

Faculty Advisor: Sister Ellen M. Desmond, Department of Sociology

DAY CARE MANAGEMENT AND INSTRUCTION

Eleanore Murad (Undergraduate Student)
Fairleigh Dickinson University

Bergen County lacks the number of day care centers necessary to allow welfare

mothers with small children to obtain care for the youngsters so that they can get employment rather than remain on welfare. To help alleviate this problem, the researcher developed and instituted a program to provide para-professional training in the field of day care services for needy or welfare mothers, thereby helping to create the resources necessary to provide increased services and at the same time developing skills in those most in need of them.

Five trainees were carefully screened and chosen for the program. They then participated in a four month, five mornings per week program designed to provide flexible yet extremely thorough training in all aspects of day care services.

A variety of methods were employed to train the women. Visiting specialists lectured on and participated in discussions concerning their field. Workshops were conducted in music, arts and crafts, and movement education. The women received instructions in the use of audio-visual aids and then used video taping to provide feedback of their own activities. Sessions were also conducted concerning physical and mental health and numerous other topics. Throughout the program, the trainees compiled a reference book of materials dealing with their training and conducted independent library research. A very important part of the course was field experience, during which the women had the opportunity to observe a variety of day care centers and to work with the children.

During this period the women were readily accepted by the directors, teachers and children of the schools. The observations of the researcher indicate that they very successfully developed their skills by the conclusion of the project. The women have been offered employment in the field of day care and also have been accepted at the Saturday College in a program leading to an Associate in Arts Degree.

Faculty Advisor: Dean Donald L. Herdman

DRUG ABUSE EDUCATION: PEER GROUP FORMATION AND LEADERSHIP

Richard Roscitt and Steven Stalgaitis (Undergraduate Students)
Stevens Institute of Technology

Although drug use among young people appears to be widespread, it seems that a sufficient number of youths display attitudes opposed to the drug culture. Based on this assumption, the goals of this project were to assess the attitudes of students toward drugs and to identify and train those students showing promise as leaders in anti-drug programs.

During the fall semester, the researchers constructed and administered an attitude survey to the entire sixth through twelfth grades in the North Bergen school system. Areas covered by the survey included social and legal aspects of the problem, familiarization with drug facts and common beliefs, and possible programs of research, rehabilitation and drug prevention.

Analysis of the data suggests that efforts to lessen drug abuse should be concentrated within the grammar school since the younger students are much more oriented against drugs than are the older students. The grammar school students generally are more likely to feel that drug use leads to addiction, have more fear of, have not used and do not advocate the legalization of marijuana. They also are more receptive to the creation of and are more willing to participate in an anti-drug organization. In addition, the survey also confirmed that drug traffic is much heavier in high schools than in grammar schools.

Work has begun with students in the Kennedy grammar school to encourage the formation of an active student group. At all times the researchers tried only to assist, allowing the students to formulate their own ideas for their organization and anti-drug program.

Based on their experiences with this project, the researchers recommend several ideas and approaches for the future. Student organization should be expanded. These groups should be supervised but primarily directed by the students. This type of program should be started at an early age, before the attitudes of students toward drugs become solidly favorable. Also of help would be the availability of counseling services specifically directed toward drug problems and the institution of drug education classes.

Faculty Advisor: Dr. Silvio R. Laccetti, Humanities Department

TRAINING OF PERCEPTUAL MOTOR SKILLS IN MINIMALLY BRAIN-DAMAGED CHILDREN

Hilda Glazer (Graduate Student)
Rutgers University, The State University

Certain learning or behavioral disabilities ranging from mild to severe are often the result of minimal cerebral dysfunction. Such damage may manifest itself in perceptual-motor deficits which are related to the lack of readiness for school learning. It has been shown, however, that specific training tasks often help children with this disability to master tasks they were formerly unable to perform.

The researcher suggested that a motor task which might be used to train visual-motor perception in these children is the pursuit rotor. This instrument has a rotating disk on which is set a lighted target that the subject must track.

The subjects of the study were 30 children from two schools for the brain damaged: Midland School, North Branch, New Jersey and Pathways Schools, Audubon, Pennsylvania. The children were matched on the Bender Visual-Motor Gestalt Test, an instrument used to assess and diagnose the presence of perceptual-motor deficits in children, I.Q., and other important variables and divided into experimental and control groups. The experimentals were then divided into three groups, each group receiving training on a specific type of pattern for eight training sessions. All subjects were given the Bender and the Benton Visual Retention Test as a posttest.

Results of the study show that for the experimental group improvement in tracking increased as a function of practice. Their performance also improved significantly between the pretest and posttest Bender reproductions. In addition, there were no significant differences in errors on the posttest among the three experimental groups as a result of training on different patterns.

The data support the hypothesis that training on the pursuit rotor will have specific transfer to figure copying tasks in general and also suggest that the act of training rather than the specific pattern on which training is given is the important variable. The conclusion is complicated, however, by the fact that the control group increased in errors on the Bender posttest scores.

The evidence suggests that tracking tasks could be included as a part of a perceptual-motor training program in an effort to train gross eye-motor coordination. Proficiency in gross motor areas, in turn, may be expected to yield positive transfer to fine visual-motor coordination activities including drawing and writing.

Faculty Advisory: Dr. David L. Cox, Department of Psychological Foundations

CHILD CARE CENTER, TEANECK, NEW JERSEY

David Courson, Katherine Sherman, Fred Silver, Jackie Susser, Carl Vitale, and
Donna Wolkoff (Undergraduate Students)
Fairleigh Dickinson University

It has been shown in communities across the country that the need for child care

centers has not been satisfied. In Bergen County alone, six out of seven requests for day care cannot be fulfilled. In conjunction with this problem, these researchers worked with a Community Advisory Board to investigate the need for a child care center in Teaneck, an area with a population of approximately 46,000 where there are no day care centers, and to influence the creation of such a center.

The students devised and administered a questionnaire to a rather large sampling of Teaneck residents. An evaluation of the survey shows that there is a need for a center and that the people are receptive to the idea. Of all families interviewed, 71% favor the creation of a child care facility. Families in the survey with pre-school children totaled 21%, of which 30% now use a person or facility regularly to care for their children. If a center is built, 57% of the pre-school families would use it now or in the near future. A breakdown of results by race shows that both blacks and whites are favorable to the creation of a center and would utilize it.

The Community Advisory Board had already proposed a site for the center. Through the use of public records and statistical methods, the students evaluated the desirability of this site. They determined the number of pre-school children (approximately 2,000) in Teaneck and their locations in relation to the site. It was found that the areas surrounding the site are more heavily populated with pre-school children than are other areas and that the site is accessible by bus or walking to 91% of the population. In addition, this area of the town is one of the most economically deprived sections of Teaneck.

Concurrently with these studies, the researchers attempted to evaluate the desirability of having male workers in day care centers. Male volunteers were placed in the centers to work with the children. The results of this experiment were inconclusive since the researchers were unable to locate a suitable test to administer to the students and since the number of children participating was too small to provide both control and test groups. The male workers and the teachers at the school did see, however, what they felt to be favorable changes in the children when the male workers were present.

After the formal completion of the project, the students have continued to work with the Community Advisory Board. Their survey of the desirability of the proposed site has been presented to and received favorably by the city council. The portion of the study dealing with the degree of interest of the people and their willingness to utilize a center is to be submitted to the council in the near future.

Faculty Advisor: Dr. Donald Felstein, The Center for Social Work and Applied Social Research

AN INVESTIGATION OF THE EFFECTS OF NEONATAL INTENSIVE CARE UPON THE INTELLECTUAL DEVELOPMENT AND SOCIAL FUNCTIONING OF VERY LOW BIRTHWEIGHT INFANTS

Peter Madden, (Graduate Student)
Rutgers University, The State University

Each year approximately 10,000 infants with birthweights of 3.3 pounds or less are born in the United States. Before neonatal intensive care facilities were developed, only about 35 percent survived and about 50 percent failed to reach their normal potential because of intellectual or neurological defects. A number of medical problems occurring shortly after birth have been found to contribute substantially to the high rate of deaths and to the later psychological, physical and educational handicaps.

In the mid-1960's medical intensive care units resulted in a dramatic increase in the number of survivors among these infants. However, little research has been published to show the effect of the units upon the functioning of these children later in life.

The researcher proposed to examine the survivors of such a unit to determine the effects of the unit upon the mental development and social functioning of the children. The subjects of the study were 31 survivors (born between 1968 and 1970) of the neonatal intensive care unit of the Monmouth Medical Center, Long Branch, New Jersey. In addition to testing these children, 14 normal birthweight siblings of nearby age were tested to control for variations in socio-economic status, parental attention, sex differences, race, and hereditary endowment.

Tests used in the research were the Stanford-Binet Intelligence Scale or the Cattell Infant Intelligence Scale and the Vineland Social Maturity Scale. The mothers responded to a Social-Personal Questionnaire which provided data about the affective relationships between them and their children and about the relative socio-economic status of the families.

There were no significant differences in mean I.Q. between the low birthweight subjects and the normal birthweight sibling controls nor did the mean I.Q. of the subjects differ significantly from the mean of the standardized intelligence tests. The distribution of I.Q.'s revealed that the proportion of low birthweight subjects found to be mentally retarded was actually lower than the mentally retarded proportion of both the normal birthweight sibling control group and the general population.

No significant differences were found within the low birthweight sample when comparisons were made on the basis of differences in weight, race, sex, or socio-economic status.

The normal birthweight controls produced a significantly higher mean S.Q. than

did the low birthweight subjects. However, both the low birthweight subject group and the normal birthweight control group had mean S.Q.'s higher than the standardized mean of the Vineland Social Maturity Scale.

Within the low birthweight sample, white subjects achieved significantly higher S.Q.'s than did Negro subjects. No other significant differences in S.Q. were noted when comparisons were made within the sample on the basis of birthweight, sex, and socio-economic status.

The researcher concluded that these units not only improve the survival rate, but also increase the number of intact survivors and decrease the rate of mental retardation among these children. These findings should encourage hospitals to make the extensive commitment necessary to provide more intensive care units. In addition, physicians should reassess the warnings they have traditionally offered to parents of these infants, while the parents should have the same positive expectations and close initial involvement with the infants as they would with normal birthweight children.

Faculty Advisor: Dr. William Ellis, Director, Neonatal Intensive Care Unit, Monmouth Medical Center

MINORITY BUSINESS ENTERPRISE AS A MEANS TO FULL QUALITY EMPLOYMENT

June Jaffe, Willa Hogan, and Joel Jaffe (Undergraduate Students)
Newark State College

The original objective of this study was to investigate the use of "Black Capitalism" as a means of providing increased employment within the inner city so as to make maximum use of the capabilities of the people and provide maximum benefit to the entire community. This goal presupposed the positive value of "Black Capitalism". Preliminary research soon suggested the invalidity of this assumption. The goals of the project were then revised to show that "Black Capitalism" is a negative concept, to collect impressions of established business entrepreneurs and the community regarding the system's existing methods, and, based on the information gathered, to make recommendations for raising the economic level of minority groups.

Information for the project was gathered through library research, and interviews and questionnaires directed at agencies, businesses, and community members, primarily in the city of Newark.

An analysis of the data suggests basic problems in many areas of "Black Capitalism".

Agencies designed to promote minority economic ventures are helping primarily middle and higher income members, while the general public is unaware of their services. Business leaders are often unaware of the movement or do not support it because it is not consistent with the rules governing a free capitalistic society or because of its lack of accomplishments to date. Minority businessmen express disappointment because of the overwhelming frustrations experienced in trying to establish themselves. Many citizens of the community seem unsure of which types of business would best provide for their needs or suggest products and services which are not consistent with those suggested by business leaders.

One positive finding of the study involves the potential of the workforce of Newark. It was found that this force is representative of the typical range of vocations needed for a dynamic economy and that this force plans to remain in the area.

The students concluded that "Black Capitalism" is self-defeating in its present form. To become successful, it must change its orientation from a form of "charity" to support through non-discriminatory capitalistic methods which will blend minority economic ventures with the mainstream of our economic system.

Specific recommendations to insure success of increasing minority business enterprise include: (1) increased Federal funding of new businesses, (2) recruitment of leaders from all segment of the populace, (3) implementation of marketing studies to determine which goods and services are needed within the city, (4) restructuring and strengthening of Federal agencies to make their services readily available to a larger segment of the population, and (5) implementation of all future aid by the government rather than by the established business community so as to avoid negative implications.

Faculty Advisor: Dr. George T. Burt, Department of Philosophy

AUDIOMETRIC SCREENING OF PRE-SCHOOL CHILDREN IN MIDDLESEX COUNTY

Carmen Crowell and Lynne Ragone (Undergraduate Students)
Douglass College

It has been estimated that approximately 3.2% of elementary school children have impaired hearing. In the past several years, students and staff at Douglass College have been involved in audiometric screening, primarily with pre-school children in Middlesex County. It has become evident that the method used, air conduction testing, is not completely reliable. The researchers, therefore, proposed to evaluate an alternative screening method, employing both air and bone conduction testing.

The subjects of the study were 89 children participating in the Middlesex County Headstart Program, all of whom were given physical examinations prior to the screening. Forty-four children were tested by air conduction and 45 by air and bone conduction. All failures by either method were retested in a sound-controlled room at Douglass College Speech and Hearing Center. Upon failure to pass the retest, subjects were referred to an otolaryngologist through the Headstart Program.

Of the 44 subjects tested by air conduction, 32 passed and 12 failed the original screening. Seven of these 12 also failed the retest and were referred to a physician. Of the 45 children tested by air and bone conduction, 21 passed and 24 failed the initial test. Upon retesting, 8 failed and were referred to an otolaryngologist. Of these 8, five (or 11% of the total) would have passed the initial screening had they been tested by air conduction only.

Results of the study indicate that air and bone conduction testing is more effective than air conduction testing and can be carried out effectively in rooms that are not sound-controlled. Although it is less economical in terms of time and money, involving double the time needed for air conduction testing, the 11% additional test failures recorded by it raise serious doubts about the adequacy of screening programs that do not include the bone conduction method.

Faculty Advisor: Lili Zeigler, Department of Speech

STUDENT ORIENTED STUDIES: IMPACT OF PROPOSED WATERSHED CHANGES ON THE ECOLOGY OF THE NEW JERSEY PINE BARRENS

Thomas Givnish (Undergraduate Student)
Princeton University

The Princeton Cedar Swamp Study Team, under the direction of this researcher, spent the summer of 1971 investigating the ecological effects which might be expected in the New Jersey Pine Barrens if a proposed system of wells to tap the water table is initiated.

This area is a significant scenic resource and affords some of the best remaining habitat for several rare and endangered species. As a result, the team concentrated its efforts on discovering the effects the water table level and concomitant factors would have on plant species distribution.

Extensive field work coupled with laboratory studies resulted in a wealth of data

from which various predictions and recommendations were made. Basically, the students determined that the proposed system of wells would deplete the water in the swamp peat on an average of 0.6 feet per day until there was no more saturated peat remaining in the zone upon which the Atlantic white cedar is dependent for tree growth and survival. Also indicated is that the distribution of other plants would be altered, extreme high and low soil temperature would occur, the probability of fire would increase, and swamps and the thickness of the peat layer would be reduced, as would be the ability of the peat bed to stabilize water flow and avoid flash flooding.

Based on their findings, the researchers propose that certain steps be followed. If the system of wells is instituted they suggest certain modifications to the system to minimize adverse affects on the environment. Also important to the area would be the establishment of a data bank, more effective control of water pollution, research on the effects of lead pollution, and a cost comparison between the cost of water delivered by the system of wells and by desalination methods.

During the spring of 1972, the students completed work on the project by placing permanent bench marks at each of their field sites and by investigating the ecology of sphagnum moss. Results of the moss studies are presently being analyzed, after which the information will be submitted for publication in two journals.

Faculty Advisor: David J. Kinsman, Department of Geological and Geophysical Sciences

NORMS FOR URBAN BLACK CHILDREN ON THE BERRY DEVELOPMENTAL TEST OF VISUAL MOTOR INTEGRATION

Andrea Padlowski and Elizabeth Davidson (Graduate Students)
Jersey City State College

The Developmental Test of Visual Motor Integration (VMI) is a widely used group test for predicting and preventing learning disabilities. Because the standardizations for the test were obtained from middle class subjects, the VMI may be of little value for inner-city school children. Screening this population with the VMI does not discriminate between children with potential learning problems and children who would perform well in the classroom, nor do these norms indicate expected performance for inner-city black children.

In order to develop norms applicable to these students, the researchers tested 647 black children from a Jersey City school located in a low socio-economic area. The

children were in grades kindergarten through third and between the ages of 5.0 years and 10.6 years. In addition to administering the VMI, an intelligence test was included in order to see if there was a correlation between the intelligence quotient and the VMI developmental ages obtained.

The findings of the study indicate that the established norms of the VMI are not applicable to this population. When using these norms, most of the children scored below the age expectancy, implying that they are retarded in this area of growth. The developmental lag apparent in kindergarten does decrease significantly as the child progresses through school. This finding suggests that the children are lacking in perceptual-motor development but that these deficits are not permanent and are being remediated through proper exposure.

Faculty Advisor: Dr. Ann M. Walsh, Psychology Department

FUNDING OF DAY CARE CENTERS

Joan Lyons (Undergraduate Student)
Rutgers University, The State University

Through preliminary research and work on day care center planning committees, the researcher observed that the resolution of funding problems usually determines whether a planned center becomes operative and that economic factors significantly influence continued operations.

She, therefore, proposed to analyze the financial records of licensed centers in New Jersey, including those no longer functioning, to determine if the success of centers correlates with the distribution of financial support and if the dollars spent per child are directly related to the success of the center, measured by its continued operation. Although important parts of the originally planned research could not be carried out because of the incompleteness of records, the study yielded interesting information.

The final sampling of centers consisted of 88 day care facilities located throughout the state. Of these, 76 participated in the study while 12 did not. All information was collected from interviews with the directors. The information gathered was generally restricted to the period during which the present director had been affiliated with the center.

Of the centers participating in the study, 42% are profit-oriented, whereas 58% are run on a non-profit basis. Eight percent of the centers charge no fee; 47% charge a

standard fee, and 45% base their fee on family size and income.

An analysis of data shows that a strong relationship exists between the funds expended in medical and social areas and the availability of funds from the Department of Health, Education and Welfare. There is also a correlation in this area, but to a lesser degree, with funds available from school systems. Funds used for administrative, plant, meal and educational purposes relate positively to average daily attendance.

No strong relationship could be found between dollars available per child and various sources of funds. However, when certain other variables are excluded the order in which funds spent per child are affected by the sources of funding is as follows: (1) Department of Health, Education and Welfare, (2) parent organizations, (3) gifts, (4) fees, (5) Department of Agriculture, (6) United Fund, (7) churches, (8) miscellaneous sources, (9) Department of Labor, (10) Department of Housing and Urban Development.

All attempts to demonstrate a relationship between the cost per child and other factors were unsuccessful. The presence or absence of a director did not affect this relationship nor did the number of years which a center had been operating.

Two additional interesting observations resulted from the study. First, of all the possible sources of funds, it appears that relatively few are utilized. Second, although 42% of the centers are profit-oriented, only 20% of the centers are funded entirely by fees.

Faculty Advisor: Mary Taylor, Office of the Dean

ENVIRONMENTAL IMPLICATIONS OF FULL REPLACEMENT OF DETERGENT PHOSPHATE BY NTA IN THE PASSAIC RIVER

Nancy Cosentino (Undergraduate Student)
Saint Peter's College

Nitrilotriacetic acid (NTA) has received wide acceptance in Europe as a substitute for detergent phosphate but has been banned in the United States on the basis of reports relating to human toxicity. A number of studies show effective biodegradation of NTA during sewerage treatment; however, it is believed that much sewage is deposited into rivers without receiving effective sewerage treatment.

The purpose of this study was to determine if NTA is biodegraded in river water

so as to avoid accumulation to levels that would create toxicity problems.

Initial studies measuring biodegradation of NTA by monitoring changes in the population of microbial flora from the Passaic River were unsuccessful. Very effective degradation was achieved, however, employing two-week acclimated sewage samples from the Jersey City Sewage Treatment Plant. The organisms degrading NTA were isolated and appeared to be of a homogeneous nature.

The researcher concluded from her studies that with acclimatization, which is not unrealistic ecologically, biodegradation would occur. On the other hand, if high concentrations of NTA were to be used in washing machines, plumbing systems and septic tanks where biodegradation is limited, the concentrations of toxic metals, such as mercury, lead, and zinc, released from NTA would reach levels presenting a danger to fish and man.

It is, therefore, recommended that any action taken to eliminate detergent phosphates wait until a phosphate replacement other than NTA is developed since NTA may cause pollution problems when used in a non-ecological system. In addition, the present Federal Government position on NTA and soap additives in general must be expanded beyond the "human toxicity view" to include consideration of all environmental implications.

Faculty Advisor: Dr. Robert P. Kelly, Department of Biology

AUTOMATED TEACHING TECHNIQUES, WITH EMPHASIS ON TEACHING ENGLISH COMPOSITION AT THE COLLEGE LEVEL

Joseph Graff, Christine Ball, Neil Figurelli, Devora McIntosh, and Arlette Naspinski
(Undergraduate Students)
Montclair State College

At the present time there exists no source which brings together the information now available on audio-visual materials and techniques. The students, therefore, proposed to research the audio-visual English materials being used successfully in colleges and businesses to teach English composition and to assemble their findings into an audio-visual package.

As their research progressed, they found that much A-V equipment is available but that few commercially produced materials for college students exist for use with the equipment. However, many instructors are producing their own materials which can be

just as effective as the commercial products.

The findings of the study have been published in a 39-page book. The information includes a listing of books dealing with the formation, equipping, organizing, and operating of automated teaching systems and a listing of bibliographic sources for films, recordings, tapes, and video-tapes. A third section lists available directories which give complete information concerning equipment.

Also included is a survey of the types of equipment which can be used for individualized instruction, including cassettes, filmstrip and viewer hardware, video equipment, and sight and sound machines. Of particular interest is the Dial-Access Information Retrieval system in operation at Jersey City State College. This system has stations located throughout the college where students can dial the taped lesson they desire and listen and observe the material at the station.

The last section of the book describes some of the programs in New Jersey where Audio-Visual materials are now being used. At Montclair State College a "Composition and Communication Skills" course has been quite successful. The entire curriculum at Brookdale Community College is based on individualized instruction and relies heavily on automated techniques. Industry is also using these materials to train employees. The Prudential Insurance Co. of America in Newark is finding their A-V instruction program very successful for teaching English skills to minority employees.

As a result of the research, the researchers are confident that audio-visual teaching can decrease the burden on both students and teachers, can readily accommodate individual differences, and can particularly be of help to disadvantaged students who come from an oral rather than a literary background.

Faculty Advisor: Dr. Theodore Price, Department of English

NEWARK STATE COLLEGE AND COMMUNITY SERVICE

Peter Zanais (Undergraduate Student)
Newark State College

The goal of most modern educators is to make the educational process an integral part of the "real world". This researcher, who has been actively working at Newark State College to expand joint college and community projects, spent the academic year studying avenues whereby service programs could be improved and expanded. His findings and

recommendations have been printed and distributed to persons who may benefit from the data.

To obtain needed information, a number of approaches were used including advertising, questionnaires and interviews with administration, faculty, students, and the community, and the collection of data describing programs in existence elsewhere.

There are presently various college-sponsored community service programs at the college in the fields of education, culture, fund raising, politics, social welfare, health, and public information, and additional projects are scheduled to begin in the near future. These programs are sponsored by the administration, faculty, and students. However, there is a need for further expansion in all areas in order to fulfill the needs of the cities of Newark and Elizabeth.

Everyone contacted had ideas for a wide variety of new programs. The major areas of concern were cooperative education, experiential learning, and the granting of academic credit for field work. The need for a center to coordinate and direct experiential learning was seen as very great, whereas the general educational requirements of the school were viewed as a handicap by most.

The research showed that many persons in the community are unaware of what the college is doing and some are disappointed with the extent of the programs or with the means by which they are conducted. But many persons are interested in and feel a need for joint programs.

It was found that at the present time the Division of College Development and the Student Activities Office are the means whereby programs can most effectively be instituted and coordinated.

The biggest problems at present are a lack of communication at all levels, and disinterest and a general feeling of apathy among the students. Other problem areas include the need for long-term programs and the granting of academic credit or some type of remuneration for all types of work.

From the data gathered, the following recommendations emerged: creation of a community relations and service position in the Institution of Community Services, better public relations and information mechanisms, development of an independent study center, granting of academic credit for field work, greater emphasis by faculty on field work options, and meetings between members of the college and the community to plan and develop programs.

In addition to this project, the researcher continued his active participation in numerous service projects and wrote proposals for the initiation of an 18 month Graduate Study Fellowship in Cooperative Education and for a program to provide field experience

for first and second year students under the direction of a Coordinator of Experiential Learning.

Faculty Advisor: Diebold Foster, Director of College Development

THE EFFECTS OF A LITERATURE-BASED CONCEPT DEVELOPMENT PROGRAM ON THE ACQUISITION OF BASIC CONCEPTS IN DISADVANTAGED, PRESCHOOL CHILDREN

Nina Molee, and Mary Jo Paglia (Undergraduate Students)
Newark State College

Children from low socio-economic backgrounds usually lack the home life which provides the cultural experiences and verbal interaction necessary to prepare them to gain the maximum benefit from the highly verbal instructional base of the school. In order to lessen this problem, the researchers formulated a literature-based program, emphasizing related experiences with concrete materials, designed to foster concept development in young children. The program was then tested with disadvantaged kindergarten students. Because normal classroom instruction includes concept development, the experiment was designed not to test the effect of concept development versus no concept development, but rather development of the skill through planned rather than unplanned activity.

The study was conducted from October 4 to December 17, 1971 in two inner-city, preschool classrooms in northern New Jersey. The subjects were 38 children from low socio-economic families. Half of the students in each class received the experimental treatment while the other half served as controls. The instructors were two student teachers from Newark State College. The lesson plans consisted of literature selections, suggested materials and instructional procedures for developing a variety of concepts.

Each day the experimental group was exposed to a planned program of concept development. The teachers read aloud from selected picture books. Brief discussions and activities using teacher-made materials, focusing on a particular concept, followed. The control group carried on their usual routine with no special emphasis on concept development.

All students were tested prior to and after the instructional period by the Boehm Test of Basic Concepts. An analysis of test results showed no statistical difference between scores of the experimental and control groups, although the experimental group tested better than the control group. Because the scores of one experimental group were so superior to

those of the other experimental group, the researchers consider teacher effectiveness to be the primary cause for the lack of statistical difference.

Faculty Advisor: Dr. Dorothy S. Strickland, Early Childhood Department
