

Student development and satisfaction
with college among participants
and nonparticipants in a campus
service program

by

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CHAPTER I. INTRODUCTION

Background for Study

Service-related learning has been a part of American higher education since colonial days. Early colleges were established to train ministers, teachers, and lawyers, while other careers, including medicine, were learned by apprenticeships (Ellis & Noyes, 1978). Future teachers often worked as tutors to finance their college education. During the mid-1800s, students were active in the temperance crusade and antislavery movements in the North. After the Civil War, hundreds of Northern college students went South to educate freed slaves (Ellis & Noyes, 1978).

The land-grant college movement in the late 1800s created a need for more college buildings. Students helped in the building and maintenance of the colleges that they were attending in return for free tuition and board. The educational advantages attributed to using student labor were: Manual work provided an opportunity for students to use principles learned in the classroom, and also taught habits of industry, orderliness, and dependability (Brubacher & Rudy, 1976). Simultaneously, education became more practical. Medical students worked in hospitals, and practice teaching and field work were common. In the early 1900s, organizations such as the YWCA and YMCA encouraged student members to help others, and in rural areas, agricultural organizations were often service oriented (Ellis & Noyes, 1978).

The world wars reduced the number of students on the campuses, but

those remaining collegians were active volunteers in the war effort. The 1960s were characterized by student activism, as students became interested in the social issues of the day and supported causes that were congruous with their thinking (Brubacher & Rudy, 1976).

By 1975, a marked change in mood had taken place on college campuses. Levine (1980) described the college student of the mid-1970s as being concerned with individual rights rather than having concern for justice or social issues. Students of the mid-1970s were portrayed by Levine as being competitive, materialistic, and cynical about society and its institutions. The "me first" philosophy was prevalent on college campuses. Surveys indicated the principal reason given by students for attending college was "to get a better job," rather than "to learn to get along with people" which had been the most essential reason for attendance a decade earlier. Levine stated that the more visible me-orientation had masked the altruistic spirit, which was still present on the campus, but in a lesser degree than previously.

Recent articles (Kozol, 1982; Meyer, 1985a, 1985b) have implied an increased student interest in participation in service activities by college students in the 1980s. Meyer (1985b) reported that student volunteering was increasing at a time when many national surveys have stated that students are becoming increasingly career-oriented and self-centered. Many students consider service experience to be valuable for developing career interests, according to Meyer.

Goals and Values of Higher Education

From an educational viewpoint, the rationale for participation in student activities and service projects has traditionally been that the extracurriculum complements the academic instruction of the college. The values placed on the importance of the activity program depend in part on the goals or purposes that one perceives for higher education. The academic position focuses on intellectual competence and stresses that the purpose of higher education is to transmit formal knowledge. From the academic perspective, student activities may be viewed as a threat to the academic mission of the college and are seen as unimportant to the primary purpose of the institution, that is, the pursuit of academic excellence.

The developmental position stresses the function of providing experiences that further the affective as well as the cognitive development (i.e., total development) of college students. Sanford (1962) stated that student development should be a primary goal of higher education. In the past two decades, student affairs professionals have supported the position that participation in student activities enhances the total development of students (Miller & Jones, 1981).

The concept of student development is often vague even to student service professionals in higher education. There are numerous developmental theories, each with goals to be achieved. Difficulties arise in methods of facilitating the achievement of these goals in college students, and in how to measure student achievement of the goals

advanced by the various developmental theories. As a result, few research studies have attempted to measure the relationship between student behaviors and service activity participation.

Previous Research

The majority of literature regarding college student participation in service projects has been descriptive of the programs involved, rather than studying changes in students who provide the service. Few research studies have focused on the relationship between participation in student activities while in college and post-college behaviors. If one agrees that the ultimate worth of an educational program is the permanence of its effects, the need for longitudinal studies is evident. The span of time required to conduct longitudinal investigations has apparently been a detriment to conducting these studies. Researchers have yet to study the relationship between college activity participation and long-term affective changes such as self-acceptance, self-concept, tolerance, or feelings of responsibility.

In the few studies that have made comparisons between participants and nonparticipants, researchers have often assumed population equivalence prior to activity participation. Using this research model, two groups of students (activity participants and nonparticipants) are compared on a given trait, and differences are then attributed to activity participation. The two groups may have differed in the dependent characteristic prior to participation, and the differences measured may simply reflect preexisting population differences. There

remains a noticeable lack of empirical research of adequate design to assess the relationship between changes in students and participation in college service-programs.

This study was conducted as an attempt to compare specific changes in participants and nonparticipants in a campus service activity. Since research in an intact setting precludes the possibility of random assignment to conditions, this study utilized a quasi-experimental design in which threats to internal validity were controlled as much as was reasonably possible.

Statement of the Problem

According to Baird (1982) and Rich (1973) if participation in a service program by college students is to be worthwhile it should promote maturity and responsibility in participants, prepare students to cope with the reality of the adult world, offer active learning experiences, present a challenge of working with others in significant activities, and should contribute to a permanent lifestyle of continued personal development and concern for others. Assessments of student change as a result of participating in a service project are often made in terms of skills that are readily visible and easily measured. Traits such as the development of autonomy, purpose, and interpersonal relationships and satisfaction with college are more difficult to assess in participants. There is, however, a need to evaluate the effects of participating in a service program in terms of student development, attitudes toward self and others, and satisfaction with the overall

college experience.

Statement of Purpose

The principal purpose of this study was to examine the relationship between participating in the Cyclone Aides Program at Iowa State University and (a) student development, as measured by the Student Developmental Task Inventory (Winston, Miller, & Prince, 1979), and (b) overall student satisfaction with college as measured by an instrument constructed to measure student satisfaction with Iowa State University. The study sought to determine whether differences in patterns of student development and college satisfaction differed between participants and nonparticipants in a campus service project.

An additional purpose was to propose an easy to use method for measuring the impact of participation in extracurricular activities by college students.

Definition of Terms

The terms used in this study may be defined as follows:

Academic program: formal course structure of an educational institution.

College environment: the combination of people, facilities, and policies that make up the college community.

Extracurriculum: any out-of-class program or organization in which students may participate.

Higher education: an organized post secondary learning situation.

Service activity or program: an out-of-class activity in which participants act to aid others or to improve their environment.

Service-learning program: an out-of-class experience that combines service with specific learning objectives.

Student: an individual enrolled in a formal educational experience.

Student development (total development): an ambiguous term, used in this study to indicate changes in cognitive, affective, and social abilities that take place in students during the college years.

Student satisfaction: contentment with the total college experience.

Variables

Independent Variable

The independent variable was participation in the Cyclone Aides training program and performing the duties of Cyclone Aides during the Summer Orientation Program versus nonparticipation in the Cyclone Aides Program.

Cyclone Aides are students selected each year at Iowa State University by an application-interview procedure to work in the orientation program. The experimental group consisted of the 22 students who were selected as the 1986 Cyclone Aides. Twenty students who were in the final interview process, but who were not selected as Cyclone Aides, comprised the control (nonparticipation) group. Thus, it was anticipated that the experimental and control groups would initially

be as similar in the characteristics being studied as could reasonably be achieved in two intact groups of college students.

Dependent Variables

The dependent variables were: (a) student development as measured by the Student Developmental Task Inventory, Revised, Second Edition (Winston et al., 1979) and (b) overall satisfaction with the college experience at Iowa State University, as measured by an instrument designed for this study, hereafter referred to as the College Satisfaction Questionnaire.

Research Hypothesis and Rationale

Hypothesis One: Students who participate in the Cyclone Aides program will demonstrate a statistically significant ($p < .05$) greater increase in the development of the personal characteristics of autonomy, purpose, and mature interpersonal relationships than the control group.

Rationale: Service projects should promote maturity, responsibility, and a sense of purpose in participants, according to Rich (1973). Chickering's (1969) theory of student development suggested that college students develop in integrity, purpose, and identity as a result of participation in service projects.

Hypothesis Two: Students who participate in the Cyclone Aides program will have a statistically significant ($p < .05$) greater increase in satisfaction with their overall college experience than the control group.

Rationale: Astin (1977) stated that involvement in campus activities increases satisfaction with the college experience because students feel closer to the college environment.

Statement of Assumptions

This study assumed that:

1. Intervening variables were relatively similar for students in the experimental and control groups. No attempt was made to control for possible extraneous variables such as place of residence, academic curriculum, number of hours worked, or participation in other activities.

2. The Cyclone Aides program provided experiences that result in development of personal characteristics that were measured by the assessment instruments used in the study.

3. Differences in gain scores from preparticipation to postparticipation between the experimental and control groups could be attributed to participation by the experimental group in the Cyclone Aides program.

Limitations of the Study

Data for this study were collected at one large midwestern public university. Astin (1977) stated that institutional size has an impact on the relationship between involvement in the college environment and personal development. The results are therefore not necessarily generalizable to smaller colleges.

The qualifications for Cyclone Aides and criteria used in the selection process would tend to create a select group of students who score higher in personal growth and development than is representative of undergraduate students on the Iowa State University campus. The fact that students in both groups have applied to represent the university to new students during orientation would suggest a level of satisfaction higher than might be expected of the undergraduate population. Starting with higher scores on the assessment instruments would tend to limit the possible range of gain scores for these students.

Since the training program for Cyclone Aides was intensive, the results of this study cannot be generalized to all campus service organizations. Cyclone Aides participated in 60-70 hours of training during the spring semester, and between May 19, 1986 and June 27, 1986 were employed full time by the university to perform the duties of Cyclone Aides. Each aide spent approximately 350 hours in this program over a five month period of time. This is not typical of campus service projects. Therefore, results obtained in this study cannot be generalized to service programs where participants spend far fewer hours in training and in performing the service.

Due to the lack of control over possible intervening variables it cannot be concluded that all of the differences in postparticipation scores between the experimental and control groups were caused solely from participation as Cyclone Aides.

Posttesting of the control group took place six weeks before the experimental group was posttested, providing more time for changes to

occur in the Cyclone Aides group.

Significance of the Study

This study is viewed as a preliminary attempt to assess the relationship between student changes and participation in a campus service activity. A significant increase in student development and satisfaction scores by the experimental group would suggest that students be used in similar programs. It is known that new students and their parents benefit from services provided by Cyclone Aides; and that the university benefits from being well represented. It is important to determine changes that occur in the students providing the service.

Finding increased developmental and satisfaction scores by the experimental group would suggest that activities play an important role in the total educational program of colleges. Such findings could suggest that an increased emphasis be placed on student activity participation.

In addition, this study may provide guidelines for other researchers and professionals in the student affairs field to use in conducting further studies on the effects of participation in student activities.

CHAPTER II. REVIEW OF RELATED LITERATURE

Introduction

A selected review of the literature by an ERIC computer search using relevant descriptors indicated that few studies have addressed the relationship between participation in service activities and changes in college students. The main focus of published literature on this subject has been on the accomplishments and effectiveness of using college students in various service projects.

The first part of this chapter summarizes theories of college student development that are relevant to the present study. The limited research on college student satisfaction is then presented.

Studies that are descriptive of service programs provided by college students are reviewed in the second part of the chapter. The purpose of the section is to provide a background of the most prevalent type of published articles on the subject of service activities.

The last portion of this chapter is a review of empirical research studies. Articles focusing on characteristics of college student volunteers are reviewed as well as articles demonstrating changes in students that are related to college experiences.

College Student Development

The application of human development theory to college students has been defined as college student development. Students change in numerous ways from their freshman to senior year in college.

Intellectual development takes place in the classroom where students learn factual knowledge, how to solve problems, ways to acquire information and evaluate it, and how to communicate more efficiently. Changes also occur in students' personal characteristics such as values, attitudes, goals, openness to emotions, interpersonal relationships, and lifestyles. Student development addresses the latter set of changes, which, to developmental theorists are equally as important as intellectual development. Both cognitive and affective development are essential to the educational mission of colleges, according to Prince and Miller (1974).

Intellectual growth of college students is carefully planned through the academic curriculum. The more recent concept of development of affective characteristics as well as the cognitive aspects of students has created an emphasis on student personnel services in higher education. Professionals in this field have been presented with the task of influencing the campus environment in ways which will promote human growth. Theorists agree that certain changes should and do take place in students during their college years. Practitioners are continually searching for intervention strategies to encourage development in what theorists define as positive directions.

Knefelkamp, Widick, and Parker (1978) stated that the creation of a developmental environment requires a theoretical knowledge base which describes:

1. Who and where the college student is developmentally.
2. How development occurs.

3. How specific college environments can influence student development.

4. Toward what ends should development in college be directed.

Numerous theories have been proposed to explain how development occurs. Knefelkamp et al. (1978) organized the various theories into five clusters: (a) psychosocial theories, (b) cognitive developmental theories, (c) maturity models, (d) typology models, and (e) person-environment interaction models. The cognitive and psychosocial theories have the greatest relevance to the present study, and will be described briefly.

Cognitive Development Theories

Cognitive theorists view development as a sequence of irreversible stages involving changes in the way students see and reason with the world. How students think about issues is important in determining their developmental stage. The process of change occurs when individuals encounter problems which cause cognitive conflicts that demand a change to a new way of thinking. Theorists included in this group are: Kohlberg (1972), Loevinger (1976), and Perry (1970).

Psychosocial Theories

The life cycle is viewed by psychosocial theorists as a series of stages during which certain feelings, concerns, and behaviors must be mastered to successfully complete a given stage. Tasks at each stage include: learning certain attitudes, formation of certain facets about one's self, and learning specific skills. Included in this group are:

Sanford (1962), Erickson (1963), Havighurst (1972), and Chickering (1969). Sanford argued that college should be a developmental community in which students encounter challenges and supports. The challenge could be a service project which presents an unfamiliar and confusing environment to the student, who needs the support of the college to maintain equilibrium.

Chickering (1969) presented a model of college student development and outlined sources of impact in the college environment. The increasing complexity of our time has created a new developmental period in the life span, according to Chickering. The years from 18 to 25 must be considered as a separate developmental stage because the tasks are different from those of adolescence and adulthood. Chickering suggested seven vectors or dimensions of development involved in the general task of identity resolution by college students. These seven developmental vectors are:

1. Achieving competence. Competence involves the development of intellectual competence, physical and manual skills, social competence, and a sense of confidence to achieve what one sets out to do.
2. Managing emotions. Young adults must be aware of their feelings and learn to place more trust in them.
3. Becoming autonomous. Mature independence requires both emotional and instrumental independence and the recognition of one's interdependencies. Interdependence involves recognizing that one cannot receive benefits from a social structure without contributing to it.
4. Establishing identity. Identity is confidence in the ability

to integrate the many dimensions of one's experience and to form a realistic, stable, self-image including coming to terms with one's physical and sexual self.

5. Freeing interpersonal relationships. Relationships should be characterized by greater trust, increased tolerance and acceptance of differences between individuals as well as an increased capacity for mature and intimate relationships.

6. Clarifying purposes. The development of purpose involves assessment and clarification of educational and career options, interests, and lifestyle preference.

7. Developing integrity. Integrity is achieved by defining a set of values to guide one's actions. Development of integrity involves the humanizing of values from a rigid set of rules to the belief in the relativity of values. There is an increased awareness of the relationship between values held and behavioral patterns.

Chickering's (1969) vectors are general concepts, and consequently practitioners have had difficulty designing developmental programs around the vectors. An additional problem has been the expression of the seven vectors in concrete behavioral and attitudinal terms.

Winston, Miller, and Prince (1979) constructed the Student Developmental Task Inventory (SDTI) to translate Chickering's vector concepts into more specific behavioral statements. The SDTI, which will be described in detail in Chapter III, defines development along three main vectors: autonomy, interpersonal relationships, and purpose.

Chickering (1969) also identified six components of the college

environment that influence student development along the vectors.

Environmental conditions that Chickering suggested make a difference in student development are:

1. Clarity of objectives and internal consistency. College impact is greater at institutions that have a clear and consistent set of objectives. Integration and implementation of the objectives in policies, programs, and practices of the college creates an environment conducive to development.

2. Institutional size. College impact is greater at relatively small liberal arts colleges.

3. Faculty and administration. Frequent and friendly interaction between faculty and students facilitates development.

4. Student culture. Values of the student culture define the relationship between students and the institution, and therefore moderate all environmental conditions.

5. Residence hall arrangements. Living with students from diverse backgrounds in an environment where opportunities for interchange are encouraged fosters development along the vectors of freeing interpersonal relationships, competence, purpose, and integrity. Increased tolerance for individuals of differing backgrounds is one result of living in an effective residence hall arrangement.

6. Curriculum, teaching, and evaluation. A flexible curriculum with ample opportunities for group discussion enhances student development. A curriculum that would incorporate experiential learning into the academic program was recommended by the author. Participation

in varied experiences in an informal setting enhances development along all of Chickering's vectors.

College Student Satisfaction

Less interest has been shown in the study of student satisfaction with the collegiate environment. Theorists would agree that level of student satisfaction with the college experience among participants of student activities is an important variable in the overall effects that participation may have on students, and yet this variable has generally been ignored. The relationship between development and satisfaction is not clear. Does increasing the level of satisfaction encourage student development, or does promoting student development lead to higher levels of satisfaction? Does satisfaction precede development, or vice versa? It seems reasonable to assume that involvement in an activity that does not generate a certain degree of satisfaction with the collegiate experience will not promote positive personal characteristics.

Astin (1977) stated that the most detailed information about student satisfaction was from the 1969-1970 ACE-Carnegie follow-up of the 1966 freshmen. Students showed a moderate degree of satisfaction with the overall college experience and were most satisfied with the college's academic reputation and with friendships with other students. A follow-up of the 1968 freshmen showed identical results to the earlier study, indicating that student satisfaction with the undergraduate experience remained relatively stable.

As part of a ten-year study of how college affects students, Astin

(1977) compared various institutional characteristics that affected student satisfaction. Involvement in certain activities was associated with increased satisfaction in some areas of college life. Students who were in student government were more satisfied with student friendships, but were less satisfied with the intellectual environment of their institution. An unanswered question in this study was whether involvement in student government increased dissatisfaction or whether dissatisfied students became involved in student government. Participation in athletic activities produced high satisfaction, especially with student friendships. Astin (1977) concluded, "The student's general satisfaction with the undergraduate experience can be enhanced by more direct involvement in various aspects of the college environment" (p. 187).

Hallenbeck (1978) sought to identify sources of satisfaction in a random sample of 465 Kent State University students. The assessment instrument was the College Student Satisfaction Questionnaire. The only significant difference on total satisfaction was that nontraditional students were more satisfied than traditional students. Factors that were not related to satisfaction included: sex, college, residence, ACT score, participation in campus organizations, and ethnic background. These results were contrary to the researcher's expectations. Hallenbeck (1978) suggested that student affairs programs on the Kent State campus might not have been fulfilling student needs.

Student satisfaction has often been measured in terms of satisfaction with the academic program. Schmidt and Sedlacek (1972)

measured satisfaction among a random sample of 540 University of Maryland undergraduates. The University Student Census was used to assess satisfaction. Students who had decided on a major before entering college were the most satisfied with their academic experience, whereas higher levels of dissatisfaction were experienced by students who were undecided about career plans and had not decided upon a major. These results would indicate that activities which help students develop identity with an occupation and make career choices might increase levels of student satisfaction.

An interesting finding by Schmidt and Sedlacek (1972) was that students who dated more often felt more dissatisfaction. The authors speculated that more active students (including socially active) tended to be more critical of the university and therefore were more dissatisfied. However, this hypothesis was not supported by the data available in their study.

Assessment of College Student Satisfaction

Moore (1982) reviewed the instruments and concepts that were used in measuring college student satisfaction. The basic approaches used to assess student satisfaction were placed in three categories:

1. Behavioral instruments measured student behaviors such as library usage, or number of participants in activities. Satisfaction was determined by the frequency of certain behaviors. This approach has been used sparingly since the results are often unclear. An example was the College Student Experience (Pace, 1979).

2. Objective instruments described factual information about the college environment such as personal characteristics of students and faculty, institution size, and intelligence level of the student body. An example was the Environment Assessment Technique (Astin & Holland, 1961).

3. Perceptual instruments measured student opinions about campus characteristics. Examples were the College and University Environment Scales (Pace, 1969) and the College Student Questionnaire (Peterson, 1968).

Moore (1982) designed an assessment instrument to measure student satisfaction with the environment at Iowa State University at the time the university was changing from a quarter to a semester system. Moore used a predominantly perceptual approach in measuring student satisfaction due to the clarity of the results obtained by this approach.

An original questionnaire was constructed because Moore considered existing instruments to be either too general or outdated. Baird (1976) stated that a locally devised questionnaire was usually preferable to a broad, general instrument. According to Aulepp and Delworth (1976), locally developed instruments have an additional advantage of having a higher degree of acceptance with respondents.

Moore's instrument consisted of both specific and general items. Following are examples of each:

Specific: My department club is very active.

General: I am glad that I came to Iowa State University.

The response levels were: Strongly Agree, 5; Agree, 4; Neither Agree or Disagree, 3; Disagree, 2; and Strongly Disagree, 1.

A modification of Moore's instrument was used in the present study to measure student satisfaction.

Descriptive Studies

Published research articles concerning college student participation in service programs can be placed in two categories: descriptive studies and empirical research studies. Descriptive studies report various activities and projects performed by college students. The principal purpose of these articles is to describe effective college programs. There is generally no evaluation of the effects on the students providing the services. The published literature on the subject of activity participation is predominantly of this type.

Curricular Approaches to Service Projects

The concept of "learning by doing" combines academic learning with participation in service programs. In American society the adolescent and young adult years are generally spent in some form of learning experience. During this time students often remain relatively isolated from and make little meaningful contribution to adult society (Grabe, 1976). Supporters of service-learning education maintain that students can become more integrated into the real world by taking part in service activities.

Several theorists have suggested increasing opportunities for

service-learning education in the college curriculum. Levine (1980) proposed a four year undergraduate program that focused on social-problem solving as a means of combating "meism" in college students. Students would major in a problem area, such as health, the cities, hunger, or the environment, and would minor in a discipline such as economics, sociology, biology, art or English.

Levine (1980) stated that public service by youth was a critical need. "This nation must move toward universal service for young people 16 to 24 years of age as a partial remedy to these problems," according to Levine (p. 137). The recommendation continued that young people should have the opportunity to spend a year or more helping others and providing community service. College credit for this service would provide an incentive for student participation. This program would be a step away from the sense of entitlement that has been prevalent among college students and would place the emphasis on responsibility to others, Levine stated.

Kohlberg (1975) endorsed the involvement of students in campus life programs and activities where students must make a decision, act upon their decision, and later see its consequences. Moral development is more likely to occur when students are exposed to different levels of judgment in service programs and then have the opportunity to discuss various moral considerations in the academic setting, according to Kohlberg.

Dickson (1973, 1979) also advocated the curricular approach as a means of promoting moral education. According to Dickson, most

educational institutions assume that intellectual learning takes place in the lecture room, the library or laboratory and that physical stamina is achieved in the gymnasium. However, few institutions identify where moral education takes place. The three separate entities could be combined so that existing subject matter would be related to solving human problems. Dickson's views agreed with the philosophy that education does not simply mean teaching students what they do not know, it means teaching them to behave as they do not behave.

The literature contains numerous examples of specific curricular approaches to service learning. Engs (1974) described a program at Indiana University where students in a community health course were required to volunteer at a health related community agency for two hours per week during one semester. A requirement was that students keep a diary in which they expressed their feelings about the agency, the people they worked with, and their own behavior. The author stated that this experience helped students become more aware of the role and function of a particular health agency, and also helped students in clarifying their values and feelings about a disease or health condition.

The University of West Florida has developed a program in which students volunteer for credit while serving the agencies and schools of the community (Redfering & Biasco, 1982). Students were expected to volunteer nine hours of service per week for ten weeks to earn three hours of credit, and were also required to meet periodically with the course coordinator to discuss their work in the agencies. Grades of

"pass" or "fail" were used to reduce unnecessary student anxiety about a course grade. Students indicated the program was valuable in providing real world experiences in professions related to their majors, and that they felt better about themselves as a result of volunteering their time and energy in helping others. There were no other evaluations of the program.

Hardin (1982) described the Youth Educational Services (Y.E.S.) project at Humboldt State University in Arcata, California. The aspects of Y.E.S. that differentiated it from other service-learning projects were that the various programs were entirely student initiated and student directed. Funding of the program was primarily from student activity fees. Outcomes that were important to students included: (a) Volunteers could see the consequences of their actions when real people depended on them, and (b) Students recognized the interdependence of working with people whose lives were different from their own.

In order to improve the health of students, the University of California at Irvine established student organized courses in health education (Russell & Trevor, 1978). Student organized classes included: Health, The Biology of Cancer, The Biology of Heart Disease, and Biomedical Ethics. Students were responsible for selecting the course topic, organizing lectures, and finding a faculty member to work with on such aspects as examination preparation, and securing rooms and audio visual equipment.

The authors stated that this program would serve as a model for other institutions to develop student-produced, health-related courses.

Even though the concept of wellness has expanded since 1978, there has not been an abundance of student organized courses in the health field. To date, most college health and wellness programs are still extracurricular.

Baird (1982) discussed the expansion of service-learning during the past 20 years. As director of the National Center for Service-Learning, Baird has witnessed the expansion of the role of service-learning from bettering the life of the poor to also fostering growth and development in those who provide service to others.

Baird (1982) summarized various concepts and assets of service-learning. These included:

1. Service-learning achieves its full value only if it leads to an enduring lifestyle of continued personal development and concern for others.
2. By building opportunities for service into all levels of education, community service programs provide for vital growth.
3. An effective service-learning program should have a means of evaluation and students should be able to assess their own progress.
4. Only reality can prepare students to cope sensitively and compassionately with the real world.
5. Service-learning is of value in developing insight, skill, and commitment.
6. Service-learning has great impact on student development when students of similar backgrounds live in a closed environment.
7. From community service, students develop the social skills

necessary to be effective in working with others.

8. Students learn from experience, a skill they can use throughout their lives.

Community-Based Service Projects

The articles reviewed in this section describe programs where college students provided community service without receiving academic credit. Proponents of college student participation in community based service projects have views similar to supporters of curriculum based service programs. Kozol (1982) stated that youth has been defined as a preparation for life, not as a portion of it. The author continued that students through the college years have been put on a holding pattern, where their existence consists of rote drill and preparation for the rest of their lives. Kozol argued that it was time to change the passive, consumer-oriented existence of young people to more active, productive life. Using secondary and college students in a fight against illiteracy was recommended by Kozol as a means of creating an active program for youth.

Brass (1969) described a community-involvement center on the campus of California State College at Los Angeles. Each student volunteer participated in a program related to that individual's interests, skills, or educational major. This program was successful even though all students at the college commuted to classes, and a large portion attended only late afternoon and evening classes due to working full-time. Brass attributed the success of this program to involving

students in activities within their area of interest.

A college service program where volunteers were limited to certain majors, and then carefully screened before being accepted, was the subject of an article by Rapp and Primo (1974). Students majoring in education, psychology, and sociology were used in a program which focused on the social and physical behaviors of hospitalized adolescents with emotional handicaps. College students were used as the volunteers for this program because they were assumed to have enough maturity to gain the respect of the adolescents, and yet were close enough in age to identify with their developmental tasks and problems. The only evaluation of the program was that several adolescents had made changes in their lives.

Wells (1974) discussed the effectiveness of a community service project that was a cooperative effort between a four-year college and a community college. The four-year college did not have enough students (enrollment less than 300) to supply sufficient volunteers to maintain a quality program and the majority of the community college students were from lower income families who needed financial assistance to attend college. The project was federally funded as part of the ACTION program and had the unique feature of each "volunteer" receiving a stipend of \$200 per month.

Duncan (1971) described three separate service projects carried out by college students. One example was at Brigham Young University where students annually recruited 10,000 volunteers to help clean up cities. In 1971, nine communities in the Utah Valley were renovated by college

students working together with townspeople. The outcomes (besides cleaner cities) of this project were: (a) Students felt good about themselves, (2) Community relations with the university were improved, and (c) Students with different backgrounds worked together and became friends. The improvement in public relations was important at this time, as the overall purpose of higher education was being questioned during the early 1970s.

Although these studies have contributed a large amount of information about successful service projects performed by college students, no evaluation of the relationship between participation in the service activities and changes in the students performing the services was made. The major emphasis was on what can be accomplished or the beneficial effects of the activity on those receiving the service.

Participation in Student Personnel Services

The literature review indicated that students have been used in a variety of different programs in student personnel service. In some instances the students were paid for their services, in some programs students received college credit, and in other programs the students volunteered their services. The articles reviewed in this section are organized by the different areas in student personnel service where students provided the services.

Residence halls. The focus of the published research on using students as paraprofessional helpers in residence halls has generally been to determine personality characteristics of effective and

ineffective student volunteers. Hoyt and Davidson (1967) found that ineffective assistants had higher authoritarian scores than students rated as effective by their head counselors. More recently, Holbrook (1972) conducted a study at the University of Florida to investigate effective characteristics of residence hall volunteer students. At the beginning of the quarter, 28 male and 33 women volunteers completed the Edwards Personal Preference Schedule (EPPS). At the end of the term, the student helpers were rated by their supervisors on a four point scale ranging from highly effective to highly ineffective. The results of this rating were compared with the volunteers' scores on the EPPS. More effective women helpers had higher scores on factors of nurturance and affiliation, while effective male volunteers had lower scores on these factors. Holbrook (1972) suggested that scores on the EPPS might be used to predict volunteer effectiveness in residence halls and therefore would aid in the selection process. The results obtained in this study would not substantiate selection on this basis since the number of subjects was low, the study was conducted at one university, the high and low effectiveness groups were not significantly different, and student faking of the EPPS was a possibility.

Placement services. West (1973) stated that college placement service professionals wait in their offices for the senior student to come seeking their services. According to West, one of the primary responsibilities of placement counselors should be to solicit student use of their services, beginning when students are freshmen. West described a project at the University of Maryland where undergraduate

student volunteers were trained in a short period of time to work effectively as placement service assistants. The assistants then worked in the residence halls to disseminate information about how students could more effectively use the student placement services. The effectiveness of this program was measured by the large number of students that the volunteer assistants interacted with directly.

Advising programs. Colleges and universities have employed faculty advising systems to serve a variety of purposes, ranging from academic scheduling to helping students integrate their educational experiences. Students have been critical of the effectiveness of faculty advisors and many faculty members have expressed dislike of this work (Maclean, 1953).

A study by Murry (1972) at Kansas State University investigated whether upperclass students could perform advising functions as well as experienced faculty members. Twenty senior students were selected as peer advisors. There were two groups of advisees: One group consisted of 45 students who had declared a major, and the second group was 45 students with an undeclared major. The measure of effectiveness used was a 14-item Advising Satisfaction Scale. Other variables used were frequency of advising sessions, length of session, grade averages, persistence in college, and semester academic loads. Student advisors were rated significantly higher in friendliness, warmth, accessibility, and openness. Academic outcomes for the advisees of the student advisors were equal, and frequently superior to those for faculty advisors. Murry (1972) concluded that these results suggested that the

level of competence needed for advising was not beyond the capacity of upper-division students.

Minority student programs. Black students on primarily white university campuses may require innovative services because they have often felt that they cannot work effectively with white counselors. Such a program at the University of Maryland was described by Westbrook and Smith (1976). Twenty-one black male and female upperclass students volunteered to be peer counselors. Their training consisted of two, four-hour workshops in which they were trained broadly, rather than in-depth. The authors argued that minority peer counselors were more effective when their duties were to refer students to professionals, rather than working in-depth with peer counselees. A large number of black students were served by this program, but no other evaluations were made.

Counseling centers. One of the most common innovations reported in student personnel work has been the establishment of peer counseling services. Reasons for the use of peer counselors include a shortage of trained professionals, economic necessity, and the ineffectiveness of existing professional services for some students (Edgar & Kotrick, 1972).

Steenland (1973) surveyed the directors of 63 college counseling services to obtain their opinions about the types of services that could be performed successfully by paraprofessionals. These services included: tutoring, "big brothers," freshman orientation, help with study problems, administering the Strong Vocational Interest Blank, and

counseling students with adjustment-to college difficulties. This survey also indicated that slightly fewer than half of the undergraduate paraprofessionals in counseling centers were paid in some form.

Steenland (1973) concluded from the results of this survey that student paraprofessionals were performing the duties for which they were most suited and that their use made it possible to maintain adequate counseling services in spite of budget cuts on some campuses.

Snadowsky and Meyer (1975) attempted to assess the personal growth and development of student volunteers at a counseling center by mailing a questionnaire to 26 former volunteers. Sixteen questionnaires were returned. Students reported that they had grown in maturity, assumption of responsibility, sensitivity to others, self-acceptance, and insight into self and others. All of the respondents agreed that the peer counseling program contributed significantly to their college experience. The personal growth reported by students in this study were changes perceived by the students to have occurred, and were not measured by a test instrument sensitive to the changes.

The fact that students can provide numerous services to peers on the college or university campus has been well documented in the literature. Relatively few studies have measured the personal development of the students providing the services. Often development has been inferred from observations that students felt better about themselves as a result of helping others.

Empirical Research Studies

The second category of published research concerning student participation in service programs is the empirical research study. In this category are studies that seek to compare participants in service activities to nonparticipants by measuring some characteristic(s) in both groups of students. This literature is limited in the number of studies available and varies in methodology.

Research reviewed in this section is organized by topic: (a) personal characteristics of volunteers, and (b) effects related to college activity experiences. Studies that have focused on the personal characteristics of college students prior to volunteering demonstrate the importance of research design. Inadequate design will be cited and discussed in reviews that comprise the second portion of this section.

Personal Characteristics of Volunteers

Investigators have often attributed differences between participants and nonparticipants as having resulted from the participatory process, when the design of the study does not support this interpretation of the findings. The research reviewed in this section shows that nonequivalent population groups may be a major problem in research on the effects of activity participation.

Sheridan and Shack (1970) examined the differences in personal characteristics between volunteers for a sensitivity training program and nonvolunteers. Shostrom's Personal Orientation Inventory and Schack's Epistemic Orientation Inventory were administered to all of the

students ($N=81$) enrolled in an undergraduate course called Personality Problems and Mental Health. The students were then given the opportunity to voluntarily participate in seven weekly sensitivity training sessions. The scores on both assessment instruments of the 23 volunteers were compared with the nonvolunteer scores. Volunteers were significantly ($p < .05$) more accepting of themselves, less dependent on their environment, and more self-actualized than nonvolunteers. This study indicated that certain bias effects were present in the volunteer group of undergraduate students which could affect experiments in which they participated.

Hersch, Kulik, and Scheiber (1969) compared college students who volunteered for summer work in mental hospitals with a control group of nonvolunteer students. The variables studied were personality, occupational interest, and life-history variables. The California Psychological Inventory was used to measure personality and the Strong Vocational Interest Blank measured occupational interests. Volunteers scored significantly ($p < .01$) higher than the control group on maturity, tolerance, self-control, and need for independent achievement. Male and female volunteers had significantly greater vocational interests in the social service area and in careers involving the use of language or artistic skills when compared with the nonvolunteer students.

A study by Cash and Janda (1977) evaluated the possibility that volunteers for behavior therapy research were self-selected on variables that were known to change outcomes. Specifically, the study compared

approval motivation, speech-anxiety, and locus of control between volunteers and nonvolunteers for a speech-anxiety treatment program. Volunteers reported significantly greater ($p < .001$) speech anxiety than nonvolunteers, and volunteers had higher ($p < .05$) external locus of control scores. The act of volunteering was unrelated to subject's sex or approval motive.

These studies emphasize the importance of adequate controls in behavioral research. Self-selection of students into a service activity can influence the results of studies in two ways. First, self-selection may mean that the groups differed in the dependent characteristic prior to participation. Without a pretest measurement of the characteristic(s) being studied, the observed outcome differences in characteristic(s) may simply reflect preexisting population differences. A second possibility is that individuals who choose to participate in service activities may differ from nonparticipants in some characteristic that influences the effects of participation. Thus, students who participate may be more likely to change in the direction of the characteristic being studied than nonparticipants.

Effects Related to College Activity Experiences

A limited number of studies have been conducted in an attempt to demonstrate the effects of participation in college activities. The studies reviewed in this section are organized by the dependent variable measured.

Moral judgment and self-acceptance. A series of investigations

was conducted in the 1960s and early 1970s to evaluate changes that occurred in college students who volunteered in mental hospitals. Holzberg, Gewirtz, and Ebner (1964) examined the effects of association with hospitalized mental patients on the personalities of volunteer college students. The experimental group consisted of 32 male students from several Connecticut colleges and universities who volunteered to serve as companions to chronic, mentally ill patients. The control group consisted of 24 male students from the same schools who had no contact with the program. Both experimental and control groups answered two questionnaires, once in the fall before the program started and again in the spring when the experimental group finished the volunteer program. Moral judgment was defined as increased tolerance of others and was measured by 36 items from the Edwards Personal Preference Schedule. Self-acceptance was measured by a questionnaire consisting of 40 items that was used in the doctoral research of one of the authors' colleagues.

The pretest scores of the control group were significantly higher than the experimental group's scores on both measures. The experimental group changed significantly ($p < .01$) toward more tolerant moral judgments, while the control group showed no change. The experimental group also showed a significant ($p < .05$) increase in self-acceptance. An important, and unanswered, question was what motivated the students to volunteer to be companions for mentally ill patients. Pretest scores indicated differences between the experimental and control groups, thus

the possibility existed that the experimental group was a population of students particularly susceptible to personality change.

King, Walder, and Pavey (1970) replicated the Holzberg et al. (1964) study at the University of Maryland using pretest and posttest scores of 16 volunteers in a mental health facility for the experimental group and 400 nonvolunteer student scores for the control. Both groups of students were enrolled in an undergraduate psychology course. The amount of patient contact for the volunteers was 11 evenings during one semester.

The experimental group in this study did not change significantly in moral judgment scores, but showed a greater change ($p < .01$) toward self-acceptance than the nonvolunteers. There was a one semester difference in amount of time of participation in the volunteer program between the Holzberg et al. (1964) and King et al. (1970) studies. Also, King et al. suggested that the difference might have been due to contact of the volunteers with a hospital staff person in the Holzberg et al. study. The change toward increased moral judgment could have been the result of exposure to the verbal behavior of a psychologist teaching about deviant behaviors rather than the exposure to the hospital patients, according to King et al. Thus, results obtained in research studies on student activity participation may be confounded by nonequivalent groups prior to participation, and by intervening variables during the participatory experience.

Moral development. The effects of a federally funded community service project (University Year for Action) were the subject of a study

by Enright and Hendel (1979). These researchers examined the influences on the moral growth of college undergraduates ($N=18$) taking part in a year long combined helping and academic experience. There was no control group. A short form of Rest's (1979) Defining Issues Test (DIT) was used to assess moral development. The DIT measures the amount of Kohlbergian post-conventional reasoning used by the subject. A second assessment tool focused on students' descriptions of the learning environment that they encountered in the service program as compared to learning environments in typical college classrooms. The pretests were administered in September and the posttests the following June.

There were no significant differences on the pretest and posttest DIT scores. Statistically significant differences between the responses to the learning environment of the program and the college classroom were found for all dimensions of the second assessment instrument. Students viewed their learning experiences in the service project more positively than their classes. The authors recommended using more than one type of evaluation of growth in service programs, since certain assessment instruments may be too specific to measure effects of programs.

Duffy (1982) conducted a study at a Catholic university to compare level of moral development in students enrolled in two types of college courses. Both classes required readings, lectures and discussions. One self-selected group of students was required to participate in a service experience, including volunteering in elementary schools, hospitals, and senior citizen centers. Rest's Defining Issues Test (1979) was used on

a pretest-posttest basis to measure degree of moral judgment in each group of students. A statistically significant difference ($p < .001$) between the pretest and posttest scores was found in the service orientated group; no significant difference was found in the control group. Duffy (1982) proposed that a better research design would have included three groups: students who participated only in service programs, students who had only course work, and students with both service and course work. Duffy concluded that participation in a service-type activity promoted moral growth in students. However, the data from his study did not exclude the possibility that students most likely to increase in moral reasoning elected to participate in the service program.

Race relations. Scott and Damico (1983) investigated the relationship of participation in high school and college extracurricular activities to interracial contact. The subjects of the college study were 267 white undergraduate students who answered a questionnaire prepared by the authors for the study. The statistical data and method of analysis were not reported in the article. The authors reported that at both educational levels the main source of interracial contact was through participation in school-sponsored activities. Students who were in programs involving cooperative interaction between different races had more positive racial attitudes than students whose cross-race contact was limited to the classroom.

Studies on practices in high schools which improve race relations (Crain, 1981; Slavin & Madden, 1979) have shown a high correlation

between level of extracurricular participation and improved racial attitudes and behaviors in desegregated high schools. When other practices that might be associated with positive racial relations (using multi-ethnic textbooks, teaching minority history, or class discussions) were tested, no factor other than activity participation was found to be related to positive interracial relations (Slavin & Madden, 1979). Research is needed on the relationship between cross-race activity participation and race relations at the college level.

College drop out. Vaughan (1968) explored the relationship between activity participation and a failure to persist in college until graduation. The subjects consisted of 157 male college students who had dropped out of college before graduation, and a control group of 137 males who had either graduated or were in the process of completing their college education. The drop out sample was divided into two groups: 70 who voluntarily withdrew and 87 who were dismissed for academic reasons. Frequency of activity participation was determined by listings in yearbooks and from records of organizations.

The percentage of students in each group who participated in one or more extracurricular activities was: voluntarily withdrew, 8.6 percent; dismissed, 20.7 percent; and control 31.1 percent. The difference between the control and voluntarily withdrew groups was significant ($p < .01$), but the difference between the dismissed and control groups was not. When the entire drop out group was compared with the control group, the results were significant at the .05 level. This study showed significantly less participation in activities among college drop outs

than among those who persisted to graduation. Vaughan (1968) concluded that extracurricular activity participation was not a contributing factor to nonpersistence, and may instead encourage students to remain in college. The data from this study suggested that the extracurriculum was not a threat to the academic mission of the college.

Developmental task achievement. The amount of research concerning college student development has grown rapidly in the past two decades. Professionals in student personnel work increasingly look to researchers to document innovative methods of promoting student development.

Numerous articles have related accomplishments in adulthood to various aspects of the college experience. Sprinthall, Bertin, and Whitely (1982) reviewed the literature on the relationship of academic achievement to accomplishments after college, and concluded that the finding of no relationship between college grades and later life accomplishment has been replicated in numerous studies with diverse samples of students. Promoting psychological maturity was found to have a significant relationship to success after college, according to the research reviewed by these authors (Heath, 1976; Mosher, 1971). Sprinthall et al. (1982) concluded that promoting psychological maturity as part of the college experience would be a means for colleges and universities to contribute to adulthood accomplishments of their graduates.

Jackson (1977) analyzed relationships between activities of college students and achievement of developmental tasks. Correlations were

computed between development and activity categories with the following variables: type of college, age, marital status, type of residence, and socio-economic status. The author developed an instrument to collect activity data and used the Student Developmental Task Inventory (SDTI) to measure developmental level. Data were collected from 1037 college students in eight eastern colleges and universities.

Activities were placed in seven categories for purpose of comparison: personal enrichment, unconventional, realistic, physical, service, collegiate, and introspective. Personal enrichment activities (those with an intellectual disposition) were moderately correlated with the development of autonomy, purpose, and mature interpersonal relationships. Realistic activities (those in which participants must have an ability to cope with life situations and demands) were moderately correlated with developing autonomy and purpose. Student participation in the different activity categories was not related to age, marital status, type of residence while attending college, or to socio-economic status.

Jackson (1977) stated that only a limited number of activities was listed in the questionnaire, and therefore activities important to development may have been omitted from this study. Jackson ignored the possibility that students may have elected to participate in various activity categories because of prior development in that category. That is, students already more developed in the tasks measured may have self-selected into enrichment activities.

Williams and Winston (1985) studied how work and participation in

student activities contribute in different ways to students' personal development. The SDTI was used to measure developmental task achievement. Data were collected voluntarily from 168 students enrolled in education classes at a large southeastern university. Students were grouped both by employment for pay and by activity participation. Fifty-five students worked (number of hours not included), and 113 did not. One hundred five students reported participating in at least one student organization or activity. Participants in activities had statistically significant higher scores in the areas of interdependence ($p < .001$), educational plans ($p < .01$), career plans ($p < .01$), and lifestyle plans ($p < .05$) than did nonparticipants. Students who worked had statistically significant ($p < .01$) higher scores than nonworkers on only the mature relationships with peers subtask.

Williams and Winston (1985) concluded: "Students who do not elect to become involved outside the classroom in either organized student activities or work are developmentally less mature than participants" (p. 58). The subjects were not tested prior to participation or working to determine if the differences existed before the participatory or work experience. The results do not preclude the fact that students who elected to participate in activities or to work were developmentally more mature than those who elected not to be involved.

The relationship between participation in varsity athletics at the collegiate level and the achievement of certain developmental tasks was the subject of an investigation by Sowa and Gressard (1983). The experimental group consisted of 48 randomly selected varsity athletes

and the control was 48 nonathletes randomly selected from the student population. The dependent measure was the SDTI.

Athletes had significantly ($p < .05$) lower scores than nonathletes on three subtasks: educational plans, career plans, and mature relationships with peers. The authors suggested that the "coachability of a player" that aids an athlete in sports participation may hinder the individual in developing career and educational planning skills. Lack of purpose beyond sports makes the transition from athlete to nonathlete difficult.

Sowa and Gressard (1983) assumed the differences were caused by athletic participation, although the data did not rule out the possibility that differences existed before athletic participation by the experimental group.

Pyle (1981) incorporated an appropriate control group into the design of a study which measured personal development in college students who participated in an overseas, cross-cultural service-learning program. The experimental group was 22 students who spent three weeks in Jamaica participating in a service-learning project. The control group ($n=14$) consisted of two types of students: (a) those who had been accepted for the project but had to drop out, and (2) those who would have participated had they not had prior commitments. A pretest-posttest research design was used with the SDTI as the dependent variable. Mean gain scores were calculated for both the experimental and control groups.

The control group had no statistically significant mean gain

scores. The experimental group had significant mean gain scores on: the total SDTI ($p < .05$), the autonomy task ($p < .05$), the mature lifestyle plans subtask ($p < .05$), and the interdependence subtask ($p < .01$).

Even though the subjects were not randomly selected, which is often the case in behavioral research, Pyle (1981) attempted to control on motivation and preexisting developmental task levels. The research design showed the mean score gains for both the control and the experimental group which made comparisons between groups more meaningful than if only a posttest design had been used. Pyle concluded that additional research is needed to determine relationships between service-learning and student development.

Summary

College students have participated in various types of campus activities and service programs since the early days of American colleges. The literature reviewed showed the results were generally positive when the criterion for success was how efficiently students performed the projects.

Theorists in student development see the mission of higher education to be more than teaching academic subjects. Emphasis has increasingly been placed on the education and development of the whole individual. It has been demonstrated that experiences in addition to the classroom are essential to youth in order to develop personal characteristics necessary for success in a complex society. The

extracurriculum has increasingly been cited by student personnel workers as a source of experiences that promote development of these characteristics.

Researchers have recently sought to document the developmental effects of participation in the extracurriculum. The general methodology of these studies has often involved sampling groups of activity participants and nonparticipants and then measuring one or more dependent variables in both groups. Statistically significant differences between groups were assumed to be due to activity participation. This methodology assumes that the experimental and control groups were similar prior to participation. Research has indicated that the two groups generally are not equivalent in behavioral studies.

Continued research using adequate research design and appropriate controls is necessary to assess the relationship between activity participation and changes in college students.

CHAPTER III. METHODOLOGY

Introduction

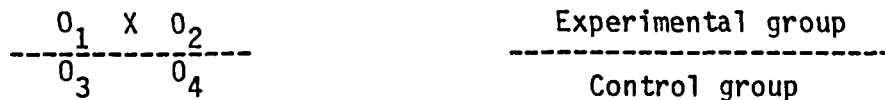
The purpose of this chapter is to describe the procedures used to investigate the relationship between participation in a service-activity and changes that occur in students providing the service. This research sought to answer two questions:

1. Was participation in the Cyclone Aides program associated with the development of the personal characteristics of autonomy, purpose, and mature interpersonal relationships?

2. Was participation in the Cyclone Aides program associated with satisfaction with the college experience?

Research Design

It was not possible to use a true experimental research design since subjects could not be randomly assigned to groups. Therefore, a quasi-experimental, nonequivalent-control-group design (Mason & Bramble, 1978) was used. The design of this study was:



O_1 = preparticipation scores (Cyclone Aides)

O_2 = postparticipation scores (Cyclone Aides)

X = act of participation as Cyclone Aides

O_3 = preparticipation scores (control)

O_4 = scores of control group after participation by the experimental group

Changes in satisfaction with the college experience and in personal developmental characteristics of students participating in the Cyclone Aides program (X) were measured by comparing preparticipation scores (O_1) and postparticipation scores (O_2). The changes in the control (nonparticipating) group were also compared (O_3 and O_4). Any difference between the mean gain score of the experimental group and the mean gain score of the control group was attributed to the experience of participation as Cyclone Aides by the experimental group.

Subjects

The experimental group in this study consisted of students at Iowa State University who were selected as Cyclone Aides ($n=22$). The control group ($n=20$) was composed of students who had been selected for the final interview process, but were not selected as Cyclone Aides.

Each year twenty-two Cyclone Aides are selected to represent the wide diversity of the student body at Iowa State University in the Summer Orientation Program. To qualify, applicants must: (a) have a 2.0 cumulative grade point average (prefer 2.2), (b) not be on temporary enrollment, (c) be enrolled fall and spring semesters, (d) plan to enroll the following fall after selection, and (e) demonstrate the characteristics of a successful Cyclone Aide.

Characteristics of successful Cyclone Aides are: (a) commitment to the concept of the Summer Orientation Program and a willingness to

participate and contribute to the Cyclone Aide Program, (b) effective use of their academic adviser and other college and university resources in planning their own academic programs, (c) participation in university programs and in student organizations, (d) ability to communicate effectively with students and parents on a one-to-one basis, (e) ability to lead small group discussions and to speak in front of large groups, (f) ability to meet deadlines on time and punctuality, and (g) the desire to participate fully in Cyclone Aide duties and activities.

Training and Duties of Cyclone Aides

The Cyclone Aides program is administered by the Dean of Student's Office on the Iowa State University campus. As part of this program, the Cyclone Aides (who also constitute the experimental group in the present study) completed the following training program: (a) a two-day weekend retreat in early February, 1986, (b) training sessions of three hours per week for 14 weeks, and (c) continued training during summer orientation (May 19 to June 27, 1986).

Cyclone Aides carry out their major service activities by working full-time for the university during the six weeks of summer orientation. This experience constitutes the "treatment" in the design of the present study. Compensation in 1986 was \$725. The varied duties of Cyclone Aides included:

1. assisting in hosting College Meetings and Parent Coffee Hours
2. dining with parents and students
3. helping present seminars in the Afternoon Seminar Series

4. giving campus tours
5. running the multi-media show
6. leading question/answer groups with parents and students
7. planning and participating in social activities for new students
8. being available to parents and new students to provide individualized response to their problems and concerns
9. representing Iowa State University to new students and to parents.

Application and Selection Procedures for Cyclone Aides

The Cyclone Aides program (which is conceived and administered by the Dean of Student's Office) annually requires applicants to submit an application form to that office. The 1986 application form is included in Appendix A. The application form (and consequently membership selection) emphasizes participation in student organizations and campus activities. In addition to the application form, applicants arrange to have three references submitted, including: (a) a student, (b) a faculty/staff member in their college, and (c) a third person acquainted with the applicant. A copy of the evaluation form used by those submitting references is in Appendix B. Categories of characteristics evaluated on this form are: personality, initiative, cooperativeness, responsibility, mental and verbal ability, maturity, emotional stability, and social sensitivity.

The applicants participated in group and individual interviews

conducted by the Dean of Student's Office. The group interviews were organized by college of enrollment, with eight to twelve applicants in each group. There were 98 applicants in this phase of the selection process (Round I). Fifty-one students were selected from this group to participate in Round II of the selection process. Applicants had individual interviews with the Assistant Dean for Orientation and Student Programs, the Cyclone Aide Advisers, and the Orientation Graduate Assistant. Twenty-two students were selected as Cyclone Aides. Thus, the Cyclone Aides, who were the experimental group in this study, were recruited and trained by the Dean of Student's Office.

Demographic Data

A quasi-experimental, nonequivalent-control-group design was used in the present study. The control group was composed of students who interviewed for Round II of Cyclone Aides selection, but were not chosen. Thus, the experimental and control groups of this study were from the same pool of students who had participated in Round II of Cyclone Aides selection. It was assumed that both groups were similar in motivation to participate in a service activity, and that both groups would be as similar on the personal characteristics being measured in this study as could be attained when studying an intact campus service organization.

Variables that could be measured in each group were selected for comparisons. The demographic data for the experimental and control groups are presented in Tables 1, 2, 3, and 4.

Table 1

Population Gender by Groups

Sex	Experimental		Control	
	N	Percent	N	Percent
Male	8	36.4	5	25
Female	14	63.6	15	75

Table 2

Classification of Population by Groups

Classification	Experimental		Control	
	N	Percent	N	Percent
Freshman	3	13.6	2	10.0
Sophomore	13	59.1	14	70.0
Junior	3	13.6	3	15.0
Senior	3	13.6	1	5.0

Table 3

College of Enrollment of Population by Groups

College	Experimental		Control	
	N	Percent	N	Percent
Agriculture	2	9.09	1	5.0
Business Administration	5	22.73	5	25.0
Design	2	9.09	4	20.0
Education	3	13.64	2	10.0
Engineering	3	13.64	3	15.0
Home Economics	2	9.09	2	10.0
Sciences and Humanities	5	22.73	3	15.0

Table 4

Mean Number of Activities and Number of Students Who Worked by Groups

Group	Mean number of activities			Number of working students	
	N	M	SD	N	Percent
Experimental	21	4.05	2.37	8	36.4
Control	18	4.56	1.65	6	30.0

Examination of Tables 1 to 4 reveals that the two groups of students were very similar in gender, classification, college of enrollment, mean number of activities, and number of students who worked. It was concluded that the demographic characteristics of the experimental and control groups were strikingly similar. This was primarily due to the process used to select participants for Round II.

Instrumentation

Two instruments were used in the present study: (a) the Student Developmental Task Inventory (SDTI) Second Edition (Winston, Miller, & Prince, 1979), and (b) the College Satisfaction Questionnaire.

Student Developmental Task Inventory

The SDTI is an assessment instrument based on the research and theory of Chickering (1969). It measures the resolution of developmental tasks associated with young adult college students between 17 and 23 years of age. The SDTI deals with normal behavior and is based on psychosocial developmental theory that assumes that growth is continuous and cumulative. The authors stated that many items in the inventory are set in a middle-class milieu, since colleges in the United States are basically middle-class institutions. Students who do not have middle-class values tend to score lower on the instrument.

The SDTI is composed of three main tasks, each of which is defined by three subtasks. Mastery of each subtask reflects achievement of its basic task. Eight of the subtasks are made up of 16 statements, while

the remaining subtask (Tolerance) is composed of 12 statements. Each statement describes behavior or reports of feelings representative of a level of development within the specific subtask. Students respond to each statement by determining whether it is basically an accurate description (true) or an inaccurate description (false) of them. The primary purpose of the SDTI is for students to assess their own level of personal development so they can plan and assume responsibility for their own intentional development. Brief descriptions of each task and subtask follow.

Task 1: Developing Autonomy. To be autonomous means to be self-sufficient, and yet know when to be dependent on others.

Subtask 1: Emotional Autonomy. Students who have mastered this subtask are free from the need for continuous reassurance and approval from others.

Subtask 2: Instrumental Autonomy. Students can carry on activities and cope with problems on their own.

Subtask 3: Interdependence. Students who have mastered this subtask realize they cannot dispense with parents and that they must contribute to society in order to receive its benefits.

Task 2: Developing Purpose. To have developed purpose, students have formulated clear, realistic educational and career goals; and have a sense of direction in their lives.

Subtask 1: Appropriate Educational Plans. Students have well formulated educational plans and goals, and can use available resources to reach their goals.

Subtask 2: Mature Career Plans. Students have an awareness of the world of work, an understanding of one's abilities, and a knowledge of requirements for various occupations.

Subtask 3: Mature Lifestyle Plans. Students have a personal direction in life which balances vocational interests, personal values, hobbies, and future family plans.

Task 3: Developing Mature Interpersonal Relationships. Students form relationships with peer and authority figures that are open, respectful, honest, and trusting. Students respond to others as individuals, rather than as stereotypes.

Subtask 1: Intimate Relationships with Opposite Sex. Students can establish close, meaningful relationships with members of the opposite sex.

Subtask 2: Mature Relationships with Peers. Students describe their relationship with peers as having greater trust, independence, and individuality.

Subtask 3: Tolerance. Students have respect for those of different backgrounds, habits, beliefs, faiths, values, and appearances.

Reliability. Winston et al. (1979) reported that two different methods of reliability estimation were used in order to account for different sources of error. Test-retest reliability provided an estimation of the stability of the instrument over time. The SDTI was administered to two groups of undergraduate students ($N=38$), and readministered two weeks later. All task and subtask scores were correlated using Pearson product-moment correlations. The total

inventory had a test-retest correlation of 0.92. Task reliability estimates were: Autonomy, 0.91; Purpose, 0.90; and Mature Interpersonal Relationships, 0.89. Subtask estimates ranged from 0.85 (Tolerance) to 0.93 (Emotional Autonomy).

Internal consistency reliability was estimated using Cronbach's coefficient alpha. The SDTI was administered to 234 undergraduate college students at four colleges. The coefficient for the total inventory was 0.90; and for the tasks the coefficients were: Autonomy, 0.78; Purpose, 0.85; and Mature Interpersonal Relationships, 0.73. The subtask coefficients were considerably lower; from 0.45 (Tolerance) to 0.78 (Intimate Relationships with Opposite Sex). Winston et al. (1979) attributed the lower internal consistency reliability coefficients to the way the SDTI was constructed. The items in each subtask were purposefully written with a continuum of difficulty, which reduced the alpha coefficients. Thus, the instrument had a high degree of stability over a short period of time, with considerably lower internal consistency reliability.

Validity. Validity is the extent to which a measuring instrument serves the purpose for which it is being used (Ahmann & Glock, 1981). Winston, Miller, Hackney, Hodges, Polkosnik, Robinson, and Russo (1981) reported two methods were used to estimate validity on the SDTI. Construct validity was estimated by correlating subtask scores of the SDTI with suitable scales of the College Student Questionnaire (Peterson, 1968) and the Career Development Inventory (Super, Zelkowitz, & Thompson, 1975). There were significant ($p < .01$,

.05) correlations on the three main tasks, and on subtasks under the Purpose and Autonomy tasks.

Contrasting groups of students were identified in order to establish the ability of the instrument to differentiate among students with different personal characteristics. Significant correlations with appropriate subtasks were obtained, which Winston et al. (1981) concluded were evidence of differential validity.

The authors reported there was a relationship between Task 1, Autonomy and the other tasks. Unless a certain level of autonomy was achieved, it would be difficult for students to achieve high levels on the other tasks.

College Satisfaction Questionnaire

The second instrument used in the present study was a modification of a questionnaire constructed by Moore (1982) to measure college satisfaction. The modified instrument as used in this study was entitled the College Satisfaction Questionnaire (CSQ) and is shown in Appendix C.

This 55-item questionnaire used Likert-type measurement techniques to assess student perceptions of the overall Iowa State University environment. Approximately 40 items from Moore's (1982) original instrument were used; the remaining 15 items were written for the present study.

Items deleted from Moore's instrument included: (a) items that referred to the change from the quarter to semester system, such as,

"Overall, I am glad I.S.U. is switching to the semester system" (p. 104), and (b) items that the present researcher determined were not related to satisfaction in this study, such as, "I generally study in my room" (p. 104). An example of an item written for this study was, "I will probably do graduate work after finishing college."

Reliability. The College Satisfaction Questionnaire was analyzed for reliability using the Cronbach alpha coefficient. The alpha coefficient estimates the internal consistency of an instrument by measuring the degree to which the items are functioning in an homogeneous manner.

Alpha coefficients were calculated on the results of the entire sample of students (N=42) taking the CSQ, both before and after participation by the Cyclone Aides. The results were: preparticipation, 0.911; and postparticipation, 0.904. Alpha coefficients were then calculated by experimental and control groups. The results are shown in Table 5. The high alpha coefficients indicated

Table 5

Reliability Scores of College Student Questionnaire by Group and Time of Testing

Group	N	Preparticipation alpha coefficient	Postparticipation alpha coefficient
Experimental	22	0.889	0.841
Control	20	0.924	0.921

a high level of internal consistency reliability for the instrument.

Test-retest reliability was not calculated for the instrument. However, the similarity of the control group mean scores (preparticipation, 197.05; postparticipation, 198.90) would indicate stability over a three month period of time.

Validity. In the present study it was important that the CSQ actually measured the construct of satisfaction with the college experience. Validity estimates of this type are difficult to establish. Moore (1982) stated that environmental assessment instruments have generally been validated on the College and University Environment Scales (Pace, 1969), which Moore considered to be outdated and of questionable validity. Therefore, Moore based the validity of the original instrument on face validity (that is, it seemed to be valid to someone reading it) and on content validity achieved by the "expert input process utilized in the development of individual items" (p. 38). The validity of the CSQ was based on the same assumptions.

Procedures

The Iowa State University Committee on the Use of Human Subjects in Research reviewed this study and concluded that the rights and welfare of the human subjects were adequately protected, that risks were outweighed by potential benefits, that confidentiality of data was assured, and that informed consent was obtained.

Experimental Group

The experimental group consisted of the Cyclone Aides as selected by the Dean of Student's Office. These students held their first group meeting on February 4, 1986. In order to carry out the present study, the researcher attended this meeting and at the conclusion distributed a written explanation of the research project. Dr. Augustine W. Pounds, Dean of Students, cosigned this statement, which is included in Appendix D. The voluntary participation of the Cyclone Aides was requested and all students consented to participate by signing an attached consent form. The experimental group then completed both the SDTI and CSQ.

At the conclusion of the Summer Orientation Program, on June 23, 1986, each Cyclone Aide participant again completed both assessment instruments (postparticipation scores).

Control Group

In order to get their participation for this study, a letter (Appendix E) was mailed on January 30, 1986 to each of the 29 students who participated in Round II of Cyclone Aides selection but were not chosen as Cyclone Aides. Dr. Pounds also cosigned this letter, which explained the project, requested the student's participation, and stated times when the assessment instruments could be completed. After the 1986 Cyclone Aides were selected, the control group of students had no further contact with the Dean of Student's Office relating to Cyclone Aides participation.

Potential students for the control group were contacted by

telephone on February 2 and 3, 1986 as a reminder, and to determine if the times for testing were suitable. On February 5 and 6, 1986 twenty students (control group) completed both instruments. Each student also signed a consent form to participate in the study (Appendix F).

The control group was contacted by telephone between April 30 and May 3, 1986 to establish times for posttesting. Each of the 20 students completed both assessment instruments sometime between May 6 and 8, 1986 (postparticipation scores).

After completing the posttesting, students in both the experimental and control groups were given their own results on the pretesting of the SDTI, along with a brief description of the tasks and subtasks. Students generally felt the results were in agreement with their personal characteristics.

Data Analysis

Data collected were coded by group and the information was key punched for statistical analysis. The Statistical Package for the Social Sciences (SPSS^X) (Nie, Hull, Jenkins, Steinbrenner, & Bent, 1975) was used to analyze the data.

The Null Hypotheses tested were:

1. The mean gain scores of the experimental group and the mean gain scores of the control group on the development of the personal characteristics of autonomy, purpose, and interpersonal relationships as measured by the SDTI will be equal.
2. The mean gain scores of the experimental group and the mean

gain scores of the control group on the CSQ will be equal.

The statistical tests used to test these hypotheses were the independent and paired t-tests.

Thirteen variables on the SDTI were analyzed: the total inventory, three main tasks, and nine subtasks. The scores on all 55-items of the CSQ were analyzed as a single satisfaction score. The method of analysis of scores was identical on both assessment instruments.

Frequencies were calculated to ensure data accuracy and to obtain demographic data.

Independent t-tests were calculated on the preparticipation scores of both the experimental and control groups. A pooled estimate of variance t-test formula was used in all tests except one subtask which did not meet the homogeneity of variance requirement. A separate t-test formula was used for the one subtask.

Independent t-tests were next calculated on the postparticipation scores of both groups. Paired t-tests were computed on all variables to compare the preparticipation and postparticipation scores within the experimental and the control groups separately.

Finally, an independent t-test analysis was conducted on the mean difference scores between the preparticipation and postparticipation scores of the experimental and the control group. That is, the preparticipation mean score was subtracted from the postparticipation mean score of each variable by groups and independent t-tests were conducted on the difference scores. This procedure accounted for the gain scores of the control group when the experimental group's gain

scores were analyzed.

Summary

Chapter III presented the methodology used in conducting the present research study. The research design was a quasi-experimental, nonequivalent-control group design. Demographic data showed the control and experimental groups were remarkably similar prior to participation in the study. In this chapter both assessment instruments were described, as well as their validity and reliability estimates.

Data analyses were by paired and independent t-tests. The results of the analyses will be presented in Chapter IV.

CHAPTER IV. RESULTS

Introduction

The purpose of this chapter is to present the results of the statistical analysis of the data collected by the two assessment instruments. The Student Developmental Task Inventory (SDTI) and the College Satisfaction Questionnaire were completed by each subject in the experimental group ($n=22$) and the control group ($n=20$) between February 4 and February 6, 1986. The subjects in the control group were retested between May 6 and 8, 1986. The subjects in the experimental group were retested on June 23, 1986, following completion of their duties as Cyclone Aides in the Summer Orientation Program.

The results are organized according to the hypothesis tested. The statistical tests used were independent and paired t-tests.

Hypothesis One

Hypothesis One states: Students who participate in the Cyclone Aides program will demonstrate a statistically significant ($p < .05$) greater increase than the control group in the development of the personal characteristics of autonomy, purpose, and interpersonal relationships as measured by the SDTI. This hypothesis was tested by comparing preparticipation and postparticipation mean scores of the Cyclone Aides (experimental group) on the 13 variables of the SDTI to the control group preparticipation and postparticipation mean scores.

Preparticipation Comparisons

To test the assumption that the experimental and control groups were similar prior to participation by the experimental group as Cyclone Aides, independent t-tests were computed on the mean scores of the three main tasks, the nine subtasks, and the total inventory of the SDTI. The results are presented in Table 6. A significant difference in variance for the two groups was found on the subtask, Mature Educational Plans ($F=5.27$, $p < .001$). Therefore, the separate variance t formula was used for that comparison.

The t-value (0.74) of the preparticipation total inventory was not significant, and there were no significant differences on the three main tasks. The only statistically significant subtask score was Tolerance, on which the mean of the control group was significantly higher ($p < .05$) than the experimental group's mean score.

The mean scores of both groups on the three main tasks were within 0.5 standard deviation of the norm scores from a national sample ($N=1,153$) of college students representing 25 institutions (Winston, Miller, & Prince, 1979). The higher standard deviations of the control group on 12 of the 13 variables indicated a greater diversity on the developmental tasks measured by the SDTI in the control group subjects as compared to the experimental group, although the mean scores were significantly different on only 1 of the 13 variables. The preparticipation scores indicated that even though the two groups were not randomly selected for this study, there was considerable similarity in the developmental tasks measured by the SDTI in the two groups prior

Table 6

Preparticipation Scores on the Student Developmental Task Inventory by
Experimental (E) and Control (C) Groups

Variable	Group	Mean	SD	t-value	2-tailed probability
Task 1: Autonomy	E	32.27	4.66	0.54	0.589
	C	31.40	5.70		
Subtasks:					
Emotional Autonomy	E	10.55	1.79	1.54	0.131
	C	9.50	2.57		
Instrumental Autonomy	E	10.86	2.25	0.68	0.503
	C	10.40	2.19		
Interdependence	E	10.86	2.19	-0.90	0.376
	C	11.50	2.42		
Task 2: Purpose	E	33.45	4.53	1.39	0.174
	C	31.25	5.76		
Subtasks:					
Mature Educational Plans	E	12.05	0.90	0.89+	0.381
	C	11.60	2.06		
Mature Career Plans	E	11.09	2.56	1.74	0.090
	C	9.60	3.00		
Mature Lifestyle Plans	E	10.32	2.21	0.35	0.729
	C	10.05	2.76		
Task 3: Interpersonal Relationships	E	29.32	3.54	-0.47	0.641
	C	29.95	5.11		
Subtasks:					
Intimate Relationships with Opposite Sex	E	10.18	2.75	1.06	0.294
	C	9.15	3.51		

Table 6 (Continued)

Variable	Group	Mean	SD	t-value	2-tailed probability
Mature Relationships with Peers	E	11.64	1.62	-0.82	0.419
	C	12.10	2.05		
Tolerance	E	7.50	1.26	-2.39*	0.022
	C	8.70	1.95		
Total SDTI	E	95.05	8.65	0.74	0.462
	C	92.60	12.50		

N = 22 Experimental; 20 Control

* $p < .05$

df = 40.

+df = 25.44

to participation as Cyclone Aides by the experimental group.

Postparticipation Comparisons

The postparticipation results are included in Tables 7, 8, and 9. Independent t-tests were computed on the postparticipation mean scores of both the experimental and control groups on the SDTI. The results of the analysis are shown in Table 7. The experimental group had statistically significant higher mean scores on: Task 1, Autonomy, and its subtask, Interdependence; and two subtasks of Task 2, Purpose: Mature Career Plans and Mature Educational Plans. The mean score on Task 2, Purpose, approached significance ($p < .067$). The significantly higher preparticipation score of the control group on the subtask, Tolerance, disappeared in the postparticipation scores. The t-value of the Total SDTI, although not statistically significant, increased from 0.74 ($p < .47$) to 1.80 ($p < .08$) showing an increased difference between the two groups. These results indicated that the two groups were less similar than they were prior to participation by the Cyclone Aides.

Comparisons of Gains Within Groups

Paired t-tests were computed on the preparticipation and postparticipation scores to determine the significance of the gain scores on the 13 variables for the experimental and control groups separately. The results are presented in Table 8. The experimental group had statistically significant mean gain scores on eight variables:

Task 1, Autonomy ($p < .001$)

Subtask: Interdependence: ($p < .001$)

Table 7

Postparticipation Scores on the Student Developmental Task Inventory by
Experimental (E) and Control (C) Groups

Variable	Group	Mean	SD	t-value	2-tailed probability
Task 1: Autonomy	E	36.09	4.43	2.34*	0.025
	C	32.85	4.56		
Subtasks:					
Emotional Autonomy	E	10.96	2.46	1.64	0.108
	C	9.75	2.27		
Instrumental Autonomy	E	11.59	1.84	1.16	0.254
	C	10.85	2.30		
Interdependence	E	13.55	1.63	2.17*	0.036
	C	12.25	2.22		
Task 2: Purpose	E	37.41	5.40	1.88	0.067
	C	34.25	5.47		
Subtasks:					
Mature Educational Plans	E	13.68	1.49	2.76**	0.009
	C	12.35	1.63		
Mature Career Plans	E	12.50	2.40	2.09*	0.043
	C	10.85	2.72		
Mature Lifestyle Plans	E	11.23	2.60	0.23	0.822
	C	11.05	2.46		
Task 3: Interpersonal Relationships	E	32.23	4.78	-0.05	0.964
	C	32.30	5.46		
Subtasks:					
Intimate Relationships with Opposite Sex	E	11.09	3.25	0.39	0.698
	C	11.77	2.22		

Table 7 (Continued)

Variable	Group	Mean	SD	t-value	2-tailed probability
Mature Relationships with Peers	E	11.77	2.22	-1.34	0.186
	C	12.65	1.98		
Tolerance	E	9.36	1.40	0.75	0.455
	C	8.95	2.11		
Total SDTI	E	105.73	11.09	1.80	0.079
	C	99.40	11.64		

N = 22 Experimental; 20 Control

* $p < .05$

** $p < .01$

df = 40

Table 8

Gain Scores on the Student Developmental Task Inventory by Experimental (E) and Control (C) Groups

Variable	Group	Mean Pre-	Mean Post-	Mean Gain	t-value	2-tailed probability
Task 1: Autonomy	E	32.27	36.09	3.82	4.79***	0.000
	C	31.40	32.85	1.45	1.73	0.100
Subtasks:						
Emotional Autonomy	E	10.55	10.95	0.40	0.96	0.346
	C	9.50	9.75	0.25	0.49	0.631
Instrumental Autonomy	E	10.86	11.59	0.73	1.95	0.065
	C	10.40	10.85	0.45	1.21	0.243
Interdependence	E	10.86	13.55	2.69	5.92***	0.000
	C	11.50	12.25	0.75	1.83	0.083
Task 2: Purpose	E	33.45	37.41	3.96	4.62***	0.000
	C	31.25	34.25	3.00	3.87***	0.001
Subtasks:						
Mature Educational Plans	E	12.05	13.68	1.64	6.31***	0.000
	C	11.60	12.35	0.75	1.92	0.069
Mature Career Plans	E	11.09	12.50	1.41	3.24**	0.004
	C	9.60	10.85	1.25	2.88**	0.01
Mature Lifestyle Plans	E	10.32	11.23	0.91	1.77	0.091
	C	10.05	11.05	1.00	1.53	0.142
Task 3: Interpersonal Relationships	E	29.32	32.23	2.91	3.65**	0.002
	C	29.95	32.30	2.35	3.28**	0.004
Subtasks:						
Intimate Relationships with Opposite Sex	E	10.18	11.09	0.91	1.46	0.160
	C	9.15	10.70	1.55	2.49*	0.022

Table 8 (Continued)

Variable	Group	Mean Pre-	Mean Post-	Mean Gain	t- value	2-tailed probability
Mature Relation- ships with Peers	E	11.64	11.77	0.13	0.36	0.719
	C	12.10	12.65	0.55	1.56	0.134
Tolerance	E	7.50	9.36	1.86	5.75***	0.000
	C	8.70	8.95	0.25	0.59	0.561
Total SDTI	E	95.05	105.73	10.68	6.64***	0.000
	C	92.60	99.40	6.80	4.36***	0.000

N = 22 Experimental; 20 Control

* $p < .05$

** $p < .01$

*** $p < .001$

df: E = 21, C = 19

Task 2, Purpose ($p < .001$)

Subtasks: Mature Educational Plans ($p < .001$)

Mature Career Plans ($p < .01$)

Task 3, Interpersonal Relationships ($p < .01$)

Subtask: Tolerance ($p < .001$)

Total SDTI ($p < .001$).

The control group had significant mean gain scores on five variables:

Task 2, Purpose ($p < .001$)

Subtask: Mature Career Plans ($p < .01$)

Task 3, Interpersonal Relationships ($p < .01$)

Subtask: Intimate Relationships with Opposite Sex ($p < .05$)

and Total SDTI ($p < .001$).

Several items used in deriving the score on the Intimate Relationships with the Opposite Sex subtask can be answered only when the subject has a single dating partner of the opposite sex, a rather transitory state among college students. Therefore, the results of this subtask will not be subject to analysis as part of the present study.

These results reflected the previous analysis (Table 7), but were complicated by the occurrence of significant gains by both groups on several variables: Task 1, Purpose, and its subtask, Mature Career Plans; Task 3, Interpersonal Relationships, and the Total SDTI. To further examine the mean score differences between the preparticipation and postparticipation gain scores of the experimental and control groups, an independent t-test analysis was conducted on the mean difference scores. This procedure compared the two groups' mean gain

scores, and took into account the gain scores of the control group which were assumed in this study to be the gain scores that would be expected in the experimental group had not participation as Cyclone Aides taken place. The results are shown in Table 9. The statistically significant differences in mean gain scores between the two groups were attributed to Cyclone Aides participation by the experimental group.

A significant difference at the .01 level was found between the mean gain scores of the experimental and control groups on two subtasks: Interdependence and Tolerance. Task 1, Autonomy, was significant at the $p < .05$ level. The subtask, Mature Educational Plans, approached significance with a t -value of 1.93 ($p < .061$). The Cyclone Aides participants exhibited a greater average increase in gain scores than did the control group. There were no comparisons where the control group had significantly greater gain scores than the experimental group.

Figure 1 compares the mean score increases of the two groups on the Interdependence subtask. An increase of 0.75 mean score points by the control group was an anticipated increase for college students over a one semester period of time (Winston et al., 1979). The experimental group increased 2.69 mean score points, which was a greater than expected gain on this subtask, indicating that students who participated in the Cyclone Aides program developed personal traits that were measured by the subtask, Interdependence, on the SDTI to a greater extent than would be anticipated by the control group increase.

Table 9

Mean Difference Scores (Preparticipation to Postparticipation) on the
SDTI by Experimental (E) and Control (C) Groups

Variable	Group	Mean Difference	SD	t- value	2-tailed probability
Task 1: Autonomy	E	3.82	3.74	2.05*	0.047
	C	1.45	3.75		
Subtasks:					
Emotional Autonomy	E	0.41	1.99	0.24	0.811
	C	0.25	2.29		
Instrumental Autonomy	E	0.73	1.75	0.52	0.603
	C	0.45	1.67		
Interdependence	E	2.68	2.12	3.14**	0.003
	C	0.75	1.83		
Task 2: Purpose	E	3.95	4.02	0.82	0.416
	C	3.00	3.45		
Subtasks:					
Mature Educational Plans	E	1.64	1.22	1.93	0.061
	C	0.75	1.74		
Mature Career Plans	E	1.41	2.04	0.26	0.798
	C	1.25	1.94		
Mature Lifestyle Plans	E	0.91	2.41	-0.11	0.913
	C	1.00	2.92		
Task 3: Interpersonal Relationships	E	2.91	3.74	0.52	0.607
	C	2.35	3.20		
Subtasks:					
Intimate Relationships with Opposite Sex	E	0.91	2.92	-0.73	0.472
	C	1.55	2.78		

Table 9 (Continued)

Variable	Group	Mean Difference	SD	t-value	2-tailed probability
Mature Relationships with Peers	E	0.14	1.75	-0.80	0.427
	C	0.55	1.57		
Tolerance	E	1.86	1.52	3.06**	0.004
	C	0.25	1.89		
Total SDTI	E	10.68	7.54	1.73	0.092
	C	6.80	6.98		

N = 22 Experimental; 20 Control

* $p < .05$

** $p < .01$

df = 40

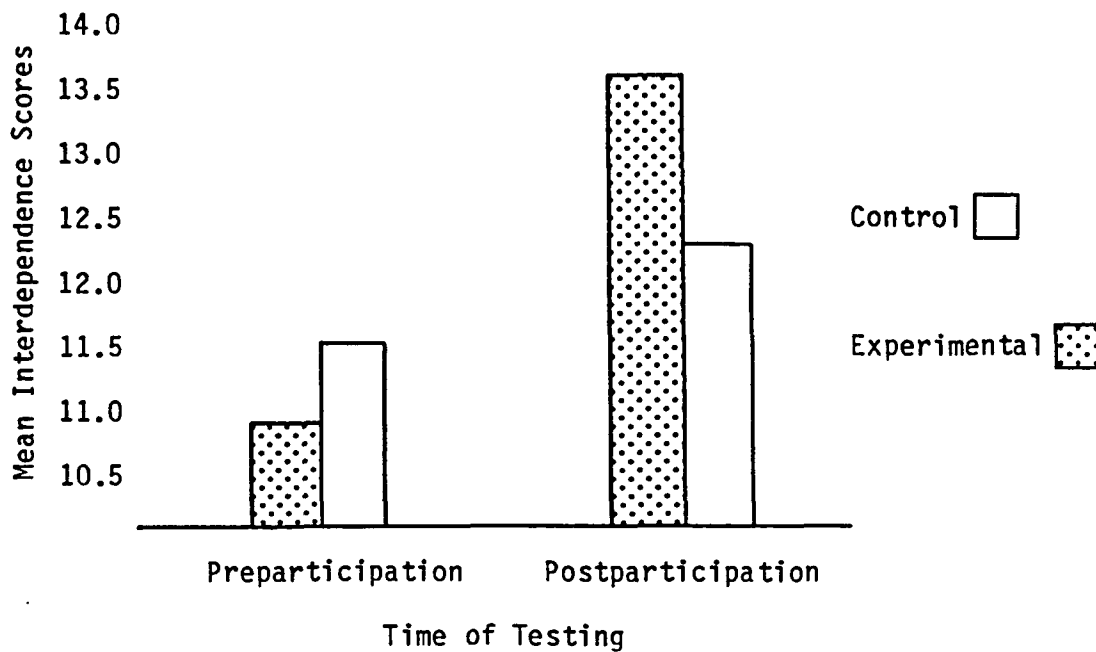


Figure 1. Mean preparticipation and postparticipation scores on the subtask, Interdependence, by experimental and control groups

Mean score increases on the subtask, Tolerance, are shown in Figure 2. The Tolerance subtask was measured by 12 items instead of 16, resulting in lower mean scores. The control group increased 0.25 mean score points, which was an expected increase according to Winston et al. (1979). The experimental group increased 1.86 mean score points. Prior to participation by the experimental group as Cyclone Aides, the control group had a statistically significant ($p < .05$) higher score on the subtask, Tolerance. The mean gain score of the experimental group was significant at the .001 level of probability, whereas the mean gain score of the control group was not significant.

Hypothesis One, was therefore supported on one of the three tasks (Development of Autonomy) and two of the nine subtasks.

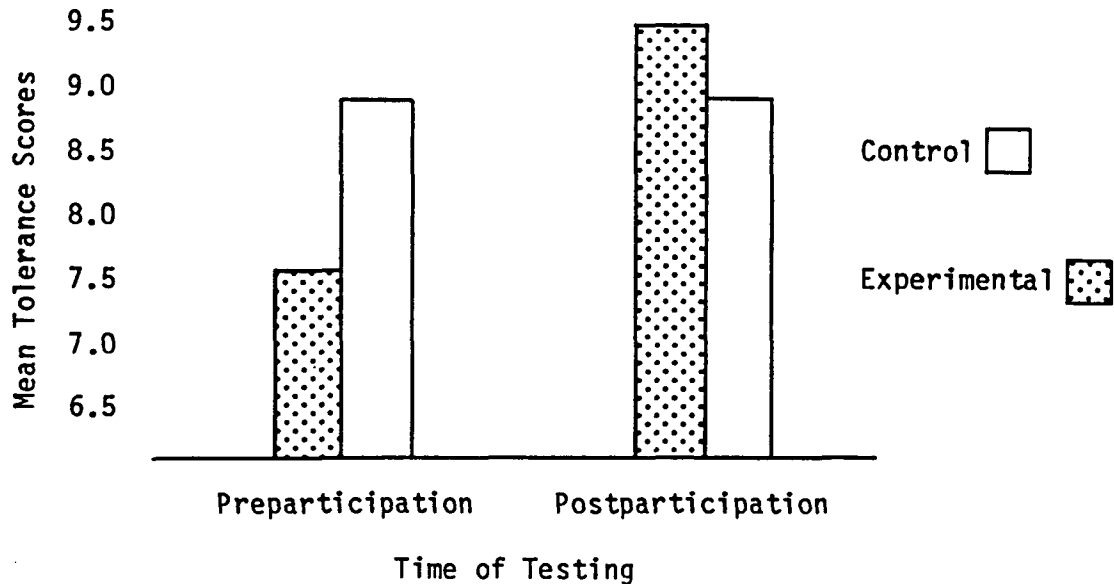


Figure 2. Mean preparticipation and postparticipation scores on the subtask, Tolerance, by experimental and control groups

Hypothesis Two

Hypothesis Two states: Students who participate in the Cyclone Aides program will have a statistically significant ($p < .05$) greater increase in satisfaction with the college experience than will the control group.

To test this hypothesis, preparticipation and postparticipation mean scores of the experimental group on the College Satisfaction Questionnaire were compared to the control group mean scores. The instrument used to measure satisfaction was analyzed for reliability by the Cronbach alpha coefficient. (See Chapter III for detailed discussion of instrument reliability.) The overall alpha coefficient of the instrument on the preparticipation scores of both groups ($N=42$) was

0.91, indicating a high degree of internal consistency reliability.

Preparticipation Comparisons

An independent t-test computed on the experimental and control groups' preparticipation mean scores showed the two groups to be similar in satisfaction with their college experience at Iowa State University (Table 10). Homogeneity of variance was tested and no significant difference in the two groups was found ($F=1.85$, $p < .174$), therefore the pooled estimate of variance was used.

Table 10

Preparticipation Scores on the College Satisfaction Questionnaire by Experimental and Control Groups

Group	N	Mean	SD	t-value	df	2-tailed probability
Experimental	22	198.50	12.03	0.33	40	0.744
Control	20	197.05	16.36			

The college satisfaction mean scores of the experimental and control groups ($E=198.5$; $C=197.05$) were remarkably similar prior to participation by the experimental group as Cyclone Aides. The preparticipation t-value with 40 degrees of freedom was not significant at the 0.05 level of probability, showing no statistically significant difference in the two groups on the College Satisfaction Questionnaire mean scores.

Postparticipation Comparisons

The postparticipation results are presented in Tables 11, 12, and 13. The alpha coefficient of the assessment instrument on the postparticipation scores ($N=42$) was 0.896, again indicating high internal consistency reliability. An independent t-test was computed on the postparticipation mean scores of both groups on the College Satisfaction Questionnaire and a significant difference at the 0.05 level of probability was found (Table 11).

Table 11

Postparticipation Scores on the College Satisfaction Questionnaire by Experimental and Control Groups

Group	N	Mean	SD	t-value	df	2-tailed probability
Experimental	22	208.14	10.06	2.64**	40	0.012
Control	20	198.90	12.60			

** $p < .05$.

Comparisons of Gains Within Groups

Paired t-tests were computed on the preparticipation and postparticipation scores to determine the significance of the gain scores on the College Satisfaction Questionnaire. Table 12 shows that

the mean gain score of the experimental group was significant at the .001 level of probability, whereas the control group had a small, nonsignificant mean score gain.

According to the assumptions of this study, the difference in the increase in mean scores of the two groups was attributed to participation by the experimental group as Cyclone Aides.

Table 12

Gain Scores on the College Satisfaction Questionnaire by Experimental and Control Groups

Group	N	Mean Pre-	Mean Post-	Mean Gain	t- value	2-tailed probability
Experimental	22	198.50	208.14	9.64	4.92***	0.000
Control	20	197.05	198.90	1.85	0.61	0.549

*** p < .001

df: E=21, C=19

The mean score increases in satisfaction are represented graphically in Figure 3.

An independent t-test was used to test the significance of the mean difference between the preparticipation and postparticipation gain scores of the experimental and control groups. The results of the analysis were significant at the .05 level of probability (Table 13). Hypothesis Two, therefore, was supported by the statistical analysis.

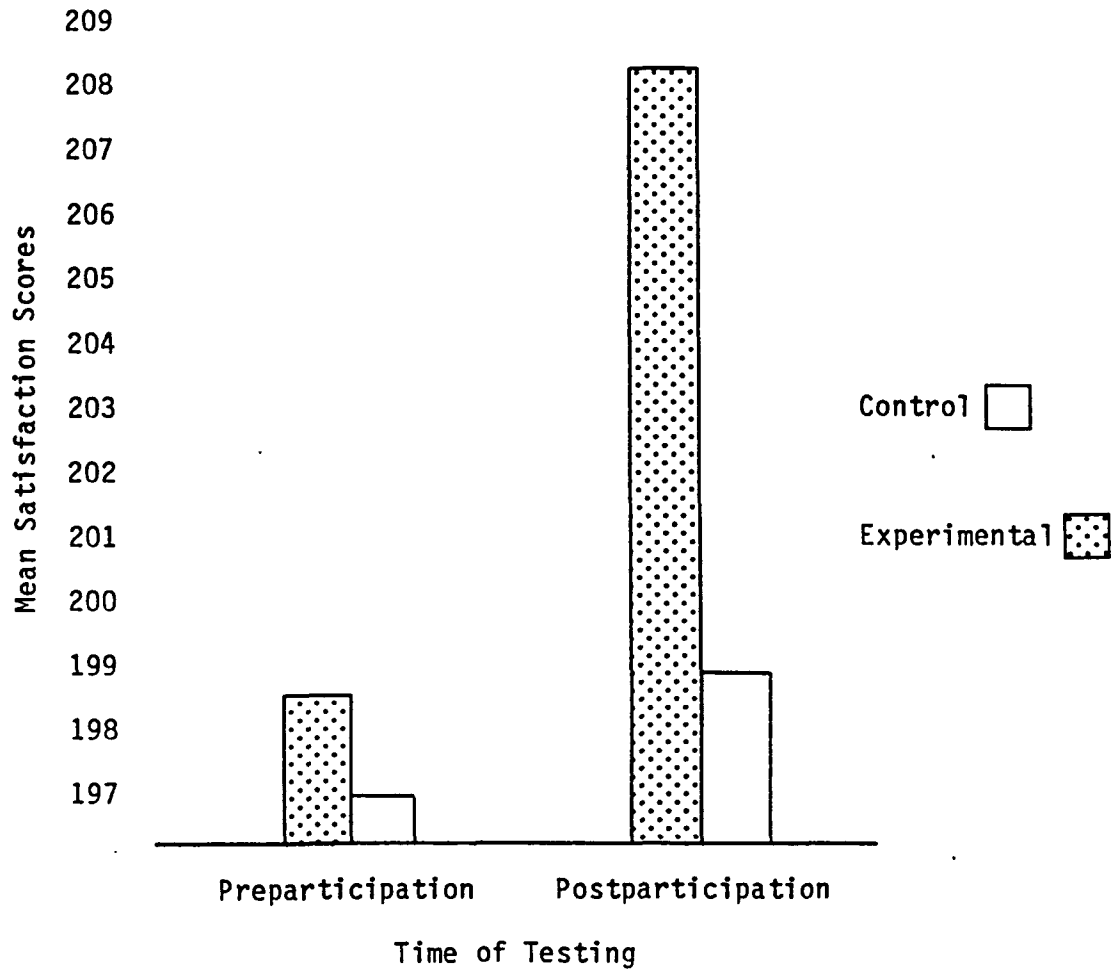


Figure 3. Mean preparticipation and postparticipation scores on the College Satisfaction Questionnaire by experimental and control groups

Table 13

Mean Difference Scores on the College Satisfaction Questionnaire by
Experimental and Control Groups

Group	N	Mean Difference	SD	t-value	df	2-tailed probability
Experimental	22	9.65	9.18	2.20*	40	0.038
Control	20	1.85	13.56			

* $p < .05$.

Summary

The results of the statistical analyses used to test the two hypotheses were presented in Chapter IV. Hypothesis One was partially supported and Hypothesis Two was supported by the research findings.

Hypothesis One stated that students who participated as Cyclone Aides would have significantly ($p < .05$) greater increases than the control group on the characteristics of autonomy, purpose, and interpersonal relationships as measured by the SDTI. When the mean difference scores of the experimental group were compared to the mean difference scores of the control group, the results showed a significant mean score increase by the Cyclone Aides group on the Task, Autonomy ($p < .05$) and its subtask, Interdependence ($p < .01$). The subtask, Tolerance, was also significant at the .01 level of probability. The

experimental group had greater, although not significant, gains on Task 2, Purpose, and Task 3, Interpersonal Relationships. Students in the control group had no significant mean difference score increases. On the Total SDTI, the experimental group increased 10.68 mean score points and the control group increased 6.80 mean score points which was not a significant difference ($t = 1.73, p < .09$).

Hypothesis Two stated that Cyclone Aides participants would experience a greater increase in satisfaction with college than the control group, and was supported at the .05 level of probability. Preparticipation mean scores showed the two groups to be similar on the assessment instrument used to measure college satisfaction. Analysis of the postparticipation scores revealed a mean score increase of 9.64 points in the experimental group, compared to 1.85 points in the control group, which was statistically significant at the .05 level of probability.

The significant mean score increases in interdependence, tolerance, and college satisfaction by the experimental group were attributed to the group's experience as Cyclone Aides. The research findings will be discussed in Chapter V.

CHAPTER V. DISCUSSION AND RECOMMENDATIONS

The purpose of this chapter is to present a brief summary of the study, discuss the results and significance of the study, and provide recommendations for future research.

Professionals in the student personnel field have increasingly recognized the importance of participation in student activities, especially activities that are service orientated. Few studies have been conducted that document the specific effects of participation in a service activity on the students providing the service. The present study was designed to investigate differences in developmental task achievement and college satisfaction between participants and nonparticipants in a campus service program.

Summary of Study

Twenty-two students selected by the Dean of Student's Office to represent the university to new students and their parents as Cyclone Aides made up the experimental group in this study. The control group (n=20) consisted of students who were selected to be in the final interview process, but were not chosen as Cyclone Aides. Demographic data indicated that the two groups of students were similar in characteristics such as gender, classification, college of enrollment, activity participation, and number of students who worked.

Two assessment instruments were used to gather data. The Student Developmental Task Inventory (SDTI) measured developmental task

achievement in three main tasks and nine subtasks. The College Student Questionnaire (CSQ) was a revision of a locally designed satisfaction inventory and was used to measure student satisfaction with the college experience.

The experimental and control groups completed both assessment instruments before and after participation by the experimental group as Cyclone Aides. Preparticipation scores of the two groups were similar, indicating a comparable level of college satisfaction and development of the personal characteristics measured in the study.

Data were analyzed by independent and paired t-tests. Two hypotheses were tested: (a) Students who participated as Cyclone Aides would have significantly ($p < .05$) greater gain scores than the control group on the tasks and subtasks measured by the SDTI, and (b) Students who participated as Cyclone Aides would have significantly ($p < .05$) greater gain scores on the CSQ than the control group.

The results of the statistical analyses showed significant mean score increases by the Cyclone Aides group on Task 1, Autonomy ($p < .05$) and on two subtasks, Interdependence ($p < .01$) and Tolerance ($p < .01$). Although other comparisons on the SDTI did not reach the .05 level of significance, the experimental group had greater mean score increases on all three tasks, on six of the nine subtasks, and on the total inventory. A significant ($p < .05$) mean score increase was found on overall satisfaction with college, as measured by the CSQ.

Discussion of Results

The purposes of conducting the present study were: (a) to investigate the relationship between participation in a service-activity and changes in students providing the service, and (b) to present a research method that adequately measures changes related to service-activity participation. The results will be discussed first in terms of the overall research design and method; and subsequently by each hypothesis tested.

Research Design and Method

The research design selected for the present study sought to minimize preexisting differences between students in the experimental and control groups. Both groups were from the same group of students who had been selected for Round II of Cyclone Aides selection. Thus, their motivation to participate in a service activity was similar. Examination of the demographic data also revealed a remarkable similarity between the two groups of students.

Statistical analysis of the preparticipation scores of both groups showed the experimental and control groups were not significantly different on the tasks measured by the SDTI or on college satisfaction as measured by the CSQ. On only one of the nine subtasks of the SDTI were they significantly different: The control group had a higher score on the subtask, Tolerance ($p < .05$). It was concluded that the experimental and control groups were as similar as could be reasonably expected in a study of an organized campus service activity.

The research was further controlled by using a pretest-posttest design. This enables one to compare the gain of the experimental group to the gain of the control group. When the mean difference between the preparticipation and postparticipation gain scores of the two groups were compared, the experimental group's gain scores were reduced by what was assumed to be their gain scores had they not participated as Cyclone Aides.

The research design in this study had the following advantages over studies using a posttest only design: (a) The preparticipation developmental and satisfaction levels of the experimental and control groups were analyzed and found to be similar, and (b) The mean gain scores of the two groups were compared, which controlled in part for chance errors of testing and for the control group gain scores. It is the opinion of the researcher that this study was as well controlled as possible in a study using an intact service activity.

Hypothesis One

This study tested the hypothesis that participation in a service activity promotes certain changes in college students providing the service. Specifically, hypothesis one stated that Cyclone Aides participants would have a statistically significant ($p < .05$) increase on certain personal characteristics measured by the Student Developmental Task Inventory. Before discussing the statistical results, it is necessary to examine the assessment instrument used to measure personal characteristics of the subjects.

The SDTI was designed as a basic assessment instrument to aid college students in defining their own developmental task achievements. Individual items sample behaviors characteristic of college students. The SDTI has recently been used frequently by researchers to measure student development. However, as a research instrument, the SDTI has several shortcomings. First, the low estimates of internal consistency reliability on the subtasks in Task 3, Developing Mature Interpersonal Relationships make interpretation of results on these subtasks difficult.

In addition, the basic construction of the SDTI creates a problem for researchers. Scores on each task are a reflection of the three subtasks that make up the task. A task score is the total of its subtask scores and therefore cannot be perceived as a single entity. In both the present study and in Pyle's (1981) study there was a significant increase ($p < .01$) on the Interdependence subtask, which resulted in a significant increase ($p < .05$) on the Autonomy task. It cannot be assumed that students developed in all facets of the Autonomy task, however, even though this task had a significant increase. Therefore, the discussion of the results of this study will focus on the subtask increases.

Interdependence. Students who participated in the Cyclone Aides program showed a statistically significant ($p < .01$) increase on the subtask, Interdependence. This finding was in agreement with the results of other studies on activity participation (Pyle, 1981; Williams & Winston, 1985). Winston et al. (1979) defined interdependence as the

realization that loving and being loved are complementary and that there is a direct relationship between one's own behavior and community welfare in general. Students scoring high on this subtask realize that they cannot receive benefits from a social system without contributing to it.

Students in the Cyclone Aides program experienced being members of a peer group that worked together for a common purpose. These experiences would be expected to create a feeling of interdependence among participants, as they discovered the importance of sharing responsibilities. Students would then realize the importance of dependence on others to accomplish common goals. Chickering (1969) defined this as "mature dependence."

Development of interdependence is an important task achievement for college students. Learning when to depend on others, and when to be independent of others is an attribute which is related to success after college. Psychological maturity, which Sprinthall et al. (1982) argued was a contributing factor in adulthood accomplishment, is based on the achievement of interdependence. Participation in organized student activities would appear to be an effective means of stimulating the development of interdependence.

Tolerance. Students who participated in the Cyclone Aides program showed a statistically significant ($p < .01$) increase on the subtask, Tolerance. Winston et al. (1979) defined Tolerance as having respect for persons of different backgrounds, habits, beliefs, values, and appearances. Students who score high on this subtask respond to

people as individuals rather than as stereotypes.

Winston et al. (1979) stated that the Tolerance subtask scores did not increase as students progressed through college, suggesting that achievement of this subtask depended upon experiences by the individual rather than on college attendance. Chickering (1969) found that tolerance increased during students' sophomore year and then leveled off. He also showed that participation in extracurricular and community activities was highest in the sophomore year. These findings further suggest a positive relationship between activity participation and the development of tolerance.

The Cyclone Aides group had significantly ($p < .05$) lower preparticipation scores on the Tolerance subtask, suggesting that these individual students were lacking in experiences that would be instrumental in developing achievement on this subtask. Although students in the experimental and control groups were shown to have numerous similarities, certain differences between members within each group could be expected, such as differences in beliefs, values, and backgrounds. The Cyclone Aides group worked closely together in the spring training sessions and during the Summer Orientation Program. The control group did not have the experience of working in close association with students of differing beliefs and backgrounds. Thus, the results of this study would indicate that by living and working together, and by associating with a diverse group of new students and their parents, the Cyclone Aides developed personal characteristics associated with the Tolerance subtask. According to Winston et al.

(1979), these characteristics include openness to others, an ability to interact with various people, and the acceptance of diversity in others. The development of these attitudes is an essential part of the educational process for college students.

However, caution should be used in interpreting the results of the Tolerance subtask. It will be recalled that Winston et al. (1979) found scores on this subtask to have low estimates of internal consistency reliability. It is possible that the increased differences in scores were partly the result of random variation in scores.

Hypothesis Two

This study also tested the hypothesis that Cyclone Aides participants would have a statistically significant ($p < .05$) increase in satisfaction with college. The results supported this hypothesis. Cyclone Aides participants had a significantly higher ($p < .05$) increase in scores on the College Satisfaction Questionnaire. This finding was in agreement with Astin's (1977) conjecture that high involvement in the college environment leads to increased satisfaction with the undergraduate experience. Furthermore, Moore (1982) found that when nonparticipants were compared with students involved in two or more organizations, the participant group expressed more satisfaction with the undergraduate experience.

The two groups were remarkably similar on the CSQ scores prior to participation by the Cyclone Aides group. The control group scores remained relatively stable from preparticipation to postparticipation,

whereas the Cyclone Aides group scores increased significantly ($p < .001$). Assuming that all intervening variables other than participation were similar for the two groups from preparticipation to postparticipation, the results of this study might indicate that participation by the experimental group as Cyclone Aides was associated with an increase in satisfaction with the college environment. This finding of increased satisfaction with the Iowa State University environment was further substantiated by an unpublished independent study that showed Cyclone Aides participants who have completed college were considerably above average in post graduation support of the institution and its activities (Snyder, 1986).

An alternate explanation for the increase in satisfaction scores by the experimental group might be that the requirement that they represent Iowa State University as Cyclone Aides in and of itself resulted in a change in their attitudes. According to Festinger (1957), when behavior is inconsistent with attitudes, a tension called cognitive dissonance is produced. In order to reduce this dissonance individuals may change either their attitudes or behaviors so that the two are more consistent. Thus, the Cyclone Aides may have changed in their satisfaction with college scores (attitude) to bring them in line with their behavior of appearing satisfied with Iowa State University.

Although little research has documented the relationship between satisfaction and other facets of the college experience, certain suppositions might be made. It seems reasonable to assume that students with higher levels of satisfaction would be more likely to remain in

school, to achieve academically according to their various abilities, and to use the college environment as an effective means of support.

According to Sanford (1962), an environment that presents a challenge to college students while providing a support system will increase students' satisfaction with that environment. Applying Sanford's theory to the present study, it can be surmised that Cyclone Aides participants experienced a challenge in performing their numerous duties, and that they learned to use and appreciate the support afforded them by the college environment. The resultant increase in involvement with the college environment lead to increased satisfaction with the college experience, as hypothesized by Astin (1977).

Significance of the Study

Students who participated in a service activity had significantly higher gain scores than the control group in the developmental tasks of interdependence and tolerance, and in overall college satisfaction. According to the assumptions of this study, the differences in gain scores between the experimental and control groups were attributed to participation by the experimental group in the Cyclone Aides program. These finding support the position advanced by student affairs professionals that participation in student activities enhances the overall development of college students.

The personal characteristics of tolerance and interdependence are both related to students working together for a common cause. These facets of students' personality are generally not developed in the

college classroom where the emphasis is generally on academic achievement.

Findings of this study suggest that it may be beneficial to encourage students to become more involved in activities on the college campus. Using student volunteers and paraprofessionals in student affairs programs often has been justified by the economic needs of the institution. The findings of this study suggest that such participation may be an effective means of stimulating certain developmental characteristics in students. However, these results are not completely generalizable to the entire student body since the students in both the control and experimental groups in this study were from a select group of students.

Research has shown that academic achievement is not by itself a good predictor of success after college. A review by Sprinthall et al. (1982) suggested that involvement in student activities was positively related to post-college success. In addition, voluntary participation in student organizations was found to promote achievement of personal characteristics necessary for adulthood accomplishments.

The present study also showed a relationship between involvement in a service activity and increased satisfaction with the overall college experience. The implications of increased satisfaction are obvious. Satisfied students are generally more likely to persist in school to graduation and to be more involved in all aspects of their college experience.

This study was undertaken to assess the relationship between

service-activity participation and certain changes in college students. The results of the study indicate that even in an intense short-term service-activity experience significant changes take place in students providing the service. Further evidence that service-activity participation is related to students' development is supplied by the gain score increase of the experimental group on the total inventory. Although this contrast was not statistically significant, the gain on the total inventory by the experimental group was considerably higher than the control group. The extracurriculum thus provides an important aspect of the college experience in the education of today's college student.

Recommendations for Future Research

The present study was conducted at a single large public institution, therefore the results may not necessarily be generalizable to colleges with differing environments. Similar studies are needed in colleges of varying sizes.

The inventory used to assess student development was found to have several weaknesses as a research instrument. Preparation of a questionnaire that measures a specific developmental task in students would be preferable to the use of a more general instrument.

Further research is needed using various college activity programs as the independent variable. As stated previously, the Cyclone Aides program involves a more intense program of training and service than is typical of college service programs. Therefore, the present study

should be repeated with more typical activity programs.

Finally, the permanence of the changes demonstrated in the present study could be measured by using the assessment instruments to conduct longitudinal studies at various time intervals. The overall worth of an educational program can best be evaluated in terms of the long-range effects on students involved in the program.

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APPENDIX A. APPLICATION, 1986 CYCLONE AIDE

PLEASE TYPE OR PRINT LEGIBLY (ATTACH ADDITIONAL SHEETS IF NECESSARY)

Application
1986 CYCLONE AIDE

NAME _____
YEAR IN SCHOOL _____ MAJOR _____ COLLEGE _____
SCHOOL ADDRESS _____ SCHOOL PHONE _____
HOME ADDRESS _____ HOME PHONE _____
SOCIAL SECURITY NUMBER _____

1. WHAT DO YOU ENJOY WHEN NOT IN CLASS?

2. WHAT JOBS (PAID OR VOLUNTEER) HAVE YOU HELD ON CAMPUS?

3. WHAT JOBS (PAID OR VOLUNTEER) HAVE YOU HELD OFF CAMPUS?

4. TO WHAT REGISTERED STUDENT ORGANIZATIONS DO YOU BELONG? OFFICES HELD?

5. IN WHAT CAMPUS ACTIVITIES HAVE YOU PARTICIPATED? IN WHAT COMMUNITY ACTIVITIES HAVE YOU PARTICIPATED? WHAT ROLES DID YOU PLAY?

I give Orientation Programs permission to verify my cumulative grade point average and my semester grade point average. This information will be used to ensure that I meet the minimum academic standards for Cyclone Aides (2.0 cumulative grade point average; may not be on temporary enrollment).

Signature Date

(In order to complete application, this must be signed.)

(OVER)

NAME _____

- 6. WHAT RESOURCES AT IOWA STATE HAVE YOU USED TO PLAN YOUR ACADEMIC PROGRAM? WHAT DEPARTMENTAL AND COLLEGE PROGRAMS HAVE YOU PARTICIPATED IN THAT HAVE HELPED YOU DETERMINE YOUR CAREER DIRECTION?

- 7. IDENTIFY ONE ORGANIZATION, ACTIVITY OR JOB THAT YOU HAVE PARTICIPATED IN AT IOWA STATE. WHAT SKILLS HAVE YOU LEARNED THAT WILL MAKE YOU AN EFFECTIVE AIDE?

- 8. WHAT WAS ONE PROBLEM YOU ENCOUNTERED AT IOWA STATE? HOW DID YOU SOLVE IT? HOW WOULD YOU ASSIST NEW STUDENTS WITH WHAT YOU LEARNED FROM THIS SITUATION?

- 9. WHAT DO YOU FEEL IS ONE STRENGTH OF IOWA STATE FROM WHICH YOU HAVE PERSONALLY BENEFITED? HOW?

- 10. WHAT IS ONE WEAKNESS OF IOWA STATE THAT HAS AFFECTED YOU PERSONALLY? HOW?

- 11. WHAT PARTICULAR GROUPS WITHIN THE STUDENT BODY DO YOU REPRESENT? WHAT PERSPECTIVE OF THE UNIVERSITY WOULD YOU BRING TO THE CYCLONE AIDES WHICH MIGHT BE UNIQUE?

NAMES OF REFERENCES (You are responsible to make certain we receive all three references by Friday, January 17.)

<u>Name</u>	<u>Address</u>
COLLEGE REFERENCE _____	_____
STUDENT REFERENCE _____	_____
OTHER _____	_____

APPENDIX B. EVALUATION FOR CYCLONE AIDE POSITION

IOWA STATE UNIVERSITY
1985-86

ORIENTATION PROGRAMS

EVALUATION FOR
CYCLONE AIDE POSITION

CANDIDATE'S NAME _____

HOW LONG HAVE YOU KNOWN THIS PERSON? _____ IN WHAT CAPACITY? _____

PERSONALITY: Consider your reaction to this person's poise, mannerisms, and ability to make a pleasant impression.

Makes favorable impressions	No particular impression; colorless	Somewhat irritating; unfavorable impression	Very favorable impression; outstanding
-----------------------------	-------------------------------------	---	--

INITIATIVE: Consider the ease and vigor with which this person approaches a new situation and carries the work to completion.

Needs occasional stimulation	Almost entirely self-motivation	Capable of routine work only	Depends wholly on others
------------------------------	---------------------------------	------------------------------	--------------------------

COOPERATIVENESS: Consider attitude and ability to work with others; receptiveness to suggestions and criticism.

Too individualistic; not a team worker; causes conflict in a group	Can do satisfactory work with others but tends toward begin individualistic	Works well with others; very adaptable	Inspiring to others; very cooperative; strong force for group morale
--	---	--	--

RESPONSIBILITY: Consider the degree to which this person is dependable, prompt, accurate and conscientious.

Avoids responsibility; satisfied to get by; sometimes unreliable; indifferent	Needs occasional stimulation; does routine work well under supervision	Does an excellent job on all assignments; completely dependable	Works hard if interested
---	--	---	--------------------------

MENTAL AND VERBAL ABILITY: Consider the speed with which this person grasps new ideas, has understanding of new concepts and ability to express thoughts.

Exceptional ability to think reflectively; unusual faculty of clear expression	Grasps problems and ideas readily; better than average expression	Somewhat slow in grasp of problems and ideas; writes and speaks with average clarity	Mentally dull; poor response to questions; oral and written expression confusing
--	---	--	--

MATURITY: Consider the degree to which this person has developed adult habits.

Shows exceptionally good judgment; very mature for age	Has patience to persevere; is well-adjusted; Appears stable	Displays average maturity for age	Seems immature
--	---	-----------------------------------	----------------

EMOTIONAL STABILITY: Consider direction and control of this person's emotional response; evenness of disposition and mood; absence of tension symptoms and personal social adjustment.

Stable in ordinary situations but disorganized by problems; apt to worry	Tends to be over-emotional; tension evident	Well-adjusted to self and others; evenness of disposition	Very stable; always well-controlled and predictable
--	---	---	---

SOCIAL SENSITIVITY: Consider this person's sensitivity to and understanding of reactions and feelings of individuals and of groups, and the ability to make an effective response to them.

Often not alert in other people's feelings	Exceptionally sensitive and responsive to feelings of others	Sensitive to other individuals and responsive to them	Sometimes shows social sensitivity; not always able to respond effectively to feelings and reactions of others
--	--	---	--

What would be the applicant's strengths as a Cyclone Aide? _____

OVERALL RECOMMENDATION

- _____ I recommend the applicant without reservation as an excellent prospect for a Cyclone Aide position.
- _____ On the whole, I would recommend the applicant as a good prospect for a Cyclone Aide position.
- _____ I have some reservations, but I feel she/he has a reasonable chance of success as a Cyclone Aide. (Please specify) _____
- _____ I have substantial doubts about the applicant. (Please specify) _____

DATE: _____ NAME: _____
 POSITION: _____ SIGNATURE: _____

* Please return immediately to: Barbara Hancock Snyder, Assistant Dean for Orientation and Student Programs, Dean of Students Office, 206 Student Services Bldg., ISU, Ames, IA 50011 Use Campus Mail if possible.

APPENDIX C. COLLEGE SATISFACTION QUESTIONNAIRE

Survey of Student Opinion
About the I. S. U. Environment

Name _____ SS# _____

- A. How many student activities have you participated in this academic year? _____
- B. Are you working this semester? _____
If yes, how many hours per week? _____
- C. How many times have you changed your major since enrolling at I. S. U.? _____

Directions

We would like your opinion about the academic and social environment at Iowa State University. There are no right or wrong answers to these questions. The results will be kept completely confidential and all names will be removed when the project is finished. The information is for research purposes. Use the following response categories:

Strongly Agree 5
 Agree 4
 Neutral 3
 Disagree 2
 Strongly Disagree 1

_____ Please circle your response

- 1. The faculty encourage students to perform up to their capabilities . . . 5 4 3 2 1
- 2. I have a strong desire to learn . . . 5 4 3 2 1
- 3. The information provided by my academic advisor is accurate 5 4 3 2 1
- 4. My academic advisor is easily accessible 5 4 3 2 1
- 5. I have developed strong communication skills 5 4 3 2 1
- 6. I am behind in my assignments throughout most of the semester . . . 5 4 3 2 1

Strongly Agree 5
 Agree 4
 Neutral 3
 Disagree 2
 Strongly Disagree 1

Please circle your response

- | | | | | | | |
|-----|---|---|---|---|---|---|
| 7. | My classes are taught so that I can learn at my own pace | 5 | 4 | 3 | 2 | 1 |
| 8. | Class discussions are usually vigorous and intense | 5 | 4 | 3 | 2 | 1 |
| 9. | My learning experience is too fragmented | 5 | 4 | 3 | 2 | 1 |
| 10. | Courses at I.S.U. place too much emphasis on factual knowledge | 5 | 4 | 3 | 2 | 1 |
| 11. | Students take too many courses during a semester | 5 | 4 | 3 | 2 | 1 |
| 12. | I have the opportunity to collaborate with faculty on research projects . . . | 5 | 4 | 3 | 2 | 1 |
| 13. | The preregistration system works well | 5 | 4 | 3 | 2 | 1 |
| 14. | I feel a high degree of academic pressure during a typical semester . . . | 5 | 4 | 3 | 2 | 1 |
| 15. | Most of my classes are boring | 5 | 4 | 3 | 2 | 1 |
| 16. | Most of my classes are not relevant to my future plans | 5 | 4 | 3 | 2 | 1 |
| 17. | The I.S.U. curriculum has broadened my view of the world | 5 | 4 | 3 | 2 | 1 |
| 18. | Course goals are clearly explained . . . | 5 | 4 | 3 | 2 | 1 |
| 19. | There are a sufficient number of places on campus to study | 5 | 4 | 3 | 2 | 1 |
| 20. | The quality of instruction at I.S.U. is excellent | 5 | 4 | 3 | 2 | 1 |
| 21. | Too many tests are given in my courses | 5 | 4 | 3 | 2 | 1 |
| 22. | I.S.U. courses provide an intellectual challenge | 5 | 4 | 3 | 2 | 1 |

Strongly Agree 5
 Agree 4
 Neutral 3
 Disagree 2
 Strongly Disagree 1

Please circle your response

- | | | | | | | |
|-----|--|---|---|---|---|---|
| 23. | Most courses at I.S.U. require too much out-of-class preparation | 5 | 4 | 3 | 2 | 1 |
| 24. | I like the current learning environment at I.S.U. | 5 | 4 | 3 | 2 | 1 |
| 25. | Theatre, music, and the arts are important components at I.S.U. | 5 | 4 | 3 | 2 | 1 |
| 26. | There is too much emphasis on intercollegiate sports at I.S.U. | 5 | 4 | 3 | 2 | 1 |
| 27. | Instructors get to know students in their classes quite well | 5 | 4 | 3 | 2 | 1 |
| 28. | I feel free to discuss exam scores with my instructors | 5 | 4 | 3 | 2 | 1 |
| 29. | Faculty members are sensitive to students' needs | 5 | 4 | 3 | 2 | 1 |
| 30. | I socialize a lot with my friends | 5 | 4 | 3 | 2 | 1 |
| 31. | I like the current social environment at I.S.U. | 5 | 4 | 3 | 2 | 1 |
| 32. | In developing campus policies, student opinion counts | 5 | 4 | 3 | 2 | 1 |
| 33. | Students frequently engage in bull sessions | 5 | 4 | 3 | 2 | 1 |
| 34. | Varsity athletic events generate a lot of student enthusiasm and support | 5 | 4 | 3 | 2 | 1 |
| 35. | The grading system at I.S.U. is generally fair | 5 | 4 | 3 | 2 | 1 |
| 36. | There are many opportunities to get involved in clubs and organizations | 5 | 4 | 3 | 2 | 1 |
| 37. | Students volunteer their time for community service projects | 5 | 4 | 3 | 2 | 1 |

Strongly Agree	5
Agree	4
Neutral	3
Disagree	2
Strongly Disagree	1

Please circle your response

38. I am glad that I came to Iowa State University	5	4	3	2	1
39. There are many opportunities to attend cultural events	5	4	3	2	1
40. The campus at I.S.U. is attractive and well maintained	5	4	3	2	1
41. If you ask, most instructors will go out of their way to help you	5	4	3	2	1
42. Students have the opportunity to develop intimate personal relationships	5	4	3	2	1
43. I have been treated unfairly at I.S.U.	5	4	3	2	1
44. Students know where to go when they have problems	5	4	3	2	1
45. There is an extensive program of intramural sports	5	4	3	2	1
46. Students seek advice from one another	5	4	3	2	1
47. My advisor shows a personal interest in me	5	4	3	2	1
48. Students' problems are promptly resolved	5	4	3	2	1
49. Adequate recreational facilities on campus are available for student use .	5	4	3	2	1
50. My contact with most administrators has been helpful	5	4	3	2	1
51. There is adequate help in planning an academic program	5	4	3	2	1
52. I know how to become involved in campus activities	5	4	3	2	1

Strongly Agree 5
 Agree 4
 Neutral 3
 Disagree 2
 Strongly Disagree 1

Please circle your response

53. Students have the opportunity to understand people whose backgrounds are different from their own 5 4 3 2 1
54. I would probably not attend college if the degree were not so necessary for getting a good job 5 4 3 2 1
55. I will probably do graduate work after finishing college 5 4 3 2 1

APPENDIX D. EXPLANATION OF PROJECT AND CONSENT FORM

Iowa State University of Science and Technology



Ames, Iowa 50011

DEAN OF STUDENTS OFFICE

Orientation and Student Programs
206 Student Services Building
Telephone: 515-294-1022

A study of the characteristics of individuals who participate in campus activities is being conducted on the Iowa State University campus. Since you are a member of the Cyclone Aide Program, your participation is requested.

If you choose to participate, you will be asked to complete two assessment instruments: the Student Development Task Inventory and a survey of student opinion about the overall environment at Iowa State University. The instructions are included with each instrument and the total time to complete both is about 35 to 40 minutes. The results will be kept completely confidential, and all names will be removed when the project is finished.

Your participation in this study is voluntary and you may discontinue participation at any time. Your results are important in understanding the ways in which students today benefit from some aspects of university life. If you have any questions, feel free to phone Alyce Holland at 232-2382.

One purpose of the Student Development Task Inventory is to help students learn more about themselves. You will be retested at a later date, and at that time may wish to review your results on this inventory. In addition, if you wish to receive a summary of the results, please indicate on the consent form below.

Thank you for your consideration.

Alyce Holland
Graduate Student
232-2382

Augustine W. Pounds, Ph.D.
Dean of Students

_____ I agree to participate in the Characteristics of Students who Participate in Campus Activities study.

Signed _____

Date _____

_____ I wish to receive a copy of the results.

APPENDIX E. LETTER TO POTENTIAL MEMBERS OF CONTROL GROUP

Iowa State University of Science and Technology



Ames, Iowa 50011

DEAN OF STUDENTS OFFICE

Orientation and Student Programs
206 Student Services Building
Telephone: 515-294-1022

Dear

A study of the characteristics of individuals who participate in campus activities is being conducted on the Iowa State University campus. Since you were a finalist in the 1986 Cyclone Aide selection, your participation is requested.

If you choose to participate, you will be asked to complete two assessment instruments: the Student Development Task Inventory and a survey of student opinion about the overall environment at Iowa State University. The total time to complete both is about 35 to 40 minutes. The results will be kept completely confidential, and all names will be removed when the project is finished.

The assessment instruments will be administered in Room 256, Student Services Building at the following times:

February 5, 1986 at 4:00 p.m.
February 6, 1986 at 7:00 p.m.

Your participation in this study would be voluntary and you could discontinue participation at any time. Your results are important in understanding the ways in which students today benefit from some aspects of university life.

You will be called in a few days to see if you are willing to participate, and to establish a time that is convenient with you. Thank you for your consideration.

Sincerely,

Augustine W. Poulos, Ph.D.
Dean of Students

Alyce Holland
Graduate Student
232-2382

APPENDIX F. CONSENT FORM

_____ I agree to participate in the Characteristics of Students
who Participate in Campus Activities study.

Signed _____

Date _____

_____ I wish to receive a copy of the results.
