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A study of student orientation attendance patterns as they relate to factors affecting persistence

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A study of student orientation attendance patterns as they relate to factors affecting persistence

by

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CHAPTER I. INTRODUCTION

Higher education has been viewed as an important step toward career and personal success. One of the traditional indicators of educational achievement has been attainment of a baccalaureate degree. However, between 40 and 50 percent of students who enroll at colleges and universities do not complete a degree program (Astin, 1975; Iffert, 1957). This lack of persistence occurs for a variety of complex reasons.

Researchers have identified the introduction of a student to the college or university environment as an important factor in determining one's success or failure, defined in terms of persistence, in higher education. This phenomenon, described as "orientation" to the university environment, is one which begins at different times for different individuals. Some new students may have had a familiarity with and a potential commitment to an institution for most of their lives, while others may decide to attend a particular institution just prior to enrollment.

Boyer (1987) cites the first weeks on campus as a critical period when attitudes about college life take shape. His description of feelings of anomie among new freshmen underscores the need for colleges to address student expectations, needs and attitudes soon after the arrival on campus. He recommends that colleges should be committed and creative in helping students adjust to college life so that quality of learning may be enhanced.

In a comprehensive study of programs designed to improve retention, What Works in Student Retention, Beal and Noel (1980) identified 12 kinds of single-facet retention approaches. Among those, orientation was one of the strategies reviewed, and significant improvements in retention rates have been found by those institutions which focus on orientation as a retention strategy.

Research during the past 20 years has produced a substantial body of knowledge about students in higher education. This research has focused on a variety of areas, and student enrollment has been one of the most extensively studied. In the forward of a comprehensive study on student retention, Cope (1980) describes the evolution of retention research:

> Early studies on retention (before World War II) were largely descriptive. Then, after World War II, the emphasis in retention research shifted to prediction. In the late 1950s, attention shifted to the "fit" between student and institution. In the 1960s, attention shifted to typologies of student dropouts and to the experiences students were having while in attendance. It was not until the 1970s that serious consideration was given to the institutions themselves. (p. v)

The final report of the Carnegie Council on Policy Studies in Higher Education (1980), Three Thousand Futures: The Next Twenty Years for Higher Education, cited declining enrollments as the most dramatic feature of higher education during the next 20 years. Noel (1985) identified three problems facing higher education today: a diminishing student pool due to a decline in the number of high school graduates and a decline in the college-going rate among 18 to 19-year-old male high school graduates, attrition rates and

students' analyses of the cost-benefit of their education. In addressing these concerns, retention studies have been important tools for administration and faculty in assessing the issue of which students are more likely to drop out and the subsequent impact on the institution.

Tinto (1975) proposed a theory of persistence which stresses the importance of integration into the academic value system and the social system of the university. Tinto identifies family background, individual attributes and pre-college schooling as characteristics which have an indirect influence on persistence.

Lenning et al. (1980) describe three components which contribute to retention: student characteristics, environmental characteristics, and the interactions between student and institution. Upcraft et al. (1981) identified six developmental issues which students deal with in college: (1) developing intellectual and academic competence, (2) establishing and maintaining interpersonal relationships, (3) developing sex-role identity and sexuality, (4) deciding on a career and life style, (5) formulating an integrated philosophy of life, and (6) maintaining personal health and wellness. They propose that effective orientation programs are those which enhance success in college by addressing these developmental issues. In designing orientation programs, institutions may differ in the extent to which academic, social and personal development issues are stressed.

Need for the Study

While all colleges and universities offer some type of orientation program for entering students, they vary widely in scope, emphasis and timing. An institution's orientation program may change from year to year, and may offer specialized programs to targeted audiences (i.e., adult, minority, transfer students, etc.); however, program content varies little during the prescribed formal orientation period.

Studies which assessed orientation as a retention tool have focused on whether students attended an orientation program, and did not differentiate among students attending orientation at selected times. Very little is known or understood about the characteristics and demographics of students who choose to attend a university's formal orientation program at the various times it may be offered.

Purpose of the Study

The primary purpose of this study was to examine the persistence patterns and characteristics of students at Iowa State University in relation to the dates when they attended the required pre-college orientation program during the summer and fall of 1985. This investigator perceived that increased information about differences in these students may lead to a greater understanding of their special needs and the ability to develop orientation programs which would be responsive to those needs. The emphasis of the study is on the patterns of orientation attendance and a descriptive analysis of those students who attended activities at three distinct times.

Identifying differences between students who did or did not persist through the second year of college was a goal of the study. While several theories concerning student persistence and retention have been proposed, Tinto's (1975) theory of persistence is utilized as the foundation for this research. Additional information on Tinto's model may be found in the Review of Literature.

Another purpose of this study was to obtain students' perceptions regarding utilization of recommendations on involvement in learning at Iowa State University. The National Institute of Education commissioned a study group to examine conditions of excellence in American higher education. The final report of the study group (National Institute of Education, 1984) contained recommendations for improving undergraduate education. This investigator was particularly interested in determining if students attending orientation at selected times would perceive Iowa State University's implementation of these recommendations differently. This part of the study may be beneficial to administrators and faculty members who are assessing involvement in learning.

Hypotheses

This study examined students attending the orientation program at Iowa State University during the Summer and Fall of 1985. Due to the emphasis of the study on the attendance patterns of students at a specific time, they were grouped into three categories:

1. Students attending orientation during the first week of the summer program (late May, early June).
2. Students attending orientation during the last week of the

summer program (late June).

3. Students attending orientation immediately before the start of fall semester (late August).

The following hypotheses were addressed as they relate to these three groups:

1. There will be no difference in persistence among students attending during these three orientation periods.
2. There will be no difference in persistence between students who initially enrolled as freshmen or transfer students.
3. There will be no difference among students in these groups in assessing their first semester feelings at Iowa State.
4. There will be no difference among students in these groups in assessing their freshman year involvement in learning.
5. There will be no difference among students in these three groups in evaluating aspects of campus life.
6. There will be no difference in evaluation of campus resources by students in these three groups.
7. There will be no differences among students in these groups in evaluating undergraduate education.
8. There will be no difference in students in these three groups on various pre-college persistence predictor variables (i.e., ACT scores, high school rank and orientation placement test scores).

Defining the Vocabulary

Rather than a finite program occurring within a certain period of time, orientation is a process by which new students learn about and adapt to a college or university. A number of definitions for orientation can be found in the literature. Hawkes and Johns (1929) believed orientation meant to become adjusted to an environment, to determine one's life work, to find one's place in life and assume the burdens and responsibilities of that place. Dannells and Kuh (1977) summarized orientation as an attempt to provide a balanced introduction to the constraints imposed by, and the opportunities available in the college environment and to enable students to more clearly define their educational purpose. Upcraft and Farnsworth (1984) define orientation as any effort on the part of the institution to help entering students make the transition from their previous environment to the collegiate environment and to enhance their success in college.

Traditional definitions of retention suggest that the appropriate measure of successful persistence is the attainment of a degree. However, Lenning et al. (1980) differentiate among four main student types: (1) the persister, who continues enrollment without interruption; (2) the stop-out, who leaves the institution for a period of time and then returns for additional study; (3) the attainer, who drops out after achieving a particular goal but prior to graduation; and (4) the drop-out, who leaves the institution and does not return for additional study at any time.

Marchese (1985) cited a vocabulary shift which occurred during the 1970s and marked a change in the emphasis of retention studies.

Earlier studies emphasized persistence and implied a responsibility on the part of students to remain enrolled, while retention implies a responsibility on the part of the institution to provide programs and services which assist students in staying enrolled. Most recently, Tinto (1987) has proposed a theory of departure from higher education, differentiating among individual, institutional and system departure.

For purposes of this study, the investigator has defined orientation as a program of activities and events which is required of new students prior to enrollment. The study specifically refers to summer and fall orientation programs at Iowa State University. Persistence was designated by those students who initially enrolled at Iowa State University during the Fall of 1985 and who were continuously enrolled through the Spring of 1987.

Limitations of the Study

This study was designed to examine attendance patterns of students at Iowa State University orientation programs. Summer orientation is a five-week program beginning in late May and ending in late June. Only three of the seven undergraduate colleges offer orientation activities throughout this entire period. All students who are planning to major in Business Administration are initially enrolled in the Pre-Business curriculum in the College of Sciences and Humanities. Because of the diversity of curricular offerings and the size of the college, this study was limited to students enrolling in the College of Sciences and Humanities.

Another limitation involved the unavailability of complete data on all subjects in the study. Administrative data files are completed on new students at the end of their first semester of enrollment; therefore, students who did not persist past the first semester have incomplete files. While some of this information was retrievable from other sources and was recovered for use, there are incomplete data on some subjects. Another reason for incomplete records is the university does not require some information (ACT scores, high school rank and some placement examinations) on transfer students that is required of other entering students. While these are recognized as important predictor variables for success and persistence in college, such data was not obtainable on all students.

A final limitation was the survey instrument response rate from students in the three selected orientation periods and between persisters and nonpersisters at the university. There was an anticipated decline in responses between orientation periods one, two and three which did not occur. However, there was a significantly larger response from enrolled than from nonenrolled students. The implications of these differences will be discussed.

The methodology of this study did not allow for the examination of antecedent variables which may have an impact on college success. Care should be taken in attributing responsibility for persistence to the impact of orientation activities.

CHAPTER II. REVIEW OF LITERATURE

The purpose of this study was to examine the impact of orientation programs on persistence in college students. An initial phase of the literature review involved the completion of an ERIC computer search and reviews of the Current Index to Journals in Education and Dissertation Abstracts International. The investigator found few usable documents on the subject of student persistence related to orientation. Subsequently, separate literature reviews were completed on persistence and orientation.

A review of the literature reveals an extensive body of research on the topic of student persistence and attrition. Student retention has been addressed in a number of national studies, as well as numerous single and multi-institution studies. The first part of this chapter will present an overview of the theories which have been developed regarding student persistence and the results of related studies. It is important to note that the emphasis of recent literature about retention has been manifested in programming discussions rather than reporting of research data.

On the contrary, the area of orientation to college has not been as extensively examined. There have been few studies completed; however, these are generally single institution studies which cannot be generalized to other settings.

Persistence

While research on the phenomena of students leaving institutions prior to graduation has been conducted for a number of years, a common

problem of much early research was the lack of differentiation between behaviors associated with this attrition. Initial studies focused only on students who did not obtain a baccalaureate degree within a four-year period; the first national study reported that approximately 60% of entering freshmen did not graduate 'on time' (McNeeley, 1938). A similar study by Iffert (1957) reported that over 40% of entering students would never complete a baccalaureate degree, while only an additional 40% would complete the degree within four years from the institution of first enrollment.

A review of research completed by Summerskill (1962) examined factors which are usually associated with attrition, and confirmed earlier reports that college completion rates had remained constant at approximately 40%. Summerskill was also one of the first to recognize the differences in the definition of 'attrition rate.' The term had been used to describe the percentage of students lost to a particular division within a college, lost to the college as a whole, or lost to higher education.

Knoell (1960) focused on the methodology of research which had been used in retention studies. She classified studies into four categories: the census study which established base-line data for particular institutions or states, the autopsy study which asks dropouts to self-report information at the time of withdrawal, the case study which examines students who were admitted to the institution as high risks, and the prediction study in which variables are related to success and failure in college. Knoell (1966) later described the need for a basic research design which could serve as a

comprehensive model for the flow of students in higher education.

In addition to Knoell's four categories of retention studies, Marsh (1966) described two additional categories: the philosophical/theoretical study which recommends ways to decrease student dropouts and the descriptive study which profiled students who leave and what their college environment had been.

Concern regarding research on withdrawal has been expressed by a number of authors. Gekowski and Schwartz (1961) identified several limitations, including the fact that attrition studies tend to concentrate on academic factors, while correctly believing that multiple factors operate concurrently to produce attrition. Cope (1968) expressed concern that few studies looked beyond student demographic characteristics to explore the social/psychological influences on dropping out, and that most studies are single variable and over-simplified the explanation of dropping out.

As cited in Chapter I, difficulty with the definitions used in early research on attrition was a cause for much criticism. In a review of attrition studies, Panos and Astin (1968) concluded, "The results of many attrition studies are not comparable because they in fact deal with different phenomena" (p. 70). Astin (1975) completed a longitudinal and multi-institutional study on a sample of 243,000 students in 1968 with followup on 101,000 students four years later. The results of this study indicated that the primary reasons for dropping out for both men and women are boredom with courses, financial difficulties, dissatisfaction with requirements or

regulations and change in career goals. Astin (1975) also identified a number of student background characteristics that may be predictive of dropping out or persisting: ability, secondary school grades, socioeconomic status, educational aspirations and students' own predictions about their chances of finishing college.

The concern regarding retention studies led researchers, beginning in 1957 with Iffert's study, to develop categories for use in classifying dropouts to more clearly differentiate among those dropping out.

Rose and Elton (1966) examined personality data on incoming freshmen at the University of Kentucky and compared responses between (1) students who withdrew within one semester, (2) students who persisted successfully through one year, (3) students who persisted unsuccessfully through one year, and (4) students who persisted successfully, but voluntarily did not return for the second year. They found that voluntary withdrawals were more hostile and tended to be more maladjusted and less interested in scholarly activities than the successful persisters.

Savicki et al. (1970) compared three withdrawal groups (dismissals, defaulters and dropouts) and two persister groups (successful and probation) on a factor-analyzed scale of students' role orientations toward college. They concluded that more precise definitions than just dropout or persister lead to more understandable results.

Rossman and Kirk (1970) examined differences in ability, personality characteristics and attitudes between students who

returned to the University of California-Berkeley for their sophomore year and those who failed to return.

Bean and Covert (1973) discriminated among college persisters, withdrawals and academic dismissals using measures of scholastic aptitude and personality. They report that academic aptitude measures discriminated between both male and female persisters and academic dismissals, whereas personality measures discriminated for females only.

Eckland (1964) believed that leaving college at some point did not necessarily indicate a student's termination of higher education and completed a longitudinal ten-year study of students who dropped out of the University of Illinois. He suggested that the normal tenure for completion to graduation was longer than four years and that longitudinal follow-up studies would reduce the national attrition rate from the accepted 40% toward the 30% level.

In a major review of the literature, Pantages and Creedon (1978) examined studies of college attrition conducted from 1950-1975. They reviewed a variety of factors which had been studied in relation to attrition and drew conclusions from existing research. They reported that the demographic and academic factors which indicated a positive correlation to persistence are high school rank and grade point average, scholastic aptitude, first term grades, study habits, motivational level, commitment to college, vocational/occupational goals, educational interests, parental and peer influence and certain personality traits. Those factors which have not been proven significant include sex, socioeconomic status, hometown location, size

and type of high school and reasons for attending college. Pantages and Creedon (1978) also examined research dealing with the college environment, financial factors and the reasons students give for dropping out. They conclude that "attrition is the result of an extremely intricate interplay among a multitude of variables" (Pantages and Creedon, 1978).

Bean (1980) adapted a causal model from employee turnover in work organizations to study attrition in institutions of higher education. The model was significant in analyzing the process of student attrition, with institutional commitment found to be the most important variable in explaining dropping out for students in both sexes.

Spady (1970) utilized Durkheim's theory of suicide in developing his theory of why students drop out. He suggested that the decision to leave a particular social system is a result of a complex social process which is influenced by family and previous educational background, academic potential, normative congruence, friendship support, intellectual development, grade performance, social integration, satisfaction and institutional commitment.

A review of the literature by Tinto (1975) caused him to suggest that knowing the degree to which certain variables relate to attrition is not an indication of how certain variables influence attrition. Tinto also proposed the need for theoretical models describing the process of withdrawal and developed a conceptual schema which modified Spady's model. Tinto assessed previous research as deficient in defining the phenomena being studied and distinguished between the

academic and social domains into which a student must become integrated. Specifically, Tinto (1975) identified two variables:

1. educational goal commitment is the level of expectation and intensity with which that expectation is held, and
2. institutional commitment is whether an individual's educational expectations involve specific institutional components which guide him toward a particular institution.

He believed the interplay between these two variables and the characteristics of the institution could be utilized to explain the attrition/transfer patterns of students.

Pascarella and Terenzini (1977, 1979) and Terenzini and Pascarella (1978) have conducted a number of studies to validate the constructs of Tinto's model of persistence. They concluded, among other findings, that pre-college characteristics were of less importance than post-matriculation experiences and that faculty contacts on intellectual and course-related concerns were most important in fostering social and academic integration. Pascarella and Terenzini (1980) constructed a five-scale measure utilized to assess academic and social integration. These scales involved peer group interaction, interactions with faculty, faculty concern for student development and teaching, academic and intellectual development, and institutional and goal commitment. Subsequent study utilizing these scales supported these constructs and the predictive validity of Tinto's model.

Healy (1983) developed measures of Tinto's concepts of goal commitment and institutional commitment and validated them in terms

of their usefulness in identifying first- to second-year college persisters. She concluded that a student's pre-enrollment, nonintellective characteristics are useful in identifying students who are likely to persist.

Pascarella and Chapman (1983) investigated Tinto's model in different types of institutions. Their results also supported the predictive validity of the model, but indicated differences between types of institutions. Social integration was more significant in four-year primarily residential institutions, while academic integration was more significant at two- and four-year primarily commuter institutions in reducing attrition rates.

Pascarella et al. (1986) also utilized Tinto's model in testing an institutional intervention on student withdrawal behavior. Using pre-college orientation as an intervention designed to facilitate student integration into the institution's social and academic systems, they report that exposure to orientation had the third largest total effect on freshman year persistence of 14 variables examined. While an important element of an orientation program's effect was indirect, it had significant positive effects on social integration and related institutional commitment.

Tinto (1987) has specified an interactive model of student departure which describes the longitudinal process of individuals leaving institutions of higher education. The model indicates that institutional departure arises from a longitudinal process between an individual and other members of the academic and social systems

of the institution. The individual's experiences modify the intentions and commitments to either re-enforce persistence or enhance the likelihood of leaving. Tinto postulates that experiences in the formal and informal components of the academic and social systems of the institution have distinct though interrelated impacts on differing forms of institutional departure. He also describes colleges as systematic enterprises comprised of linking interactive parts, formal and informal, academic and social.

Orientation

Orientation programs have been addressed in the literature by a number of authors. In an early review, Shaffer (1962) suggested a rationale for such programs:

> The major purpose of orientation to higher education is to communicate to the new student a concept of college as a self-directed, intellectually-oriented experience. Orientation should contribute to the student's understanding of the relevance of higher education to his life and problems. (p. 273)

Knode (from Black, 1970) identified 10 objectives for orientation: to familiarize the students with regulations, methods and campus; to give information and advice relative to college life and problems in general; to complete the routine of registration; to make freshmen feel welcome; to establish a basis of contact with students upon which personnel and guidance procedures may be built; to impart knowledge of college history, tradition, customs, etc.; to give an introduction to the campus; to extend a welcome and make provision for acquaintance; to give information as to student conduct

and responsibilities; and to provide information as to student activities and organizations.

Others have addressed the goals of orientation programs from a variety of approaches. Lee and Froe (from Black, 1970) identified the following four basic goals: aiding the student in becoming acquainted with the educational facilities offered by the college or university, giving the educational institution an opportunity to evaluate each student, acquainting the student with the campus personality and community, and acquainting the student with him or herself and his or her aspirations and potential.

Upcraft and Farnsworth (1984) described four orientation goals: to help students with their academic adjustment to college, to help students with their personal adjustment to college, to help the families of entering students understand the experience and to help the institution learn more about its entering students. More specific goals, such as the completion of the registration process in a humane way, the dissemination of information, an awareness of the educational and career resources and relationship building, were identified by Butts (1971).

Fitzgerald and Busch (1962) cited two philosophical theses which are implemented in orientation programs. They address a microcosmic view, in which the concern is to direct the student to his or her immediate relationship to the institution and a macrocosmic view, which places the student in a position within the institution in terms of the functions and goals of higher education.

Iowa State University's philosophy of orientation document (Philosophy of Orientation Task Force, 1983) states that orientation participants should understand the pragmatic curricular focus, realize the importance of learning, recognize the adult learner role and appreciate the personal aspects of the university. The focus of the program is to meet the matriculation needs of new students and to acquaint their parents with the institution.

Moore et al. (1981) identified similar student needs to Kramer and Washburn (1983), who examined successful orientation programs and concluded with eight major classifications of orientation-related needs: academic advisement and information; career advisement; help making the emotional transition to college; help with understanding requirements, rules and regulations; help in becoming geographically oriented to the new locale; help in making the social transition to college life; help in making the intellectual transition to college; and help in setting academic and personal goals. An intensive orientation workshop prior to making the enrollment commitment was supported by Chickering (1973). Atkinson et al. (1971) cautioned against accepting orientation programs as intrinsically good educational experiences since many present an inappropriate 'common' view of the institution which does not exist after a student enrolls.

As cited in Chapter I, existing research on orientation has been primarily limited to single institutions and has often been inconclusive. Brinkerhoff and Sullivan (1982) identified two problems associated with research outcomes on orientation: (1) that there are few comparative studies, and (2) that reported studies are frequently

assessments of specific programs rather than orientation in general.

Orientation studies, in addition to identifying student pre-college needs, have indicated that some programs are successful in easing the transition and increasing retention. Rising (1967) found that participation in a prefreshman orientation program increased chances of remaining enrolled at the beginning of the sophomore year by 50 percent and increased the chances of receiving some degree by 50 percent. His conclusion was that this effect was due to changes in student attitude rather than academic preparedness. Similarly, Robinson (1970) reported that attending orientation resulted in a higher rate of adjustment and a greater likelihood of seeking assistance at the institution to solve personal problems. Chandler (1972) discovered a difference between those participating and not participating in orientation, indicating that participants were more likely to obtain better grades, drop out of college less frequently and participate in more organized activities.

However, several research studies have indicated little or no positive effect from participation in orientation. Cole and Ivey (1967) found that attendance at orientation made little difference in college student attitudes or success. Terranova (1976) examined student attitudes using a semantic differentiation instrument. While several scales were more positive, the association with other good students at orientation resulted in students feeling more worthless and haphazard. No decrease in the degree of alienation of orientation attendees toward the university was reported by Herron (1974).

Other studies also question the impact of orientation programs. Rothman and Leonard (1967) used experimental and control groups and studied students who did and did not participate in a semester-long orientation course. They found no difference in grade point average, attrition or a study of values at the end of the first semester, despite anticipating that significant impact was being made. Kopacek (1971) found that it was possible to design orientation programs which resulted in statistically significant difference in mean grade point average and in level of knowledge about campus, but that voluntary withdrawal and academic dismissal were not affected by orientation programs. Donk and Hinkle (1971) supported Cole and Ivey's (1967) premise that attendance at an orientation program makes no appreciable difference in college student attitudes or success.

Boyer (1987) found that students have little sense of being inducted into a community during the first critical weeks on campus. His recommendations for successful student integration into the university include a preterm program for all undergraduates that may extend into the first semester, a special convocation at the beginning of the freshman year to formally receive the entering class, a short-term credit course to introduce students to the traditions and expectations of the campus, and special focus on nontraditional students. Boyer also advocates the leadership of the institution's president in introducing students to the college.

Tinto (1987) also addresses orientation programs which fail to provide information in a form which is readily available or

understandable by new students. He asserts that the utility of orientation programs for student retention is not limited to student integration, but that assessment of the character of student needs can begin with orientation.

Although there is conflicting evidence regarding the influence of orientation programs on student persistence, research generally indicates that participation can assist students in making the social and academic adjustment to the university. Orientation can also help students establish interpersonal relationships, deal with career choice instability, and enhance college success.

Summary

The issues of student persistence and attrition have been extensively examined. While studies have shown conflicting evidence, researchers have concluded that there are a number of pre-college characteristics which are predictors of student success. Student attrition is the result of complex interaction between a number of variables, including a student's educational goal commitment and institutional commitment.

Orientation is an important component of the matriculation process which can positively impact the likelihood of student persistence. Research has generally indicated a positive correlation between participation in orientation and persistence.

CHAPTER III. METHODOLOGY

This study examined differences among students who attended required orientation activities at selected times. This chapter describes the subjects, the instrumentation, and procedures of the study.

Subjects

The subjects for this study were 740 students who participated in orientation activities at Iowa State University during the Summer and Fall of 1985. It was determined that all participants from the identified orientation periods should be included in the sample. This eliminated any bias in sampling the identified population.

Of the target population, 32 students never enrolled at ISU and 17 students had no available address. The accessible population for the study was 691 students.

Instrumentation

As discussed in the previous chapter, research has identified a number of variables which are predictors of student persistence. Also, a number of institutions have utilized survey instruments in assessing the behaviors and attitudes of students who leave higher education. This investigator developed a survey instrument by utilizing components of instruments from the University of California, Berkeley; McKendree College; the University of Michigan; and the

Council for the Advancement of Small Colleges. Additional items were developed to assess students' use of campus resources and, for those students no longer enrolled, to determine the factors which influenced their departure. The investigator used recommendations for improving higher education from the National Institute of Education's (1984) report as a foundation. A section of the survey instrument asks subjects to assess Iowa State University's implementation of the nine recommendations which pertain to undergraduate education.

The instrument was determined to have high face validity, based on the inclusion of variables commonly found in the literature on retention and on the expert input process utilized in the development of individual items.

Format

The final step in developing the instrument was designing the format of the survey. The initial section requested demographic information not available from institutional data. The order of the items was randomly determined in the three sections used to assess first semester feelings, involvement in learning during the freshman year, and various aspects of campus life. The section on campus resources was arranged alphabetically to avoid discrimination between services. The section on recommendations to improve undergraduate education was listed in the same order as recommendations included in the previously mentioned report. A Likert-type, five-point response

scale was developed for each category with responses ranging from 'strongly agree' to 'strongly disagree', 'always' to 'never', 'very satisfactory' to 'very unsatisfactory', and 'excellent' to 'poor'.

All students received the same copy of the instrument. The final section of the survey was completed only by those students who were no longer enrolled at the institution. A Likert-type, five-point response scale was also utilized to indicate to what extent certain factors influenced students' decisions to leave the institution. A copy of the survey instrument may be found in Appendix A.

Procedure

Pilot testing

Following the initial item development, the survey was distributed to a panel of experts who assisted in revising the instrument. The resulting first draft of the instrument was pilot tested with a class of first-term students in the College of Sciences and Humanities. This group was determined to be representative of the sample who would be receiving the survey. Feedback was solicited on format, individual items and time and ease of completion. The responses from this class led to minor revisions in the final version of the survey.

Data collection

The distribution and collection of surveys were planned to obtain a maximum response rate. The first mailing occurred during the third week of Spring semester, 1987, sufficiently after the start of the

new term and prior to mid-term examinations. The initial mailing included a coded survey with printed return address and prepaid return postage and a cover letter requesting participation in the research project (see Appendix B). A follow-up mailing, including an additional copy of the instrument and different cover letter (see Appendix C) was sent approximately two weeks later. Because nonenrolled students were underrepresented in the group of respondents, a final mailing was sent to all nonenrolled nonrespondents. This mailing included a copy of the survey and a different cover letter (see Appendix D). Table 1 shows the response rate of enrolled and nonenrolled subjects by orientation period.

The Iowa State University Committee on the Use of Human Subjects in Research approved this study and determined that the confidentiality of data was assured and that the rights and welfare of students were adequately protected.

Table 1. Comparison of survey results by orientation period

Orientation period	Persister	Persister returns		Nonpersister	Nonpersister returns	
	n	n	%	n	n	%
Period 1	169	106	62.7	44	16	36.4
Period 2	179	102	56.9	60	26	43.3
Period 3	151	80	52.9	89	23	25.8

Additional data

In addition to responses from the survey instrument, the sample was matched by social security number to obtain additional institutional data on each respondent. Where there was not a file available for matching purposes, the data were obtained from new student orientation files and included in the analysis. Students were identified by social security number to assure confidentiality. Institutional items included in the study were sex, high school rank, admission status and ACT composite.

Data preparation

All survey instruments were reviewed for uniformity and corrected where possible. A codebook was developed which identified the location and columns for each item. The coded surveys were keypunched at the ISU Computation Center.

Following the development of this initial file, it was merged with another data set by staff in the Institutional Research Office. Where the student information could not be merged, data on a number of variables was obtained from orientation files in the Test and Evaluation Service and hand entered by the investigator.

Frequencies were run on the data and no errors were found. The verified data set was stored in the computer for future use.

Identification of composite variables

Individual items were subjected to factor analysis using principal factoring with varimax rotation. A number of factors were identified:

three related to first semester feelings, three related to involvement in learning, two related to campus life, and three related to undergraduate education.

Factors were formed by including items loading .50 or greater, including items falling between .40 and .50 if related to other items in the factor and usually rejecting items loading below .40. This investigator examined eigen values > 1.00 and plotted values to determine inclusion of specific variables. The general emphasis of the group of questions was used to develop factor labels. Factor analysis results, factor categories, and reliability information are included in Tables 2 through 13.

Table 2. Factor analysis results on first semester feelings items

Item no.	Factor 1	Factor 2	Factor 3	Factor 4
A6	.87[a]	-.07	-.10	-.06
A5	.86[a]	-.11	-.15	.05
A3	.29	-.16	-.20	.21
A2	-.17	.64[a]	.16	.16
A1	-.13	.59[a]	.19	-.13
A7	.00	.26	-.03	.07
A9	-.06	-.00	.64[a]	-.01
A8	-.15	.15	.42[a]	.00
A4	.01	.15	.01	.66

[a]Items loading on factors.

Table 3. Factor categories on first semester feelings items

Major categories	Item no.	Item statements
Factor 1 Time management	A6	I had difficulty managing my time.
	A5	I had difficulty developing proper study habits.
Factor 2 Academic preparation	A1	My high school academic preparation was adequate.
	A2	I was confident about my ability to succeed in college.
Factor 3 Academic satisfaction	A8	My first semester grades were about what I expected them to be.
	A9	The number of credits I carried was about right for me.

Table 4. Reliability information on first semester feelings factors

Factors	No. of items	Mean	Standard deviation	Average correlation	Alpha
Factor 1 Time management	2	3.29	2.24	.77	.86
Factor 2 Academic preparation	2	3.75	1.71	.40	.57
Factor 3 Academic satisfaction	2	3.30	1.67	.29	.43

Table 5. Factor analysis results on involvement in learning items

Item no.	Factor 1	Factor 2	Factor 3
B7	.76[a]	-.06	-.06
B6	.75[a]	.13	-.03
B5	.69[a]	.19	-.17
B10	.44[a]	.04	-.06
B2	.06	.77[a]	-.06
B3	.04	.54[a]	.06
B1	.15	.31	-.25
B8	-.15	-.12	.73[a]
B4	-.07	-.10	.54[a]
B9	-.00	.13	.31

[a]Items loading on factors.

Table 6. Factor categories on involvement in learning items

Major categories		Item statements
Factor 4 Social satisfaction	B7	I was satisfied with my social life.
	B6	I was satisfied with the campus environment.
	B5	I was happy in college.
	B10	I got along with other students.
Factor 5 Academic interest	B2	I was interested in school work.
	B3	I attended classes.
Factor 6 Academic discouragement	B8	I lacked self-confidence as a student.
	B4	I became discouraged about class work.

Table 7. Reliability information on involvement in learning factors

Factors	No. of items	Mean	Standard deviation	Average correlation	Alpha
Factor 1 Social satisfaction	3	3.72	2.41	.55	.78
Factor 2 Academic interest	2	3.92	1.35	.42	.59
Factor 3 Academic discouragement	2	2.90	1.55	.39	.55

Table 8. Factor analysis results on campus life items

Item no.	Factor 1	Factor 2
C7	.78[a]	.17
C6	.73[a]	.11
C8	.42[a]	.30
C5	.36	.28
C9	.31	.19
C10	.16	.14
C3	.07	.62[a]
C2	.15	.55[a]
C1	.27	.49[a]
C4	.42	.44[a]

[a]Items loading on factors.

Table 9. Factor categories on campus life items

Major categories	Item no.	Item statements
Factor 7 Class evaluation	C6	My classes, in terms of interest, were
	C7	My classes, in terms of content, were
	C8	The academic requirements of the university were
Factor 8 Support	C3	My parents support of my being on campus was
	C2	My relationships with other students were
	C1	My pre-enrollment orientation program was
	C4	The concern and help I received from faculty and staff was

Table 10. Reliability information on campus life factors

Factors	No. of items	Mean	Standard deviation	Average correlation	Alpha
Factor 1 Class evaluation	3	3.55	1.87	.44	.70
Factor 2 Support	4	3.75	2.68	.31	.64

Table 11. Factor analysis results on undergraduate education items

Item no.	Factor 1	Factor 2	Factor 3
D1	.64[a]	.04	.17
D4	.60[a]	.20	-.05
D3	.48[a]	.09	.19
D7	.44	.18	.25
D5	.12	.86[a]	.18
D6	.28	.52[a]	.25
D9	.38	.09	.57[a]
D8	.17	.09	.47[a]
D2	-.01	.10	.22

[a]Items loading on factors.

Table 12. Factor categories on undergraduate education items

Major categories	Item no.	Item statements
Factor 9 Relationships	D1	Faculty and other resources are allocated toward helping first- and second-year students.
	D4	Regular advising and guidance are provided from freshman through senior year.
	D7	The knowledge and skills necessary for graduation are clearly articulated by the university.
	D3	Student/faculty discussion of intellectual issues is encouraged.
Factor 10 Extracurricular involvement	D5	Extracurricular activities are readily available to students.
	D6	Students are encouraged to participate in events on campus.
Factor 11 Curriculum satisfaction	D8	There is adequate emphasis on liberal arts in each curriculum.
	D9	The curriculum helps develop skills in problem-solving, analysis and communication.

Table 13. Reliability information on undergraduate education factors

Factors	No. of items	Mean	Standard deviation	Average correlation	Alpha
Factor 1 Relationships	3	3.28	2.22	.34	.60
Factor 2 Extracurricular involvement	2	4.03	1.73	.54	.70
Factor 3 Curriculum satisfaction	2	3.69	1.48	.33	.49

The composite variables identified through factor analysis were subjected to analysis of variance in addressing the hypotheses in the study.

CHAPTER IV. FINDINGS

The purpose of this study was to examine differences in persistence and characteristics of students who attended required orientation activities at Iowa State University at different times. Data from the questionnaire utilized resulted in considerable data which was subjected to statistical procedures and analyses.

The first part of the chapter will present item frequencies on important demographic variables. The hypotheses with analysis results will then be presented. Findings from additional analyses are presented at the end of the chapter.

Item Frequencies

Item frequencies and response rates for all questionnaires are listed in Appendix E. The investigator selected items focusing on specific variables which have been identified in the literature as related to retention (place of residence, employment, financing of education). Frequencies for these variables are listed in the following tables.

Table 14 summarizes where subjects lived during their first semester at Iowa State. As expected, the majority of new students lived in Department of Residence housing during their first semester. Table 15 reports the work patterns of students. Nearly half of the subjects have not worked while attending college; those who have been employed have worked both on- and off-campus. Table 16 describes how

Table 14. First semester residence[a]

Type of housing	n	%
Department of Residence	264	75.6
Fraternity or sorority	29	8.3
Off-campus	36	10.3
At home	20	5.7
		.1 (missing)

[a]N = 351.

Table 15. Analysis of student work patterns[a]

Item	n[b]	%
Worked on-campus	87	24.8
Worked off-campus	87	24.8
Worked more than 20 hours/week	46	13.1
Worked less than 20 hours/week	124	35.3
Have not worked as a student	169	48.1

[a]N = 351.

[b]Multiple responses are possible.

Table 16. Financing of college education

Source	n[a]	%
Support from parents/relatives	237	67.5
Student loans	176	50.1
Summer savings	176	50.1
Personal savings	149	42.5
Employment while in college	129	36.8
Educational grants	109	31.1
Scholarships	90	25.6
Spouse's income	8	2.3
Veteran's benefits	5	1.4
Social security benefits	3	.9

[a]Multiple responses are possible.

subjects are financing their college education. The majority of students receive some type of family support, and half of the subjects utilize student loans and summer savings.

In addition to survey results, institutional variables which are related to persistence are identified in Chapter III. Item frequencies on sex, high school rank and status of initial enrollment (direct from high school or transfer) are listed in the following tables.

Table 17 describes the sex of respondents. The majority of respondents are female. Table 18 identifies subjects by high school rank. Over one-third of the students who responded to the survey are

Table 17. Sex of respondents[a]

Sex	Number of respondents	%
Male	138	39.3
Female	208	59.3
	5	1.4 (missing)

[a]N = 351.

Table 18. High school rank of respondents[a]

HSR (%)	Number of respondents	%
0 - 10	122	34.8
11 - 20	51	14.5
21 - 30	51	14.5
31 - 40	50	14.2
41 - 50	23	6.6
51 - 60	20	5.7
61 - 70	13	3.7
71 - 80	3	.8
81 - 90	1	.3
	17	4.8 (missing)

[a]N = 351.

in the top 10 percent of their high school class. Table 19 reports the admission status of respondents. While special orientation programs are available for transfer students, the subjects of this study participated in an orientation program which is primarily designed for new freshman students. Nevertheless, nearly one-fifth of the subjects initially enrolled as transfer students.

Hypotheses

The hypotheses are presented with related statistical analysis results for each hypothesis tested. Where analysis of variance was utilized, the composite variables identified by factor analysis in Chapter III were included. Means and standard deviations for each group may be found in Appendix F.

Hypothesis 1. There will be no difference in persistence among students attending during the three identified orientation periods.

The distribution of subjects by enrollment status and orientation period is shown in Table 20. The hypothesis that there would be no difference in persistence was not rejected (chi square = 2.74, $df = 2$, $p < .25$).

Hypothesis 2. There will be no difference in persistence between students who initially enrolled as freshman or transfer students.

The investigator also was interested in determining whether new freshman or transfer students were more likely to persist through

Table 19. Initial enrollment status of respondents[a]

Enrollment status	Number of respondents	%
New freshman	277	78.9
Transfer	64	18.2
	10	2.9 (missing)

[a]N = 351.

Table 20. Distribution of students by enrollment status and orientation period[a]

Enrollment status	Orientation period		
	Late May	Late June	Late August
Enrolled	105	98	80
Nonenrolled	18	28	22

[a]Chi-square = 2.74; significance = .25.

Table 21. Distribution of subjects by admission status and enrollment status[a]

Enrollment status	Admission status	
	Freshman	Transfer
Enrolled	235	48
Nonenrolled	51	17

[a]Chi-square = 1.84; significance = .17.

the second year of college. The distribution of subjects by admission status and enrollment status is shown in Table 21. The hypothesis that there would be no difference in persistence was not rejected (chi-square = 1.84, df = 2, $p < .17$).

Hypothesis 3. There will be no difference among students in the three identified orientation groups in assessing their feelings about Iowa State University during their first semester.

The composite variables utilized to assess first semester feelings were time management, academic preparation, and academic satisfaction. The analyses for time management ($F(2,348) = 1.94$, $p < .145$), academic preparation ($F(2,348) = .424$, $p < .65$), and academic satisfaction ($F(2,348) = .407$, $p < .66$) produced no significant differences. Table 22 shows the analysis of variance results for time management. Table 23 indicates the analysis of variance results for academic preparation, and the results of academic satisfaction are shown in Table 24.

Hypothesis 4. There will be no difference among students in the three identified orientation periods in assessing their freshman year involvement in learning.

The composite variables used to assess freshman year involvement in learning were social satisfaction, academic interest, and academic discouragement. The analysis for social satisfaction ($F(2,348) = 1.94$, $p < .145$) and academic discouragement ($F(2,348) = 1.83$, $p < .162$) produced no significant differences. The analysis for academic interest

Table 22. Analysis of variance of time management by orientation period

Source of variation	df	Mean square	F
Orientation period	2	2.42	1.94
Residual	348	1.24	

Table 23. Analysis of variance of academic preparation by orientation period

Source of variation	df	Mean square	F
Orientation period	2	.313	.424
Residual	348	.737	

Table 24. Analysis of variance of academic satisfaction by orientation period

Source of variation	df	Mean square	F
Orientation period	2	.283	.407
Residual	348	.695	

($F(2,348) = 4.08$, $p < .018$) produced differences significant at the .05 level. Tables 25 and 26 show the analysis of variance results for social satisfaction and academic discouragement. Table 27 indicates the significant results of the analysis of variance of academic interest.

Table 25. Analysis of variance of social satisfaction by orientation period

Source of variation	df	Mean square	F
Orientation period	2	.904	1.94
Residual	348	.466	

Table 26. Analysis of variance of academic discouragement by orientation period

Source of variation	df	Mean square	F
Orientation period	2	1.100	1.83
Residual	348	.601	

Table 27. Analysis of variance of academic interest by orientation period

Source of variation	df	Mean square	F
Orientation period	2	1.838	4.08[a]
Residual	348	.450	

[a]Significant at the .05 level.

Hypothesis 5. There will be no difference among students in these groups in evaluating aspects of campus life.

The composite variables utilized to evaluate aspects of campus life were class evaluation and support. The analysis for class evaluation ($F(2,348) = .363$, $p < .696$) produced no significant differences. The analysis for support ($F(2,348) = 13.61$, $p < 0.00$) produced differences significant at the .001 level. Table 28 shows the analysis of variance results for class evaluation and Table 29 indicates results for support.

Table 28. Analysis of variance of class evaluation by orientation period

Source of variation	df	Mean square	F
Orientation period	2	.142	.363
Residual	348	.390	

Table 29. Analysis of variance of support by orientation period

Source of variation	df	Mean square	F
Orientation period	2	5.690	13.61[a]
Residual	348	.418	

[a]Significant at the .001 level.

Hypothesis 6. There will be no difference among students in these three groups in evaluating campus resources.

The analysis of variance indicated significant differences on only two items, Department of Residence evaluation (n = 175) and Honors Program evaluation (n = 26); however, the small number of student participants in the Honors Program did not allow any inferences from the data. Table 30 shows the number and F ratio of each item by orientation period.

Hypothesis 7. There will be no differences among students in these three groups in evaluating undergraduate education.

The composite variables utilized to assess undergraduate education were relationships, extracurricular involvement, and curriculum satisfaction. The analyses for relationships ($F(2,348) = .828$, $p < .438$), extracurricular involvement ($F(2,348) = 1.95$, $p < .143$), and curriculum satisfaction ($F(2,348) = .855$, $p < .426$) produced no significant differences between orientation periods. Table 31 shows

Table 30. Analysis of variance of student services evaluation

Item	n[a]	F ratio
Honors program	26	5.180
Residence	175	3.540
Dean of Students	47	2.850
Memorial Union	263	1.490
Minority Student Affairs	30	1.340
Student Health	218	.782
Student Counseling	68	.528
Career development	75	.510
Academic advising	293	.496
Tutoring	78	.348
Financial aid	195	.298
College Classification Office	81	.243

[a]Multiple responses are possible.

Table 31. Analysis of variance of relationships by orientation period

Source of variation	df	Mean square	F
Orientation period	2	.396	.828
Residual	348	.479	

Table 32. Analysis of variance of extracurricular involvement by orientation period

Source of variation	df	Mean square	F
Orientation period	2	1.460	1.95
Residual	348	.748	

Table 33. Analysis of variance of curriculum satisfaction by orientation period

Source of variation	df	Mean square	F
Orientation period	2	.464	.855
Residual	348	.542	

the analysis of variance for relationships. Table 32 indicates the analysis of variance results for extracurricular involvement and the results of curriculum satisfaction are shown in Table 33.

Hypothesis 8. There will be no difference in students in these three groups on various pre-college persistence predictor variables.

The analysis of variance indicated differences between students in the three orientation periods on high school rank, admission status, and ACT composite score. Table 34 reports an ANOVA summary for high

school rank. A significant difference at the .05 level was found between groups. Table 35 describes the Duncan results for the groups revealing that differences occurred between students in groups one and two.

Table 34. ANOVA summary table for students in different orientation periods on high school rank

Source	df	Sum of squares	Mean squares	F ratio
Between groups	2	5312.06	2656.03	7.41[a]
Within groups	331	118559.86	358.19	
Total	333	123871.92		

[a]Significant at the .05 level.

Table 35. Duncan results denoting pairs of groups on high school rank significantly different at the .05 level

Group	Mean	Group Number	G R P 1	G R P 3	G R P 2
Period 1	18.28	1			
Period 2	22.02	3			
Period 3	27.97	2	*		

The distribution of subjects on admission status (new freshman or transfer) is shown in Table 36. A significant difference at the .001 level was found between groups. A significantly higher number of transfer students attended orientation during period three than during periods one and two. The hypothesis that there would be no difference between groups was rejected (chi-square = 44.78, df = 2, $p < .001$).

Table 36. Distribution of subjects by orientation period and admission status

Admission status	Orientation period		
	Late May	Late June	Late August
Freshman	111	114	61
Transfer	12	12	41

[a]Chi-square = 44.78; significance = .001.

The analysis of variance also indicated differences between students in the three orientation periods on ACT composite. Table 37 reports an ANOVA summary for ACT composite. A significant difference at the .05 level was found between groups. Table 38 describes the Duncan results for the groups revealing that significant differences occurred between groups one and two.

Table 37. ANOVA summary table for students in different orientation periods on ACT composite

Source	df	Sum of squares	Mean squares	F ratio
Between groups	2	207.74	103.87	4.99[a]
Within groups	272	5654.43	20.79	
Total	274	5862.18		

[a]Significant at the .05 level.

Table 38. Duncan results denoting pairs of groups on ACT composite significantly different at the .05 level

Group	Mean	Group number	G R P 2	G R P 3	G R P 1
Period 2	21.98	2			
Period 3	22.33	3			
Period 1	23.84	1	*		

One of the items for which analysis of variance produced significant differences was the assessment of the pre-enrollment orientation program. A Likert scale with range from 5 (very satisfactory) to 1 (very unsatisfactory) was utilized for this item. Table 39 shows mean scores and standard deviations by orientation period. Table 40 reports an ANOVA summary for perceptions about the orientation program with significant difference at the .05 level found between groups one and three and groups two and three.

Table 39. Mean scores and standard deviations by students in the three groups in assessing the orientation program

Orientation period	N	Mean	Standard deviation
1	123	3.55	.89
2	126	3.63	.93
3	102	2.77	1.17

Additional analysis was done to determine if the interaction between orientation period and persistence had any effect on responses to the survey. For each of the survey items, a two-way analysis of variance was utilized to analyze differences between responses. A .05 level of significance was set.

Table 41 shows significant differences between respondents in the three orientation periods in utilizing their time. There were no

Table 40. ANOVA summary of students in different orientation periods perceptions of orientation program

Source	df	Sum of squares	Mean squares	F ratio
Between groups	2	48.50	24.25	24.55[a]
Within groups	348	343.69	.99	
Total	350	392.19		

[a]Significant at the .05 level.

Table 41. Two-way ANOVA summary for utilizing time when respondents were classified by orientation period and enrollment status

Source of variation	Sum of squares	df	Mean squares	F ratio
Main effects	11.70	3	3.90	2.86[a]
Orientation period	8.43	2	4.22	3.09[a]
Enrollment status	4.18	1	4.19	3.06
Interactions	.56	2	.28	.21
Residual	471.02	345	1.36	
Total	483.29	350	1.38	

[a]Significant at the .05 level.

significant differences when the data were analyzed by enrollment status. There was no significant interaction between orientation period and enrollment status on this variable.

Table 42 shows significant differences between enrolled and nonenrolled respondents in assessing familiarity with campus resources available for assistance. There were no significant differences when the data were analyzed by orientation period. There was no significant interaction between orientation period and enrollment status on this variable.

Table 43 shows significant differences between respondents in the three orientation periods in assessing their interest in school work. There were no significant differences when the data were analyzed by enrollment status. There was no significant interaction between enrollment status and orientation period on this variable.

Table 42. Two-way ANOVA summary for familiarity with campus resources when respondents were classified by orientation period and enrollment status

Source of variation	Sum of squares	df	Mean squares	F ratio
Main effects	15.68	3	5.22	4.32[a]
Orientation period	7.04	2	3.52	2.91
Enrollment status	9.32	1	9.32	7.71[b]
Interactions	.87	2	.43	.36
Residual	416.89	345	1.20	
Total	433.44	350	1.24	

[a]Significant at the .005 level.

[b]Significant at the .05 level.

Table 43. Two-way ANOVA summary for interest in school work when respondents were classified by orientation period and enrollment status

Source of variation	Sum of squares	df	Mean squares	F ratio
Main effects	7.57	3	2.52	3.81[a]
Orientation period	7.52	2	3.76	5.67[b]
Enrollment status	.14	1	.14	.20
Interactions	3.02	2	1.51	2.28
Residual	228.71	345	.66	
Total	239.30	350	.68	

[a]Significant at the .05 level.

[b]Significant at the .005 level.

Table 44 shows significant differences between enrolled and nonenrolled respondents on whether or not they attended classes. There were no significant differences when the data were analyzed by orientation period. There was no significant interaction between orientation period and enrollment status on this variable.

Table 45 shows significant differences between enrolled and nonenrolled respondents in assessing how happy they were in college. There were no significant differences when the data were analyzed by orientation period. There was no significant interaction between orientation period and enrollment status on this variable.

Table 44. Two-way ANOVA summary on attending classes when respondents were classified by orientation period and enrollment status

Source of variation	Sum of squares	df	Mean squares	F ratio
Main effects	9.55	3	3.18	5.48[a]
Orientation period	2.73	2	1.36	2.35
Enrollment status	6.08	1	6.08	10.47[a]
Interactions	1.75	2	.88	1.51
Residual	200.28	345	.58	
Total	211.59	350	.60	

[a]Significant at the .001 level.

Table 45. Two-way ANOVA summary for happiness in college when respondents were classified by orientation period and enrollment status

Source of variation	Sum of squares	df	Mean squares	F ratio
Main effects	8.45	3	2.82	3.12[a]
Orientation period	.94	2	.47	.52
Enrollment status	7.71	1	7.71	8.54[b]
Interactions	1.05	2	.52	.58
Residual	311.24	345	.90	
Total	320.74	350	.92	

[a]Significant at the .05 level.

[b]Significant at the .005 level.

Table 46 shows significant differences between enrolled and nonenrolled students in assessing their orientation program. There were also significant differences when the data were analyzed by orientation period. There was no significant interaction between orientation period and enrollment status on this variable.

Table 46. Two-way ANOVA summary for assessing orientation program when respondents were classified by orientation period and enrollment status

Source of variation	Sum of squares	df	Mean squares	F ratio
Main effects	54.10	3	18.03	18.46[a]
Orientation period	49.45	2	24.72	25.30[a]
Enrollment status	5.60	1	5.60	5.73[b]
Interactions	.99	2	.49	.51
Residual	337.09	345	.97	
Total	392.19	350	1.12	

[a]Significant at the .001 level.

[b]Significant at the .05 level.

Table 47 shows significant differences between respondents in the three orientation periods in assessing parents' support of their being on campus. There were no significant differences when the data were analyzed by enrollment status. There was no significant interaction between orientation period and enrollment status on this variable.

Table 47. Two-way ANOVA summary for assessment of parental support when respondents were classified by orientation period and enrollment status

Source of variation	Sum of squares	df	Mean squares	F ratio
Main effects	12.19	3	4.07	5.05[a]
Orientation period	10.88	2	5.44	6.77[b]
Enrollment status	1.11	1	1.11	1.38
Interactions	.88	2	.44	.55
Residual	277.47	345	.80	
Total	290.55	350	.83	

[a]Significant at the .005 level.

[b]Significant at the .001 level.

Summary

This study attempted to determine whether students who attended required orientation activities at Iowa State University at selected times would differ in persistence through the second year of college. The study also examined differences in these students' responses to survey questions related to feelings during the first semester, freshman year involvement in learning, evaluation of aspects of campus life, utilization and evaluation of student services, and recommendations for improving undergraduate education.

While the results of the study did not reveal some of the anticipated differences (time management, academic preparation and

satisfaction, social satisfaction and class evaluation), significant differences did occur for some variables. Students differed on the composite variables for academic interest and support. Students also differed between groups on high school rank, admission status, and ACT composite scores.

In examining the interaction between orientation period and enrollment status, students also differed in how well they utilized their time, familiarity with campus resources, class attendance and how happy they are/were in college. This information may be helpful for university administrators in developing orientation programs which meet specific needs of students attending at different times.

CHAPTER V. SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Summary

This study examined students attending required orientation activities at Iowa State University during three selected time periods. Subjects were 351 students who initially enrolled during Fall semester, 1985, and attended orientation in late May (n = 123), late June (n = 126), and late August (n = 102). Demographic information gathered on these subjects included sex, first semester place of residence, student employment, financing of college education, high school rank, admission status (new freshman or transfer) and ACT scores.

Subjects responded to a survey instrument intended to assess their first semester feelings at Iowa State, freshman year involvement in learning, aspects of campus life, utilization and evaluation of student services, and recommendations for improving undergraduate education.

Item frequencies and response rates are listed in Appendix E. As expected, a larger percentage of persisting students (57.7) responded to the survey instrument than did nonpersisters (33.7). This may be due in part to a stronger interest on the part of students who are still enrolled to assist the university in improving programs and services.

Individual items were subjected to factor analysis to identify reliable composite factors. The 11 factors identified (time management, academic preparation, academic satisfaction, social satisfaction, academic interest, academic discouragement, class evaluation, support, relationships, extracurricular involvement, and

curriculum satisfaction) were utilized in the analysis of the following hypotheses.

Hypothesis 1

This investigator failed to reject the hypothesis that there would be no difference in persistence among students attending during the three identified orientation periods. The level of persistence did not decrease significantly by orientation period. It was anticipated that students who attended orientation earlier would be more likely to begin the process of academic and social adjustment to the university environment and would therefore, be more likely to persist. The results of the analysis show that this did not occur.

Hypothesis 2

This investigator failed to reject the hypothesis that there would be no difference in persistence between students who initially enrolled as freshman or transfer students. It would appear that students who enroll as new freshmen or as transfer students are equally able to make the necessary transition to the university. While Iowa State University does provide special orientation programs for transfer students, the subjects in this study attended programs primarily aimed toward new freshmen. These students apparently were able to adapt the information provided to their specific needs.

Hypothesis 3

The hypothesis that there would be no difference among students in the three identified orientation groups in assessing their feelings about Iowa State University during their first semester was not rejected based on the composite variables utilized for this hypothesis (time management, academic preparation, and academic satisfaction). While students found utilizing time appropriately and developing proper study habits were not easy, there were no significant differences between students in the three orientation groups. Also, students appeared to be equally confident about their ability to succeed in college and that the level of course work difficulty was approximately what they anticipated.

When examining the interaction between persistence and orientation period, however, significant differences were shown in how students in the three orientation periods utilized their time. Students in orientation group one had less difficulty managing their time than did students in groups two and three. There were also significant differences between enrolled and nonenrolled students in their familiarity with campus resources available for assistance. Enrolled students were more familiar with resources on campus if they needed assistance. This may indicate that students who were familiar with where to go for help may be more likely to stay enrolled.

Hypothesis 4

This investigator rejected the hypothesis that there would be no difference among students in the three identified orientation periods in assessing their freshman year involvement in learning based on the composite variables utilized for this hypothesis (social satisfaction, academic interest, and academic discouragement). The ANOVA indicated significant differences between students in the orientation periods on academic interest. Students in orientation group one indicated that they attended classes more frequently and were more interested in school work than were students in orientation groups two and three.

The interaction of persistence and orientation period indicated significant differences on how interested students in the three orientation periods were in school work. Surprisingly, students in orientation groups one and three were equally interested in school work, while students in group two were less so. Significant differences also were shown between enrolled and nonenrolled students on attending classes and on how happy they were in college. Enrolled students indicated that they attended classes more frequently and that they were happier in college. These may be important reasons for students choosing to leave the university.

Hypothesis 5

The hypothesis that there would be no difference between students in these three groups in evaluating aspects of campus life was

rejected, based on the composite variables utilized to measure this hypothesis. Students in the three orientation periods differed significantly in their assessment of support. Students in orientation group three felt less parental support for being on campus, were less positive about their relationships with other students and felt they received less attention and help from faculty and staff. An additional ANOVA revealed that students attending orientation in late August rated their program significantly lower than students attending in late May or late June. Information which is prepared for all students may be more relevant for those attending early in the process; the same information may not be adequate in assisting late attendees to make the appropriate academic and social adjustment to college. Also, students attending orientation prior to the fall opening of school may not differentiate between the orientation program and other events (i.e., late registration for classes, finalizing housing and financial aid, etc.) which may increase anxiety and stress at this time.

The interaction between persistence and orientation period also indicated significant differences between students in the three orientation groups and between enrolled and nonenrolled students in the assessment of their orientation program. While students in orientation group three rated their orientation program less positively than students in groups one and two, nonenrolled students evaluated their orientation program more positively than enrolled students. Although participation in orientation has been positively related to persistence (Noel, 1985), a less than positive experience does not appear to have increased the likelihood of student departure.

Hypothesis 6

This investigator failed to reject the hypothesis that there would be no difference among students in these three groups in evaluating campus resources. Students differed significantly on only one item, evaluating the Department of Residence. This might be explained by the lack of availability of on-campus housing for students attending orientation in late August. Other campus resources were evaluated similarly by subjects.

The interaction between orientation period and persistence showed no significant differences on these variables.

Hypothesis 7

The hypothesis that there would be no difference among students in the three groups in evaluating undergraduate education was not rejected. Although boredom with courses and dissatisfaction with requirements are primary reasons for dropping out (Astin, 1975), students in the three orientation periods did not show significant differences on relationships, extracurricular involvement, and curriculum satisfaction.

In an assessment of the National Institute of Education's (1984) recommendations, no differences between orientation groups were found. Students did not believe that faculty and other resources are allocated toward helping first- and second-year students, that student/faculty discussion of intellectual issues is encouraged or that the knowledge and skills necessary for graduation are clearly articulated by the university. This information may be helpful for

those interested in improving undergraduate education at Iowa State. These results should be interpreted with caution, however, as institutional policies may contribute to the perception that upperclass students receive more help from faculty than lower division students at Iowa State University.

Hypothesis 8

This investigator rejected the hypothesis that there would be no difference in students in the three groups on various pre-college persistence predictor variables. Results indicated differences between students in the three orientation periods on high school rank, admission status, and ACT composite score. Students in orientation period two had the lowest high school rank, which was not anticipated. Students attending orientation during periods one and two were more likely to be new freshmen, while transfer students were more likely to attend during period three. This may be because transfer students do not have the same need to receive early orientation information as do new freshmen.

Unanticipated results also occurred in the examination of ACT composite scores. While students in orientation period one averaged the highest ACT composite (23.84), students in orientation period three (22.33) had a higher average composite than those in orientation period two (21.98). This may indicate that less academically prepared students do not necessarily wait to attend orientation.

Conclusions

Previous studies relating orientation to persistence addressed whether or not students participated in orientation, not when students chose to attend. The investigator perceived that students who attended orientation programs at selected times might differ in persistence and display different characteristics and responses to the survey instrument used in the study.

Many of the anticipated differences did not occur. While persistence rates did decrease from periods one to two and from periods two to three, the difference was not significant. Students attending just before the opening of Fall semester were as likely to persist as those attending months earlier. This may be due to the fact that students who need additional time to the adjustment to college choose to attend earlier.

Likewise, there was no difference in persistence between students who initially enrolled as new freshmen or as transfer students. Students were able to obtain necessary information whenever they attended and to make the appropriate adjustment to the university environment.

Significant differences did occur in students' assessment of their orientation program; earlier attendees evaluated the program more positively. The content and format of the orientation program does not vary substantially regardless of when it is offered; it may be that the information provided is more appropriate during the early programs. Students attending later may have more immediate concerns, such as unconfirmed housing, financial aid, and scheduling of classes which

lessen their interest in some aspects of the orientation program. Late orientation attendees also indicated less satisfaction with their relationships with other students and less parental support. Special attention to these concerns might be appropriate for those students attending orientation just prior to the opening of school.

Students also differed significantly on high school rank, admission status, and ACT composite scores. Though not anticipated, students attending orientation in late June had the lowest high school rank. Since factors such as high school rank and test scores have shown a positive correlation to persistence (Pantages and Creedon, 1978), knowledge about when these students are likely to attend orientation may be useful. As expected, new freshmen were most likely to attend summer orientation in May and June, while transfer students were more likely to wait until late August. Additional emphasis on the unique concerns of transfer students may appropriately be addressed at these late sessions.

The results of this study may indicate that students in orientation periods two and three vary most significantly from those in period one. Students attending orientation on one of the earliest possible dates appear to be better prepared to make the academic adjustment to the university, to be more satisfied with the university environment, and to rate the college experience more positively.

However, the results of this study indicate that students attending late during the summer program may be less prepared than fall orientation attendees. Modifications to the program should include consideration of these differences. Additional attention should be

given to designing orientation programs which address the specific needs of students who participate early and late in the process.

Recommendations

This study attempted to determine differences between students who attend required orientation activities at selected times. While anticipated significant differences did not occur, specific problems which may be important to address were identified. Students who attended orientation during late May were consistently better prepared to make the social and academic adjustment to the college environment than were students who attended in late June or late August. Further study to examine differences in these latter groups may be helpful. While this study emphasized the timing of orientation attendance, examination of the antecedent characteristics which contribute to orientation attendance would be valuable.

The investigator would like to see this study replicated in order to confirm or amplify its results. Additional study on the utilization of Involvement in Learning recommendations to improve undergraduate education is also warranted. The differences shown on evaluating these recommendations in the current study appear to be in areas which may be important for persistence.

Additional study would also be helpful in analyzing the rationale behind student departure from the institution. Given the complexity of the decision to leave, increased knowledge about the factors involved in making this decision would be beneficial. The effect of work and place

of residence on persistence by students in this study may also be valuable.

Students who attended orientation immediately before classes begin in the fall rated their orientation program significantly lower than did students who attend during the traditional summer program. The university should examine the immediate environment into which these students are placed to determine its effect on adjustment. Students may be unable to differentiate between the orientation program and other aspects of matriculation. Students in this group should be examined more fully to determine their specific needs and to develop orientation programs which more adequately meet these needs.

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APPENDIX A. SURVEY INSTRUMENT

STUDENT PERSISTENCE QUESTIONNAIRE

IOWA STATE UNIVERSITY

This questionnaire provides an opportunity for you to respond to questions about your enrollment as a student at Iowa State University. We are interested in assessing your feelings about the university at the time you first enrolled. Please answer each question as you feel it would have applied to you during your freshman year.

1. Where did you live during your first semester?

_____ Department of Residence
_____ Fraternity or Sorority
_____ Off-campus
_____ At home

2. Have you been employed as a student? If so, check all that apply.

_____ worked on-campus
_____ worked off-campus
_____ worked more than 20 hours per week
_____ worked less than 20 hours per week
_____ have not worked as a student

3. How are/were you financing your college education? Check all that apply and indicate the approximate percentage of support.

_____ Support from parents/relatives
_____ Social security benefits
_____ Veteran's benefits
_____ Spouse's income
_____ Educational grants
_____ Scholarships
_____ Student loans
_____ Employment while in college
_____ Summer savings
_____ Personal savings

4. How great a concern is/was your financial status to the continuation of your college enrollment?

_____ very much a concern
_____ is sometimes a concern
_____ is very seldom a concern
_____ is not a concern

The following statements are intended to assess your feelings during your first semester at Iowa State University. Use the following response categories.

STRONGLY AGREE.....5
AGREE.....4
NEITHER AGREE OR DISAGREE...3
DISAGREE.....2
STRONGLY DISAGREE.....1

		Please circle your response				
5.	My high school academic preparation was adequate.	5	4	3	2	1
6.	I was confident about my ability to succeed in college.	5	4	3	2	1
7.	The level of coursework difficulty was more than I anticipated.	5	4	3	2	1
8.	I was reasonably certain about my career objective.	5	4	3	2	1
9.	I had difficulty developing proper study habits.	5	4	3	2	1
10.	I had difficulty utilizing my time.	5	4	3	2	1
11.	I was familiar with the resources available on campus if I needed assistance.	5	4	3	2	1
12.	My first semester grades were about what I extected them to be.	5	4	3	2	1
13.	The number of credits I carried was about right for me.	5	4	3	2	1

Describe your involvement in learning during your freshman year at Iowa State. Use the following response categories.

ALWAYS.....5
OFTEN.....4
SOMETIMES.....3
SELDOM.....2
NEVER.....1

		Please circle your response				
14.	I participated in class discussions.	5	4	3	2	1
15.	I was interested in school work.	5	4	3	2	1
16.	I attended classes.	5	4	3	2	1
17.	I became discouraged about classwork.	5	4	3	2	1
18.	I was happy in college.	5	4	3	2	1
19.	I was satisfied with the campus environment.	5	4	3	2	1
20.	I was satisfied with my social life.	5	4	3	2	1
21.	I lacked self confidence as a student.	5	4	3	2	1
22.	I felt pressure to succeed academically.	5	4	3	2	1
23.	I got along with other students.	5	4	3	2	1

Please evaluate the following aspects of campus life during your freshman year. Use the following response categories.

VERY SATISFACTORY.....5
SATISFACTORY.....4
AVERAGE.....3
UNSATISFACTORY.....2
VERY UNSATISFACTORY.....1

		Please circle your response				
24.	My pre-enrollment orientation program was	5	4	3	2	1
25.	My relationships with other students were	5	4	3	2	1
26.	My parents support of my being on campus was	5	4	3	2	1
27.	The concern and help I received from faculty and staff was	5	4	3	2	1
28.	My relationship with my academic advisor was	5	4	3	2	1
29.	My classes, in terms of interest, were	5	4	3	2	1
30.	My classes, in terms of content, were	5	4	3	2	1
31.	The academic requirements of the university were	5	4	3	2	1
32.	The quality of the department in which I chose to major (if you have chosen one) was	5	4	3	2	1
33.	The financial aid available to me (if applicable) was	5	4	3	2	1

Please evaluate the student services that you used or came in contact with while at the university. Place a check mark if you used the service and indicate how well it met your needs or helped you with your problem.

EXCELLENT.....5
GOOD.....4
AVERAGE.....3
BELOW AVERAGE.....2
POOR.....1

Please check if you used the service, then circle your response.

		Used service					
34.	Academic advising	_____	5	4	3	2	1
35.	Career development services	_____	5	4	3	2	1
36.	College classification office	_____	5	4	3	2	1
37.	Dean of Students office	_____	5	4	3	2	1
38.	Department of Residence	_____	5	4	3	2	1
39.	Financial Aid and Student Employment office	_____	5	4	3	2	1
40.	Honors program	_____	5	4	3	2	1
41.	Memorial Union	_____	5	4	3	2	1
42.	Minority Student Affairs	_____	5	4	3	2	1
43.	Registrar's Office/student scheduling	_____	5	4	3	2	1
44.	Student Counseling Service	_____	5	4	3	2	1
45.	Student Health Center	_____	5	4	3	2	1
46.	Tutoring Office	_____	5	4	3	2	1
47.	Other _____	_____	5	4	3	2	1

Below are some recommendations to university administrators to improve undergraduate education. How effectively are these recommendations utilized at Iowa State University now? Use the following response categories.

ALWAYS.....5
OFTEN.....4
SOMETIMES.....3
SELDOM.....2
NEVER.....1

		Please circle your response				
48.	Faculty and other resources are allocated toward helping first- and second-year students.	5	4	3	2	1
49.	Students are given responsibility for their own learning.	5	4	3	2	1
50.	Student/faculty discussion of intellectual issues is encouraged.	5	4	3	2	1
51.	Regular advising and guidance are provided from freshman through senior year.	5	4	3	2	1
52.	Extracurricular activities are readily available to students.	5	4	3	2	1
53.	Students are encouraged to participate in events on campus.	5	4	3	2	1
54.	The knowledge and skills necessary for graduation are clearly articulated by the university.	5	4	3	2	1
55.	There is adequate emphasis on liberal arts in each curriculum.	5	4	3	2	1
56.	The curriculum helps develop skills in problem-solving, analysis, and communication.	5	4	3	2	1

The following questions should be answered only if you are no longer enrolled at Iowa State University. Please indicate the most appropriate answer to each question.

57. My academic performance at the time I left was

_____ inadequate, grade point average required discontinuance
_____ marginal, on temporary enrollment
_____ adequate or better

58. When did you leave Iowa State?

_____ the end of my first semester
_____ the end of my first year
_____ the end of my third semester
_____ during the semester (please indicate) _____

59. How much did the following things contribute to your decision not to re-enroll at Iowa State? Please circle the appropriate response.

	Influenced my decision				Did not influence my decision
a. Enrolled at another institution	5	4	3	2	1
b. Personal illness or injury	5	4	3	2	1
c. Illness or death of another person	5	4	3	2	1
d. Joined military	5	4	3	2	1
e. Sought full-time employment	5	4	3	2	1
f. Lacked funds to continue	5	4	3	2	1
g. Marriage	5	4	3	2	1
h. Pregnancy or birth	5	4	3	2	1
i. Dissatisfaction with academic program	5	4	3	2	1
j. Lack of career direction	5	4	3	2	1
k. Degree not worth time	5	4	3	2	1

Please circle the appropriate response

		Influenced my decision				Did not influence my decision
l.	Degree not worth investment	5	4	3	2	1
m.	Lack of support from family	5	4	3	2	1
n.	Poor grades	5	4	3	2	1
o.	Family moved/relocated	5	4	3	2	1

Please add any additional comments which you would like to make about your enrollment at Iowa State University.

Postage for the questionnaire is prepaid, so all you need to do is tape it together and drop it in a mailbox. Your assistance is greatly appreciated.

APPENDIX B. COVER LETTER FOR INITIAL MAILING OF SURVEY INSTRUMENT

Iowa State University *of Science and Technology* *Ames, Iowa 50011*

Vice President for Student Affairs
311 Beardshear Hall
515-294-4420

January 23, 1987

Dear ISU Student:

You have been selected to give your perceptions about your involvement in learning at Iowa State University.

The information you provide will enable us to more fully understand the differences between students who remain at the university and those who are no longer enrolled.

Enclosed is a questionnaire which we would like you to complete and return to us. For our results to be representative of ISU students, it is important that each questionnaire be completed and returned. Your voluntary cooperation is greatly appreciated.

You may be assured of complete confidentiality. As soon as all analysis of the questionnaire is complete, any materials revealing your identity will be destroyed. The questionnaire has an identification number to be used only for record-keeping purposes. It enables us to check your name off the mailing list when your questionnaire is returned. Your name will never be placed on the questionnaire nor mentioned in any reports.

Return postage on the questionnaire has been prepaid, so you need only to drop the completed questionnaire in a mailbox.

We thank you in advance for your cooperation.

Sincerely,

Thomas B. Thielen
Vice President for Student Affairs

Barbara Snyder
Doctoral Student

sc

APPENDIX C. COVER LETTER FOR FOLLOW-UP MAILING

Iowa State University of Science and Technology Ames, Iowa 50011

Vice President for Student Affairs
311 Beardshear Hall
515-294-4420

February 5, 1987

Dear Student:

We know that you are busy, but we do need your help!

You recently received a questionnaire seeking your views about your involvement in learning at Iowa State. If you have mailed it recently, we want you to know that your participation is appreciated.

If you have not mailed your questionnaire, we would ask you to complete the enclosed questionnaire (or the first one), tape it closed, and drop it in a mailbox.

We have had a very good completion record and return rate on the questionnaire and would like very much to have your responses to include in our tabulation.

Thank you for your voluntary participation in the study.

Sincerely,

Thomas B. Thielen
Vice President for Student Affairs

Barbara Snyder
Doctoral Student

sc

APPENDIX D. COVER LETTER FOR FINAL MAILING

April 16, 1987

Dear Former ISU Student:

We know that you are busy, but we do need your help!

Over the past few months, you have received two copies of a questionnaire seeking your views about your enrollment at Iowa State. If you have recently mailed it, your participation is greatly appreciated.

Information from students who are no longer enrolled is particularly helpful to our study. Will you please take a few moments from your schedule to complete the enclosed questionnaire, tape it closed, and drop it in a mailbox?

Thank you for your voluntary participation in the study.

Sincerely,

Barbara Snyder
Doctoral Student

Enclosure

APPENDIX E. ITEM FREQUENCIES AND RESPONSE RATES FOR ALL QUESTIONNAIRES

STUDENT PERSISTENCE QUESTIONNAIRE

IOWA STATE UNIVERSITY

This questionnaire provides an opportunity for you to respond to questions about your enrollment as a student at Iowa State University. We are interested in assessing your feelings about the university at the time you first enrolled. Please answer each question as you feel it would have applied to you during your freshman year.

1. Where did you live during your first semester?

75.2%	Department of Residence
8.3%	Fraternity or Sorority
10.3%	Off-campus
5.7%	At home

2. Have you been employed as a student? If so, check all that apply.

24.8%	Worked on-campus
24.8%	Worked off-campus
13.1%	Worked more than 20 hours per week
35.3%	Worked less than 20 hours per week
48.1%	Have not worked as a student

3. How are/were you financing your college education? Check all that apply and indicate the approximate percentage of support.

67.5%	Support from parents/relatives
0.9%	Social security benefits
1.4%	Veteran's benefits
2.3%	Spouse's income
31.1%	Educational grants
25.6%	Scholarships
50.1%	Student loans
36.8%	Employment while in college

50.1% Summer savings
42.5% Personal savings

4. How great a concern is/was your financial status to the continuation of your college enrollment?

47.3% Very much a concern
27.1% Is sometimes a concern
10.8% Is very seldom a concern
14.8% Is not a concern

The following statements are intended to assess your feelings during your first semester at Iowa State University. Use the following response categories.

STRONGLY AGREE.....5
AGREE.....4
NEITHER AGREE OR DISAGREE.....3
DISAGREE.....2
STRONGLY DISAGREE.....1

	5	4	3	2	1	0
5. My high school academic preparation was adequate.	21.7%	47.0%	12.3%	15.4%	3.7%	0.0
6. I was confident about my ability to succeed in college.	23.9%	46.4%	19.7%	8.0%	2.0%	0.0
7. The level of coursework difficulty was more than I anticipated.	10.0%	33.6%	28.5%	25.1%	2.8%	0.0
8. I was reasonably certain about my career objective.	14.8%	34.5%	14.8%	20.5%	15.4%	0.0
9. I had difficulty developing proper study habits.	17.1%	35.0%	16.0%	25.4%	6.6%	0.0%

		5	4	3	2	1	0
10.	I had difficulty utilizing my time.	14.0%	37.6%	16.5%	25.4%	6.6%	0.0%
11.	I was familiar with the resources available on campus if I needed assistance.	5.7%	29.1%	23.6%	31.6%	9.7%	0.3%
12.	My first semester grades were about what I expected them to be.	4.6%	37.9%	17.9%	25.6%	13.4%	0.6%
13.	The number of credits I carried was about right for me.	10.3%	61.8%	14.8%	11.1%	2.0%	0.0

Describe your involvement in learning during your freshman year at Iowa State. Use the following response categories.

ALWAYS.....5
OFTEN.....4
SOMETIMES.....3
SELDOM.....2
NEVER.....1

		5	4	3	2	1	0
14.	I participated in class discussions.	8.3%	29.1%	40.7%	18.8%	3.1%	0.0%
15.	I was interested in school work.	7.7%	49.6%	33.3%	8.0%	0.9%	0.6%
16.	I attended classes.	45.6%	42.5%	8.5%	3.1%	0.3%	0.0%
17.	I became discouraged about classwork.	2.0%	25.6%	50.1%	19.7%	2.6%	0.0%
18.	I was happy in college.	14.2%	46.4%	27.1%	9.1%	2.8%	0.3%

		5	4	3	2	1	0
19.	I was satisfied with the campus environment.	25.1%	43.9%	23.6%	5.1%	2.3%	0.0%
20.	I was satisfied with my social life.	23.9%	39.0%	25.4%	9.4%	2.3%	0.0%
21.	I lacked self confidence as a student.	6.0%	17.7%	32.8%	32.8%	10.8%	0.0%
22.	I felt pressure to succeed academically.	20.5%	37.3%	30.8%	9.7%	1.7%	0.0%
23.	I got along with other students.	37.3%	54.1%	7.7%	0.6%	0.3%	0.0%

Please evaluate the following aspects of campus life during your freshman year. Use the following response categories.

VERY SATISFACTORY.....5
SATISFACTORY.....4
AVERAGE.....3
UNSATISFACTORY.....2
VERY UNSATISFACTORY.....1

		5	4	3	2	1	0
24.	My pre-enrollment orientation program was	9.4%	40.7%	34.8%	7.7%	5.7%	1.7%
25.	My relationships with other students were	27.6%	49.3%	17.9%	4.3%	0.3%	0.6%
26.	My parents support of my being on campus was	59.5%	27.6%	9.4%	1.7%	0.6%	1.1%
27.	The concern and help I received from faculty and staff was	8.0%	33.9%	40.2%	11.4%	5.7%	0.9%

		5	4	3	2	1	0
28.	My relationship with my academic advisor was	14.0%	25.1%	29.6%	18.2%	12.5%	0.6%
29.	My classes, in terms of interest, were	7.7%	39.0%	44.2%	6.8%	1.4%	0.9%
30.	My classes, in terms of content, were	7.1%	47.9%	41.0%	3.1%	0.9%	0.0%
31.	The academic requirements of the university were	7.4%	60.7%	25.9%	4.8%	0.3%	0.9%
32.	The quality of the department in which I chose to major (if you have chosen one) was	21.9%	39.9%	22.8%	7.4%	2.0%	6.0%
33.	The financial aid available to me (if applicable) was	11.7%	16.0%	23.6%	12.8%	15.4%	20.5%

Please evaluate the student services that you used or came in contact with while at the university. Place a check mark if you used the service and indicate how well it met your needs or helped you with your problem.

EXCELLENT.....5
GOOD.....4
AVERAGE.....3
BELOW AVERAGE.....2
POOR.....1

		Used service	5	4	3	2	1	0
34.	Academic advising	82.3%	14.5%	28.5%	25.6%	7.1%	7.7%	16.3%
35.	Career development services	19.4%	3.1%	8.0%	7.4%	2.0%	0.9%	78.3%

		Used service	5	4	3	2	1	0
36.	College classification office	21.4%	2.0%	9.7%	9.1%	0.9%	1.4%	76.6%
37.	Dean of Students office	11.7%	2.8%	4.0%	4.6%	1.1%	0.9%	86.3%
38.	Department of Residence	49.9%	6.6%	21.4%	16.0%	4.0%	3.1%	48.7%
39.	Financial Aid and Student Employment office	53.8%	5.1%	14.8%	18.2%	8.8%	8.5%	44.2%
40.	Honors program	7.4%	0.9%	3.7%	4.0%	1.1%	0.3%	89.7%
41.	Memorial Union	74.4%	22.0%	40.6%	11.1%	0.9%	0.6%	24.8%
42.	Minority Student Affairs	6.8%	2.3%	1.4%	4.0%	0.6%	0.3%	91.2%
43.	Registrar's Office/student scheduling	63.2%	3.1%	25.6%	23.6%	6.8%	4.6%	35.9%
44.	Student Counseling Service	17.4%	3.7%	6.8%	6.6%	2.0%	0.3%	80.3%
45.	Student Health Center	60.4%	14.5%	26.8%	12.0%	6.3%	2.6%	37.6%
46.	Tutoring Office	20.5%	4.0%	9.7%	5.4%	2.0%	1.1%	77.5%
47.	Other _____	5.1%	3.4%	0.9%	0.3%	0.3%	0.3%	94.9%

Below are some recommendations to university administrators to improve undergraduate education. How effectively are these recommendations utilized at Iowa State University now? Use the following response categories.

ALWAYS.....5
OFTEN.....4
SOMETIMES.....3
SELDOM.....2
NEVER.....1

	5	4	3	2	1	0
48. Faculty and other resources are allocated toward helping first- and second-year students.	3.7%	31.9%	44.4%	15.4%	2.8%	1.7%
49. Students are given responsibility for their own learning.	41.9%	50.7%	6.0%	1.4%	0.0%	0.0%
50. Student/faculty discussion of intellectual issues is encouraged.	6.8%	33.9%	43.6%	13.1%	2.0%	0.6%
51. Regular advising and guidance are provided from freshman through senior year.	15.4%	36.8%	28.5%	14.0%	3.4%	2.0%
52. Extracurricular activities are readily available to students.	46.7%	37.6%	11.7%	1.4%	1.1%	1.4%
53. Students are encouraged to participate in events on campus.	27.6%	41.6%	20.8%	7.7%	1.4%	0.9%
54. The knowledge and skills necessary for graduation are clearly articulated by the university.	14.0%	35.0%	35.0%	13.1%	2.3%	0.6%

	5	4	3	2	1	0
55. There is adequate emphasis on liberal arts in each curriculum.	14.5%	47.3%	27.6%	7.7%	2.0%	0.9%
56. The curriculum helps develop skills in problem-solving, analysis, and communication.	15.1%	53.0%	26.8%	3.4%	0.6%	1.1%

The following questions should be answered only if you are no longer enrolled at Iowa State University. Please indicate the most appropriate answer to each question.

57. My academic performance at the time I left was

5.7% Inadequate, grade point average required discontinuance
4.0% Marginal, on temporary enrollment
8.5% Adequate or better

58. When did you leave Iowa State?

2.6% The end of my first semester
9.7% The end of my first year
4.3% The end of my third semester
2.0% During the semester (please indicate) _____

59. How much did the following things contribute to your decision not to re-enroll at Iowa State? Please circle the appropriate response.

	Influenced my decision			Did not influence my decision		
	5	4	3	2	1	N/A
a. Enrolled at another institution	6.6%	2.0%	0.6%	1.1%	8.3%	81.5%
b. Personal illness or injury	1.1%	0.0%	0.9%	0.3%	15.7%	82.1%
c. Illness or death of another person	0.6%	0.3%	0.6%	0.3%	16.2%	82.1%
d. Joined military	0.0%	0.0%	0.0%	0.3%	17.7%	82.1%
e. Sought full-time employment	2.8%	1.7%	1.4%	1.1%	10.8%	82.1%
f. Lacked funds to continue	5.4%	1.1%	1.4%	1.7%	8.5%	81.8%
g. Marriage	0.6%	0.0%	0.3%	0.3%	16.8%	82.1%
h. Pregnancy or birth	0.0%	0.0%	0.3%	0.3%	17.1%	82.3%
i. Dissatisfaction with academic program	2.3%	2.0%	4.0%	1.7%	8.3%	81.8%
j. Lack of career direction	1.4%	1.7%	2.6%	1.7%	10.5%	82.1%
k. Degree not worth time	0.3%	0.3%	0.3%	1.1%	16.2%	81.8%
l. Degree not worth investment	0.3%	0.9%	0.9%	0.6%	16.5%	80.9%
m. Lack of support from family	0.9%	0.3%	0.6%	1.4%	16.0%	80.9%
n. Poor grades	5.4%	1.4%	2.0%	1.7%	8.5%	80.9%
o. Family moved/relocated	0.6%	0.3%	0.0%	0.0%	17.9%	81.2%

APPENDIX F. MEANS AND STANDARD DEVIATIONS OF COMPOSITE VARIABLES BY ORIENTATION GROUP

Table 48. Means and standard deviations of composite variables by orientation group

Composite variable	Group number	Mean	Standard deviation
Time management	1	3.15	1.13
	2	3.43	1.05
	3	3.27	1.17
Academic preparation	1	3.76	.82
	2	3.79	.83
	3	3.69	.94
Academic satisfaction	1	3.29	.79
	2	3.26	.89
	3	3.36	.82
Social satisfaction	1	3.84	.65
	2	3.95	.67
	3	3.77	.73
Academic interest	1	4.04	.59
	2	3.79	.69
	3	3.92	.72
Academic discouragement	1	2.80	.70
	2	2.99	.83
	3	2.92	.79
Class evaluation	1	3.52	.55
	2	3.55	.54
	3	3.59	.78
Support	1	3.81	.57
	2	3.90	.55
	3	3.47	.82
Relationships	1	3.28	.60
	2	3.37	.63
	3	3.28	.85
Extracurricular involvement	1	4.10	.82
	2	4.08	.86
	3	3.89	.92

Table 48. Continued

Composite variable	Group number	Mean	Standard deviation
Curriculum satisfaction	1	3.75	.62
	2	3.63	.79
	3	3.68	.79