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Old Dominion University

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THE IMPACT OF AN INTRUSIVE ORIENTATION MODEL ON THE
RETENTION AND GRADE POINT AVERAGE OF SECOND SEMESTER
FRESHMEN ON ACADEMIC PROBATION AT AN URBAN UNIVERSITY

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ABSTRACT

THE IMPACT OF AN INTRUSIVE ORIENTATION MODEL ON THE RETENTION AND GRADE POINT AVERAGE OF SECOND SEMESTER FRESHMEN ON ACADEMIC PROBATION AT AN URBAN UNIVERSITY

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Walter R. Earl
Old Dominion University, 1986

More than one-third of all entering freshmen will not be continuous students into a sophomore year. Academic and orientation interventions usually are based on the assumption that students will self-identify their needs and seek help. The intrusive model is an alternative intervention strategy based on the theory that students will respond to direct contact in which problems in their academic life are identified and assistance offered. To evaluate the effectiveness of the model, seventy-four freshmen who were placed on probation at the end of their first semester participated in an intrusive project involving counseling and evaluation of the causes of probation. Some of these students were also enrolled in a special orientation credit class. A control population was matched by admission and probation status and was not statistically different in grade point averages nor on demographic factors. At the end of their sophomore year, three semesters later, students in the experimental sample had a statistically (.05 level of significance) higher semester and cumulative grade point average than those in the control sample. When persisting and non-persisting status was compared, the experimental sample persisted

at over twenty percentage points higher than the control sample with a suspension rate almost fifteen percentage points lower. A chi-square at the .05 level of significant difference was obtained. The highest grades and retention rate were attained by the experimental students enrolled in the orientation class.

The research has described an intrusive model of orientation and counseling and provided demographic information about probationary students. Probationary students involved in intrusive intervention had significantly higher grade point averages and persisted at a significantly higher rate after three semesters than probationary students in a matched control sample. The most successful students were those enrolled in the orientation class.

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TABLE OF CONTENTS

ACKNOWLEDGEMENTS.	iii
LIST OF ILLUSTRATIONS	vi
LIST OF TABLES.	vii
Chapter	
I. THE RESEARCH PROBLEM	1
The Problem of Orientation for Probationary Students.	3
The Research Question and Null Hypothesis	5
The Intrusive Orientation Concept	5
Retention As an Urban University Problem.	6
II. REVIEW OF THE LITERATURE.	9
The Theoretical Framework	9
Academic Interventions.	13
Intrusive Counseling and Orientation.	15
A Theoretical Model of Intrusive Counseling	17
Justifications for the Intrusive Experiment	20
Importance of Project to Old Dominion University.	20
The Urban Environment	21
Measurements of Success	23
III. METHODOLOGY	30
The Research Procedures	30
Design of the Study	31
The Experimental Sample	32
The Control Sample.	34
Retention Status.	39
Continuous Students	39
Stop-Out Students	39
Dropout Students.	41
Motivation As A Variable.	41
Implementation of the Intrusive Model	42
Planning.	43
The Pilot Study	44

IV. ANALYSIS OF DATA.	46
Comparison of Samples	46
Treatment of Scholastic Achievement Data.	47
Treatment of Continuance Data	48
Other Variables To Be Considered.	50
Matched Groups.	50
Gender.	50
Race.	52
Sending High School Region.	54
Admission Status.	55
Probation Status.	55
Variable of Predicted Success	56
High School Grade Point Average	56
Scholastic Aptitude Test Scores	60
Impact of Treatment on College Grades	65
Comparison of Cumulative Grade Point Averages	65
Change in Grade Point Averages.	68
Impact of Treatment on Retention.	72
Retention Comparisons by Percentage of Students	74
Persisters and Non-Persisters Compared.	76
V. CONCLUSIONS AND RECOMMENDATIONS	80
The Urban Problem	80
Intrusive Advising as a Possible Solution	81
Summary of Significant Results.	83
Implications for Higher Education	85
Characteristics of Probationary Students.	86
Gender	86
Race	87
Sending High School Region	87
Predictors of College Success.	88
Implications For Orientation.	89
Implications For Academic Counseling.	90
Recommendations For Further Study	91
Intrusive Delivery Systems.	92
Longitudinal Studies.	92
Factor Analysis of Nominal Data	93
Probationary Questionnaire Information.	93
Attitude Evaluation	93
SELECTED BIBLIOGRAPHY	96

LIST OF ILLUSTRATIONS

1. Process by Which Control Sample Was Selected From Pool of First Semester Probationary Students	38
2. Composition of Comparison Groups	47

LIST OF TABLES

1. Experimental Sub-Populations	33
2. Sample by Admission Status	36
3. Analysis of Choice of Control Sample	37
4. Demography of Samples.	40
5. Black/White Composition by Populations	53
6. Populations by Region of Sending School.	55
7. Mean High School Grade Point Averages.	58
8. Mean S.A.T. Scores	61
9. Entrance Exam Scores by Categories	62
10. Significance of Predictions of Success ANOVA	64
11. Changes from Beginning to Ending G.P.A.	67
12. Changes in Grade Point Averages by Populations	69
13. Recoding GDIFF by Increments of One-Half G.P.DIFF.	71
14. Increment Changes of G.P.A.	72
15. Means and ANOVA of GDIFF Compared.	73
16. Retention Categories by Populations.	75
17. Populations by Retention Categories.	76
18. Persisting and Non-Persisting Students	77

CHAPTER I

THE RESEARCH PROBLEM

There is a national problem in higher education concerning retention of college students at the freshman level. Although these students meet admission requirements, and therefore are predicted to be successful, more than one-third of all entering freshmen will not be continuous students into a sophomore year. The general policy of institutions of higher education is to seek to retain as many entering freshmen as continuous students as possible. The fiscal urgency of the policy of retention is accentuated by a decrease in the population of late adolescents, a national awareness of lowered academic standards, and a reduction of government fiscal support. These and other factors have helped shift the emphasis of higher education policy from the "revolving door" concept of student continuance by selection of those who "make it through the freshman year" to an emphasis on retention that involves evaluation-remediation, pre-college orientation and academic counseling during the freshman formative year. A general model of pre-college and freshman year advising is in place at Old Dominion University. However, retention rates at urban universities as an institutional type are especially troublesome and are generally lower than the retention rates of other type institutions of higher education. This lower retention rate is most evident for students in their first year at an urban university.

This action research dissertation addresses the concept of direct intervention in the academic orientation of freshmen who can be identified as potential losses to the university population by either dropout or suspension. The premise that an intrusive orientation-counseling model will significantly enhance the academic performance of freshman as well as their continuance in college is tested by a three semester follow-up of probationary students involved in an intrusive orientation and counseling project during the second semester of the 1984-1985 academic year (84-2).

Freshman entering the university in the fall of 1984 who were placed on academic probation at the end of their first semester (January 1985) were identified and invited to participate in an intrusive orientation and counseling program. Seventy-four responding students participated in one or more of two facets of the intrusive model: in-depth intrusive counseling about probationary status and enrollment in a credit orientation class. Some of the responding students were already involved in a special "opportunity" program, and all of these students participated in the special counseling and the credit class.

Three semesters later, in June 1986, the grades and continuance status of these students were compared to the grades and continuance status of a matched group of non-responding probationary students. The control population had equal access to the intrusive assistance and were enrolled in college during the semester of the intrusive project.

The research is expected to show an improvement in academic performance for the experimental group that is significantly better than the improvement in academic performance for the control group. It is

expected that retention rate as measured by both stop-out, dropout and suspension will be more positive for the experimental group than for the control group.

The Problem of Orientation for Probationary Students

The Division of Student Services, Old Dominion University, provides orientation and advising/counseling to all entering students. Full time students who enter the university as freshmen without previous college experience are the principal clients of freshman orientation and advising. They are invited to a two day summer orientation program on campus. Academic planning, orientation to student services and the campus, and programming for their first semester classes are a part of this summer program.

Freshmen students return to their academic advisors in the fall for additional orientation and to be scheduled for their spring semester classes. On these middle of semester "preregistration" occasions, scheduling is done without any records of a student's academic progress because no grades are generated until the end of the semester.

At the end of their first semester, several months after students have preregistered for their second semester, grades are mailed to their permanent addresses. Students who do not have a "C" grade point average (2.00 on a 4.00 scale) are automatically placed on probation and officially notified of their probationary status. The probationary letter suggests that the student contact an advisor, but an insignificant number of freshmen respond. Usually, the next time probationary students see their advisor is in the middle of the second semester when they need to be scheduled for the third semester (sophomore fall

semester). Many students wait until early fall to register for fall classes. Since summer classes do not require an advisor's approval, many students who receive a January notification that they are on probation do not, in fact, meet with an advisor until after summer school which is six to eight months later.

Even if the student meets with an advisor in the spring and discusses his/her probationary status, the remediation effectiveness of this advising is reduced by at least four factors.

First, the student is already midway through the second semester and therefore is too late for enrollment in remediation or orientation classes during the semester following the probation notice.

Second, the student has continued midway through another semester without any assistance in academic planning, time management or study skill development. The student, in most cases, is repeating the same inappropriate academic behaviors that resulted in the probationary status.

Third, the student who is repeating inappropriate academic patterns is approaching mid-term and not readily agreeable to attending workshops, short term courses or other study skill modules because of the pressures of routine academics such as deadlines for papers and projects, and the mid-term examinations.

Fourth, any shock impact of being placed on probation that could be utilized as motivation for improvement has softened with the passage of time and any monitoring or sharing of experiences with an advisor is therefore less effective.

The Research Question and Null Hypothesis

Several important retention questions are raised by this intrusive counseling research project. How can academic orientation and advising assist students placed on probation after their first semester to self-direct themselves early enough for remedial actions to improve their academic performance? Can an intrusive model of assistance be provided early enough in a semester to improve student retention at an urban university? Will students who participate in an intrusive counseling project be retained at a statistically significant higher rate with statistically significant higher academic grades than probationary students who do not participate?

The thesis of this intrusive counseling project is that probationary students who receive direct intervention and academic assistance will have statistically significant higher grades and will be retained at a statistically significant higher rate than a control group of probationary students who do not receive the intervention assistance.

The research null hypothesis is as follows: probationary students who receive intrusive counseling and academic assistance will not have a statistically significant higher retention rate nor have statistically significant higher grades at the end of three semesters than a matched group of control probationary students.

The Intrusive Orientation Concept

The technique of "intrusive orientation" appears infrequently in the literature. Tinto and Glennon are the two principal researchers using the term "intrusive," and their works are cited later in this

paper.

Earl presented a paper at the 1983 American Personnel and Guidance Association annual convention in which intrusive counseling was discussed. Four models of academic counseling were presented that involved intrusive approaches to student services. The first model, Orientation, involved an orientation assessment of adjustment to college and study skills. Students who were identified as needing help were directed to a credit orientation class, an academic success group or a special counseling session. A second model, Major Choice, involved an assessment of student ability to choose a major. Based on this assessment, students were referred to a credit career planning class, a decision-making workshop or special counseling sessions. A third model, Academic Opportunity Program, assessed and referred students already involved in a structured monitoring program. A fourth model, Intrusive Counseling at the First Sign of Trouble, was the pilot project for the research of this dissertation. No research has been done to measure the effectiveness of any of these models.

A definition of intrusive counseling was presented at the workshop:

Intrusive counseling is a response to retention needs and the high cost of losing students who could have been helped. By interfering in the student's life with "You need help and you can get it here," when the first signs of academic problems are diagnosed, counselors play a new role as helpers in higher education.¹

Retention As an Urban University Problem

Retention of students, particularly freshmen, is a mandate of the administration at most universities. Since predictions of success are less stable in an urban university environment, this mandate is

particularly important for the more fluid populations of an urban university. Since 1983, orientation and advising has been developed as a "freshman experience" by Old Dominion University with the expectation that students will receive assistance in becoming successful students at this urban university.

Current research in academic advising suggests that a student's "fit" to a university environment is one variable of academic adjustment. Berdie's 1970 CUES (College and University Environment Scales) study attempted to define the assumption that

the process of making a wise choice (of a college) consists of considering the individual differences among students and among colleges, and finding the college that for the student is "best fit."²

Feldman and Newcomb felt that there "is a certain amount of self-selection by students into colleges in terms of their assessment of the 'fit' between themselves and the colleges under consideration."³

Orientation has been identified as the primary focus for the sound development of this variable, with particular interest in orientation classes⁴ and orientation curriculum⁵ as a mode of student adjustment or "fit" to a college environment.

ENDNOTES

¹Walter R. Earl, "Intrusive Counseling: Help Before Academic Trouble Begins," paper presented at the American Personnel and Guidance Association Annual Convention, Washington, D.C., 21 March 1983.

²Ralph F. Berdie, "The University is a Many-Faceted Thing," Personnel and Guidance Journal 45 (January 1967), p. 269.

³Kenneth A. Feldman and Theodore M. Newcomb, The Impact of College on Students (San Francisco: Jossey-Bass, Inc., 1970), p. 111.

⁴Robert V. Heckel et al., University 101: An Educational Experiment (Columbia, S.C.: Social Problems Research Institute, 1972).

⁵The two most prominent texts for orientation curriculum are David B. Ellis, Becoming a Master Student, 5th ed. (Rapid City, S.D.: College Survival, Inc., 1984); and John N. Gardner and Jerome Jewler, College Is Only the Beginning: A Student Guide to Higher Education (Belmont, California: Wadsworth Publishing, 1985).

CHAPTER II

REVIEW OF THE LITERATURE

This research will attempt to describe a systematic retention model based on a theoretical framework of intrusive counseling. An understanding of current retention research suggests that various methods of orientation interventions are useful ways of delivering student counseling services. A theoretical framework for intrusive counseling will be based on the techniques of both prescriptive and developmental advising and will incorporate the applications and importance of direct academic intervention for student grade improvement and persistence.

The Theoretical Framework

By the end of the decade of the 1960s, retention of college students had become an economic as well as an ethical issue for most institutions of higher education. Most research focused on characteristics of non-persisting students. Pascarella and Terenzini were among the first to criticize a descriptive rather than a theoretical model for investigating dropout rates and argued that

the current lack of understanding of the college dropout process is due to the fact that the research emphasis has been descriptive rather than theory-based . . . [looking] for institutional variables significantly related to dropout behavior with no conceptual model to guide or focus inquiry.¹

Earlier, Spady had presented an empirical model of retention

based on Astin's student "fit" to the college environment.² Spady attempted "to develop an explanatory, predictive model of the dropout process which has at its core the concepts of academic and social integration in the institution."³

Tinto refined the theoretical model of "fit" by establishing that selection of college by students is frequently related to accessibility, and where that accessibility is more pragmatic than value choice, low attrition may result.⁴

The theoretical model for dealing with college attrition evolved through four distinct stages that are detailed in the recent "handbook" on student retention by Noel, Levitz and Saluri.⁵ Each stage was a developmental extension of retention theory. The first stage was characterized by predictive models such as the "early warning system" developed by Astin.⁶ The second stage was an emphasis on action-oriented responses that were based on programming that included study skill units, academic success groups and orientation classes. The guiding theorists during this stage were Beal and Noel.⁷ The third stage was an emphasis on campus-wide participation in retention efforts. During this stage the National Association of Academic Advising was organized and many campuses developed retention steering committees with both faculty and professional counselors as members. Smith created the nomenclature for this stage with his term, "innovative quality of life model."⁸ The importance of faculty-student relationships was the main concept during this stage. Walter identified the faculty-student relationship problem when he wrote:

What students are the most underprepared for are not the unfamiliar learning tasks, difficult as they may be. What they are truly underprepared for is the psychological

distance that most college and university faculty maintain between themselves and their students.⁹

The final stage of the development of a theory of retention was a concern about professional staffing. Keller defined staffing as an approach for getting the right person in the right place.¹⁰ Russell implied the content of intrusive counseling when he defined the tasks and knowledge that academic counseling professionals must have to meet the student's "myth of self-reliance." He listed specific informational tasks that are the responsibility of counselors who are working with probationary students. Among the topics he listed were appropriate course load, when to repeat failed classes, how to withdraw from classes, meeting prerequisites and effective use of general requirements.¹¹

The theoretical basis for an intrusive model of orientation includes all four of these stages in the development of a theory of retention. First, although intrusive actions are not based on predictive models, they are direct responses to diagnosed academic problems, and could therefore be called diagnostic models. Intrusive counseling is clearly the type of action-oriented response that was produced during the second stage. The third stage of campus wide involvement is reflected in the counselor's specific intrusive holistic interactions with students. In addition, intrusive counseling is an institutional strategy that is related to the curriculum concept of orientation. Finally, the intrusive model emphasizes the importance of the role of trained and responsive professionals.

Current research links student retention to the freshman year experience.¹² Research data are fairly clear in showing that the

freshman year is the crucial adjustment period for college students and the major determinate of continuance.¹³

For this reason, this research has tested the theoretical basis of an intrusive model with college freshmen on probation. These students were experiencing a freshmen year in which their "fit" to Old Dominion University was challenged by a grade point average below the minimum standard. This focus on freshmen on probation was consistent with the previously mentioned theories of Tinto, Pascarella and Terenzini who emphasize that academic and social integration is the key to student success in the freshman year. The added component of the intrusive model is specific professional intervention.

Although the model of "intrusive advising and orientation" differs in organizational form from either the "developmental" or "prescriptive" model of advising,¹⁴ this apparent difference in structure is not as important as the differing methods of relating to student motivation. Intrusive advising, therefore, is different from, but draws values out of, both prescriptive and developmental advising.

Prescriptive advising mandates that a student's performance follow set prescribed curriculum requirements, rules and regulations. Student motivation is secondary to required performance since the student is not in a learning mode. The prescriptive model does not solve the retention problems based on motivation to perform. In the intrusive model, prescription is made by the professional but is part of a curriculum or learning mode context.

Developmental advising is generally a one-to-one (or small group) interaction between a counselor and a student who is motivated to seek assistance. At the large university, this model's success depends on

workload distribution, availability of counselors at crisis times and student self-motivation. The model's greatest inefficiency is precisely at the time of greatest student need: the few weeks just preceding drop/add and at registration deadlines.

What is needed is a model of advising that identifies a student's "critical" need and strongly recommends or mandates continuous orientation modes that are responsive to a student's motivation for success. These modes are structured with the specific content of integration skills necessary for academic success. The curriculum format provides an appropriate structure for meaningful content delivery.

The intrusive orientation model is therefore an extension of the advising as curriculum model¹⁵ and systematically follows the five steps of curriculum development: set goals, define content, list experiences, create syllabus, evaluate, and set new goals.¹⁶ Like curriculum, intrusive counseling is an academic experience that is structured for students based on perceived needs, evaluated delivery systems, and within a concrete framework or syllabus.

This research takes the prospectus that student academic and social integration through curriculum content is a theoretical framework for implementing retention. The research tests the model of intrusive counseling of probationary freshmen as an appropriate retention effort at an urban university.

Academic Interventions

When college student enrollments began dropping in the late 1970s, the American Council on Education's Division of Policy Analysis and Research called for information from institutions about their

retention programs and held a series of conferences in 1980 on the subject.¹⁷ The attention to academic intervention strategies was a developmental stage of intrusive counseling. In intervention case studies, Henderson lists services from nightline emergency assistance to honor classes as retention methods targeted toward students with academic problems. She does not, however, cite any advising models as retention aids.¹⁸ Appleton describes an intervention advising program at Oakland University that included phone calls by counselors to undecided students at their homes. "These students were asked how they were progressing in their studies, encouraged to see their academic advisors and offered help."¹⁹ These counselors were using intrusive phone calls whereas the intrusive "hot line" in the Old Dominion University project was a student initiated phone call in response to an intrusive letter.

In addition to isolated retention actions, more structured counseling services emerged during the 1970s. These content oriented group counseling services were targeted toward students with specific identifiable needs such as study skills and were often targeted toward special populations. Structured group approaches were found by Treadwell to be associated with higher grades, particularly among high-risk students.²⁰ The orientation classes targeted toward probationary students therefore have a prototype as effective structured retention efforts. Contracted study goals were found by Polcynski and Shirland to produce more time-on-task for college students but not higher grades when compared to a control group not using contracts.²¹ Hudesman used a directive counseling method of structured contracts with students on probation at New York City Technical College (NYCTC) and found an

improvement in grade point average of students who received directive counseling using a grade contract but not among other students who received nondirective counseling without a grade contract. The grade contracted directive counseling is similar to intrusive counseling.²² The first counseling session of the Old Dominion University intrusive model used a questionnaire as a projective counseling method and in some cases also used a grade contract as a counseling device.

Counselors at New York City Technical College found that high-risk students responded to structured counseling but that there was no difference in retention among students receiving different styles of counseling (semistructured and nondirective). It should be noted that directive counseling is a counseling style whereas intrusive counseling is a method of contact with students in need of services. At NYCTC, all styles of counseling were conducted in a routine, not intrusive, counseling mode regardless of whether or not the counseling style was directive.²³

A continued search of retention studies will produce many specific intrusive actions. However, descriptive intervention strategies that are not theory based are not the same as intrusive counseling and orientation.

Intrusive Counseling and Orientation

The concept of intrusive counseling has been utilized in many retention efforts but the term as applied to deliberate intervention in advising has appeared in print only a few times. Appleton used the term in quotation marks in March 1983, suggesting that the term had already appeared in literature.²⁴ However, his intrusive advising was

described as only general orientation sessions that are routine at Old Dominion University.

Glennen, while Dean of the University College at the University of Nevada-Las Vegas, set up a centralized voluntary advising system that he called "Intrusive College Counseling," which included tutoring and academic information.²⁵

Later, the term was related to developmental advising by Glennen and Baxley. In response to the problem that students at Western New Mexico University "showed a disinclination to voluntarily seek assistance," Glennen initiated a mandatory advising system similar to one operating at Old Dominion University but he labeled it "Intrusive Advisement." Glennen and Baxley present descriptive statistics indicating an enrollment increase and attrition decrease. No experimental research is listed and the project is accurately described as mandatory advising rather than intrusive counseling.²⁶

Tinto, in an attempt to develop a predictive rather than a descriptive theory of dropout behavior, identified the social integration of a student to the college environment and used the term intrusive to refer to the creation of a "staying" environment in order to increase retention.²⁷ Two years later, Terenzini and Pascarella synthesised current retention practices based on Tinto's model. They concluded that Tinto's model identified attrition as a long term process: "The Tinto model views attrition as a longitudinal process involving a complex series of sociopsychological interactions between the student and the institutional environment."²⁸

An experimental test of Tinto's model was conducted by Tata at the University of Texas at Arlington. An "intrusive advisement"

program was implemented for selected first semester freshmen. A questionnaire designed to identify selected attributes of a student was returned by 300 freshmen and individually addressed packages were mailed to responding students. The packets contained the name of a contact counselor who would offer any needed assistance. Two follow-up letters offering help were also mailed. No record of response was recorded or analyzed. Attrition rate of the experimental group were compared to a control population who did not receive the mailings. No significant differences were found. This study was an attempt to validate Tinto's model of the relationship of retention to social integration. It was not as strictly intrusive as this Old Dominion University study because it did not direct specific academic assistance toward high-risk students.²⁹

Cope also related social integration between faculty and students to academic concerns and found indications of improved retention. But he cites no research model.³⁰ Mannan and Preusz thought that an intrusive orientation program was so essential for high risk students that they recommended a mandatory introductory course in student development for identified high risk students at Indiana University-Purdue. They, however, did not have any experimental research to show that it reduced attrition among these students.³¹

A Theoretical Model of Intrusive Counseling

The theoretical basis of intrusive counseling as a model of retention is based on three principles supported by a study of the literature. The first principle is that academic and social integration is the key to freshman persistence in college. The second

principle is that deficiencies in this necessary integration are treatable. Students can be taught orientation skills. The third principle is that student motivation to seek assistance does not need to be an operational variable in this treatment. Intrusive orientation does not depend on volunteerism but is a response to identified curriculum need.

The first principle in a theory-based model is that academic and social integration within the context of the freshman year is the key to persistence. Astin established the importance of academic "fit" in his early research. He theorized that students and institutions must have a match that produces student satisfaction and that this "fit" was a predictor of persistence. The intrusive mode of counseling is based on the premise that this "fit" is conceptual and can be learned by a student. A part of the curriculum of orientation is student adjustment to the institution by learning specific integration skills.

Tinto, whose model of retention advising coined the phrase, "intrusive," lists "personal variables" and "informal interaction among students and faculty members outside the classroom" as important components of retention.³³ Self-direction and the evaluation of personal variables are an intricate part of intrusive orientation curriculum. Tinto's outside the classroom activities can be structured within the content of the curriculum of orientation.³⁴

The second theory-based principle is that a lack of necessary integration is treatable. The primary treatment is an orientation curriculum that is applicable to all probationary freshmen regardless of the perceived difficulty of their majors. In a seven year longitudinal study using an indirect standardization method, Earl showed

that student retention risk was not related to the choice of major.³⁵ Academic difficulty of a major is therefore not a major retention concern and no differentiation among students by major is necessary in intrusive treatment curriculum.

In another study of first year university students on probation, Earl showed a statistically higher grade point average for treated freshman based on percentages of grade modes. The treatment was a structured orientation class for probationary students. Students were placed in the class by their academic counselors. Again, the variable seems to be intrusive action.³⁶

In a study by Earl, Murray, Powell and Jacobson, ANOVA and T-test statistics in a pilot project similar to this study showed that intrusively treated probationary freshmen did significantly better scholastically than a control group.³⁷ A tally of the results of the questionnaire used in this project listed the most frequent reasons for probation as: (1) conflict between class and job, (2) inadequate financial aid and (3) inadequate student-faculty contact. These issues were intrusively addressed by academic counselors using the questionnaire format with probationary students in the model evaluated by this dissertation.

The third principle of the theoretical model is that motivation is not the cause but the result of intrusive orientation activities. Sappinton experimented with behavior-modification by paying sixteen students to participate in a self-control study skill program. The eight students in the experimental group significantly (T-test) increased effective study time while the control group not receiving the intrusive help did not significantly improve.³⁸ Pawlicki and

Connell found that a structured self-management technique taught to eighteen volunteer academically marginal students significantly improved their grade point average.³⁹

In both of these research projects, students learned self-management and thereby increased their academic performance. The theory of intrusive orientation is that student response is based on motivation to succeed rather than just a motivation to seek remediation or counseling help. Students are intrusively identified and placed in a curriculum that capitalizes on motivation to succeed through self-evaluation, learned study skills and learned involvement in campus life.

These three theoretical principles of an intrusive model of counseling were pilot tested at Old Dominion University in the spring of 1985 by five trained academic counselors in the School of General Studies,⁴⁰ and the impacted students are the experimental sample of this dissertation.

Justifications for the Intrusive Experiment

At the time of this project, the Director of Academic Orientation at Old Dominion University had been given a special mandate to develop orientation curriculum. The research project served not only the function of investigating an intrusive advising model on an urban campus, but also provided theoretical concepts that relate to the activities of campus student services.

Importance of the Project to Old Dominion University

As Old Dominion University is discussing restructuring of the

academic administration and redefining both academic advising and student services, General Education changes are mandating an "excellence" attitude toward student academic performance. The concept of intrusive assistance for the student with academic problems becomes an important priority to the university. This project will explore some innovative retention concepts and will provide data from this research project to assist in administrative decisions about orientation and advising of freshmen students as this urban university "move(s) [in the words of its new president] into the twenty-first century as an institution that is respected and admired throughout the nation and the world."⁴¹

The Urban Environment

The concept of identifying a prospective problem of a student and intrusively involving a student in an effort to solve that problem is an important concern to an urban university where a large percentage of students do not live in a dormitory. Generally, the basis of faculty/counselor contact with students outside the classroom is conceptualized around a resident hall environment that is consistent with Chickering's vectors of young adult developmental tasks within a campus environment.⁴² Resident assistants called "RA"s are professionally trained and live on the resident halls with students and function as mentors for problem identification. Bulletin boards, office-to-room announcements and the general community contacts of a resident hall bring a student's problem to the attention of a counselor or faculty member at an appropriate time for solution. This resident hall social group model does not impact on the majority of students at most urban university campuses because they are not dormitory residents. Commuter

students utilize only minimal campus contact points such as parking lots, food service centers, library and classroom. None of these contact points are particularly appropriate nor effective communication mechanisms for students with identifiable problems such as poor study skills, potential academic failure or lack of institutional "fit." The Chickering developmental task vectors have not been adequately explored in the urban campus environment. An application of intrusive counseling for the holistic development of urban students is implied by this research project.

Tinto's statement that "there is a need for additional research on the phenomenon of dropout from urban institutions of higher education," is relevant to the need for intrusive action rather than the dormitory social group support concept in dealing with the orientation problems of urban university students.

Given the fact that most students in such institutions do not live near the institution itself, it is unclear to what degree participation in social groups external to the college influences persistence in the institution. Nor is it clear how such social groups overlap and intersect with the social system composed of one's peers in the college environment. Whether social integration, as defined here, becomes irrelevant to the question of dropout from urban institutions remains undetermined.⁴³

The application of the research of Astin at both Delaware State College and the College of the Albemarle illustrates the unique considerations of intrusive counseling in a commuter environment. Astin developed an agenda for "early warning" that was utilized at the basically residential Delaware State College.⁴⁴ Through an intrusive measurement of high school grades, standardized tests, personal and family background and evaluation of educational aspirations, Delaware State College initiated an intrusive program of orientation for

students identified by "early warning" as having a high "probability of dropping out." The program was modestly successful at Delaware State, where a resident support system was in place.⁴⁵ But when the model was applied by the administration of the College of the Albemarle to its slightly older commuting student population, the experiment was singularly unproductive and nonpredictive.⁴⁶ An evaluation of the College of the Albemarle situation suggests that the intrusive system that worked so well at a resident school did not work at all at a commuter school because of the nature of the population.

Old Dominion University, like the College of the Albemarle, has a large segment of non-traditional students who do not generally respond to the traditional method of orientation even if it is an Astin type intrusive effort. This research will attempt to illustrate an intrusive model that will be effective at an urban university, for both resident and commuter students.

Measurements of Success

Because of the more impersonal nature of an urban university, and because of a larger segment of non-traditional students, an intrusive curriculum for academic success is particularly appropriate. The core of this curriculum is an emphasis on encouraging student motivation to succeed.

A 1980 literature review by the American Association for Higher Education established "the impact of motivational factors" on student retention and related these factors to a student's "institutional fit."⁴⁷ They thereby linked institutional fit to the important intrusive counseling component of motivation for success.

Ramist documents the national dropout rate at between 10 and 35 percent and lists as primary reasons for dropout, "motivational problems" and "academic performance dissatisfaction."⁴⁸ Dropout, then, should be reduced by an orientation curriculum that teaches success motivation and performance skills.

Avakian, MacKinney and Allen statistically showed that grade point average was strongly and positively related to retention over a five year study at the University of Missouri-St. Louis. They found that the longer a student persisted, the more positive was the relationship between retention and grade point average. By inference, the freshman year success is greatly influenced by non-grade variables, and survival of that freshman year enhances the accuracy of grade point average as the measure of academic success for upperclassmen.⁴⁹ G.P.A. changes, therefore, may be a particularly important measurement of the impact of retention efforts at urban universities and successful orientation intervention should result in improved g.p.a. and persistence, particularly with freshmen.

Therefore, treatment of matriculated students (who meet all admissions standards and therefore are predicted to be successful) who have below standard g.p.a.s at the end of their first semester provides a unique population for testing the pragmatic outcomes of the theoretical model of intrusive counseling and orientation. If the model is effective, these outcomes should be higher grade point averages and a more stable persistence record for the treated sample than for the control sample.

Endnotes

¹Ernest T. Pascarella and Patrick T. Terenzini, "Predicting Freshman Persistence and Voluntary Dropout Decisions from a Theoretical Model," Journal of Higher Education 51 (1980):60.

²Alexander W. Astin, Predicting Academic Performance in College (New York: New York Free Press, 1971).

³William G. Spady, "Dropouts from Higher Education: Toward an Empirical Model," Interchange 2 (1971):38-62.

⁴Vincent Tinto, "The Effect of College Accessibility Upon the Rate and Selectivity of College Attendance" (Ph.D. dissertation, University of Chicago, 1971).

⁵Lee Noel, Randi S. Levitz and Diana Saluri, Increasing Student Retention: Effective Programs and Practices for Reducing the Dropout Rate (San Francisco: Jossey-Bass, Inc., 1985), pp. 15-20.

⁶Alexander W. Astin, Preventing Students from Dropping Out (San Francisco: Jossey-Bass, 1975).

⁷Phillip E. Beal and Lee Noel, What Works in Student Retention (Iowa City: ACT Program and National Center for Higher Education Management Systems, 1980).

⁸Laurence N. Smith et al., Mobilizing the Campus for Retention: An Innovative Quality of Life Model (Iowa City: ACT National Center for the Advancement of Educational Practices, 1981).

⁹Lowell M. Walter, "Lifeline to the Underprepared: Successful Academic Advising," Improving College and University Teaching 30:161.

¹⁰George Keller, Academic Strategy: The Management Revolution in American Higher Education (Baltimore: Johns Hopkins University Press, 1983).

¹¹James E. Russell, "Problem Areas for the Student on Probation: The Role of the Academic Advisor," NACADA Journal 4 (September 1981): 56-58.

¹²The ACT National Center for the Advancement of Educational Practices Workshop, Richard D. Rowrey and Christine K. Wilkinson, Faculty, "Successful Student Transition--A Total Approach from Initial Contact through the Freshman Year," Washington, D.C., 26-27 February 1986.

¹³Lokity Sprandel, "The First Year: A Look at the Freshman Experience," Journal of College Student Personnel 17 (July 1976):274-79.

¹⁴Roger R. Winston, Jr. and Janet A. Sandor, "Developmental Academic Advising: What Do Students Want?" NACADA Journal 4 (1984): 5-13.

¹⁵Walter R. Earl, "Academic Advisors, Teachers of Academic Planning," Proceedings of Ninth (NACADA) National Conference on Academic Advising (October 1985).

¹⁶David K. Wheeler, Curriculum Process (London: University of London Press, 1967).

¹⁷John P. Jackley and Cathy Henderson, "Retention: Tactic for the Eighties," Policy Brief: American Council on Education (December 1979).

- 18Cathy Henderson, "Retention Improvement: Selective Case Studies." Policy Brief: American Council on Education (December 1980).
- 19Seldon Appleton, "The Impact of an Academic Advising Program: A Case Study," NACADA Journal 3 (March 1983):57-63.
- 20v. Treadwell, "Counselor Education: Group and Individual Counseling: Effect on College Grades," Journal of Non-White Concerns in Personnel and Guidance 4 (1975):73-82.
- 21James Larry. Polcynski and L. E. Shirland, "Expectancy Theory and Contract Grading Combined As an Effective Motivational Force for College Students," Journal of Educational Research 70 (1977):238-51.
- 22John Hudesman et al., "The Effect of Academic Contracting and Semi-Structured Counseling Sessions on GPA for Students in Academic Difficulty," Journal of College Student Personnel 25 (1983):278-79.
- 23John Hudesman et al., "Impact of Counseling Style on the Academic Performance of College Students in Special Programs," Journal of College Student Personnel 27 (1986):394-99.
- 24Appleton, "Impact of Academic Advising Program," 3:58.
- 25Robert E Glennen, "Intrusive College Counseling," College Student Journal 9 (February-March 1975):2-4.
- 26Robert E. Glennen and Dan M. Baxley, "Reduction of Attrition through Intrusive Advising," NASPA Journal 22 (1985):10-14.
- 27Vincent Tinto. "Dropout from Higher Education: A Theoretical Synthesis of Recent Research," Review of Educational Research 45 (1975): 89-125.
- 28Patrick T. Terenzini and Ernest T. Pascarella, "Toward the Validation of Tinto's Model of College Student Attrition: A Review of Recent Studies," Research in Higher Education 6 (1977):272.

²⁹Chet Tata, Jr., "The Effect of an Intrusive Advisement Program on First-Term Freshman Attrition," paper presented at the Annual Forum of the Association for Institutional Research, Minneapolis, 1981.

³⁰Robert G. Cope and William Hannah, Revolving College Doors: Causes and Consequences of Dropping Out, Stopping Out and Transferring (New York: John Wiley and Sons, 1975).

³¹Golam Mannan and Gerald C. Preusz, "Reducing Student Attrition on Urban Campuses," College Student Journal 14 (Spring 1980):19-23.

³²Astin, Predicting Academic Performance.

³³Vincent Tinto, "Limits of Theory and Practice in Student Attrition," Journal of Higher Education 53 (November-December 1982):687-700.

³⁴Walter R. Earl, "Structured Freshman Involvement in Campus Activities: A Three Phase Model," Proceedings: Here-Now Conference (Atlanta: College Survival Incorp., 1986).

³⁵Walter R. Earl, "Study of the Relationship Between Pre-Major Choice and the Risk of Suspension for General Studies Students, 1976-1983," (Summary Report, Old Dominion University, 1983).

³⁶Walter R. Earl, "Impact of Special Section of University 101 upon First Year Students on Probation," (Annual Report, Academic Counseling and Testing, School of General Studies, Old Dominion University, August 1984).

³⁷Walter R. Earl et al., "Statistical Summary of Pilot Project: Intrusive Advising Model," Old Dominion University, 1983.

³⁸Andrew A. Sappinton et al., "Self Directed Study Skills Programs for Students on Probation," Journal of Counseling Psychology 27 (November 1980):616-19.

³⁹L. Pawlicki and C. W. Connell, "Helping Marginal Students Improve Academic Performance Through Self-Management," NACADA Journal 1 (January 1981):44-52.

⁴⁰Walter R. Earl, "An Improved Model for Academic Counseling," Old Dominion University, May 1985.

⁴¹Joseph M. Marchello, "Inaugural Address," Old Dominion University Courier, 22 November 1985, p. 1.

⁴²Arthur W. Chickering, Education and Identity (San Francisco: Jossey-Bass Inc., 1969).

⁴³Tinto, "Limits of Theory and Practice," p. 697.

⁴⁴Astin, Preventing Students From Dropping Out.

⁴⁵David Reynard, "Project FAR: Freshman Attrition Reduction," Delaware State College, 1983.

⁴⁶"Implementation Manual for the Attrition Reduction Program," College of the Albemarle, Elizabeth City, North Carolina, 1983.

⁴⁷Oscar T. Lenning, K. Sauer and Phillip E. Beal, "Student Retention Strategies," AAHE-EDRIC/Higher Education Research Report, American Association for Higher Education 8 (1980).

⁴⁸Leonard Ramist, "College Student Attrition and Retention," Findings, 6 (1981):1-4.

⁴⁹A. N. Avakian, A.C. MacKinney and G.R. Allen. "Race and Sex in Student Retention at an Urban University," College and University 57 (Winter 1982):160-65.

CHAPTER III

METHODOLOGY

This research developed and evaluated a model of intrusive intervention with urban university students who were on probation at the end of their first semester in order to identify the effectiveness of the model in an urban environment. Approval was granted by the University Human Subjects Committee.

The Research Procedures

The procedures of this research project were as follows:

1. To identify the intrusive orientation and advising that was applied to responding probationary first semester freshman so that an Intrusive Orientation Model could be described
2. To define the experimental group as two sub-groups identified by the type of intrusive advising applied, personal counseling and personal counseling with an orientation class
3. To select systematically a control group from the entire first semester freshman probationary population computer list
4. To provide demographic data about this sample of freshmen at an urban university who are placed on probation at the end of their first semester
5. To compare the grade point average and the retention status over time between the experimental and the control sample
6. To compare the grade point average and the retention status

over time between each of the sub-groups based on admission status

7. To compare the grade point average and the retention status over time of the sub-group involved in the orientation classes

8. To make grade point comparisons between the probationary semester and the end of the spring semester, four semesters later

9. To make retention status comparisons based on continuous enrollment, stop-out rates and dropout rates.

Design of the Study

Students at Old Dominion University in the School of General Studies who were on probation at the beginning of their second semester (January 1985) were identified and sent a letter inviting them to participate in an intrusive counseling program. A "hot line" number was provided and the students were encouraged to phone that number and/or make an appointment to talk with a counselor about their probationary status. Responding students, the experimental population, were compared to a control group of systematically selected students from the probationary population.

All members of the sample had equal access to the model since intrusive assistance was offered to all probationary freshmen. The students in the experimental group were self-selected by responding to the intrusive letter and seeking counseling help. Three criteria were set to help control for the variable of motivation. First, each member of the control population must have been in attendance during the semester of the treatment and thus demonstrate their intention to continue in college. Second, students in the control population were matched by both admission code and probationary status to the students

in the experimental population. Third, high school grade point averages and College Board Scholastic Aptitude test scores were compared by analysis of covariance to show that the experimental and control samples did not have differences in academic background as an academic continuance motivation factor.

The Experimental Sample

Of the 638 students in the probation population, 76 made some response (12 percent). Two students were varsity athletes and were deleted from the experimental population because they were already receiving special monitoring from the counselor for student athletes. Of the 74 remaining students, 39 students were involved in an intensive intrusive counseling component (6 percent of probationary population and 53 percent of experimental group); 22 students were involved in intrusive counseling that placed them in a special semester class for probationary students (4 percent of probationary population and 30 percent of experimental group); and 13 students were involved in intrusive counseling as a part of a special Academic Opportunity Program and placed in a special semester class for probationary A.O.P. students (2 percent of probationary population and 17 percent of experimental group). These three groups were identified as "Counseling Population," "Orientation Class Population," and "A.O.P. Orientation Class Population," respectively. Groups two and three can be combined into an "orientation class sample" of 36 students (5 percent of the probationary population and 47 percent of the experimental group). Table 1 shows the division of the experimental sample by groups.

The independent variable, the intrusive counseling model, was a

TABLE 1
EXPERIMENTAL SUB-POPULATIONS

	Catg. I -12 hrs.	Catg. II Probation	Catg. III Suspension	Total
101 Class				
Regular	1	14	7	22
A.O.P.	0	11	2	13
N=35	1	25	9	35
Counseling				
Regular	2	17	11	30
A.O.P.	1	8	0	9
N=39	3	25	11	39
Total sample				
Regular	3	31	18	52
A.O.P.	1	19	2	22
N=74	4	50	20	74

schema containing seven components. Each component of this seven part model impacted on all of the students in the experimental population.

The first component of the intrusive counseling model was a student initiated response to the intrusive letter. All students in the population either responded with a phone call utilizing the "hot line" or came in person to the academic counseling office prior to the end of the first week of classes of the spring 1985 semester. Second,

each of the responding students met with an academic counselor in a counseling session for an initial "exploratory session." Third, each student was asked to complete a questionnaire listing those factors that most contributed to the probationary status. An opportunity to free respond was provided at the end of the questionnaire. Fourth, the counselor and the student spent time discussing the questionnaire responses. Fifth, the student contracted a specific course of action. These actions could involve academic success groups, group or individual extended counseling, rescheduling of the current semester classes, and/or enrollment in the special University Orientation class for probationary students. Sixth, a follow-up appointment was made with the counselor. Students not enrolled in the university orientation class made this appointment for three weeks later. Students enrolled in the class made the appointment on an informal basis by agreeing to see the counselor at least once before the advising appointment. Seventh, an advising appointment in which counselor and student planned classes for the Fall 1986 semester and discussed current semester grades concluded the intrusive contact with the academic counselor.

The Control Sample

A three semester follow-up longitudinal study comparing the grade point average and retention status of the 74 student experimental sample to the grade point average and retention status of a similar size control sample was conducted. The control sample was systematically selected from the non-responding probationary students. Systematic sampling, rather than pure random sampling, was used because of the need to match admission status and probation status of the control

population to the experimental population. To do this, it was necessary to use the probationary records available at the specific time, January 1, 1985. The freshmen probationary population used was a "point-in-time" computer generated list of all students who had been enrolled as full time students, were in the first semester of matriculation, and obtained a grade point average below a C or 2.00 on a four point scale on the initial grade run. This population had the fluid and unstable characteristics of a first semester urban student population and was not definable across several semesters because of constant on-line changes to the list by grade changes, incompletes becoming retroactive grades, and other continuing changes to the data base. Therefore a selected sampling from the initial probationary list utilized to generate the intrusive letters was used. This list categorized the probationary students into one of three probationary status groups: (1) grade point average (g.p.a.) was in the probationary zone but the student had attempted less than 12 hours of classes (HA:Hours Attempted = -12); (2) the student had a full semester of work (HA = 12 or more) and had a g.p.a. in the probationary zone; and (3) the student had a full semester of work, was in the suspension zone but was not subject to suspension because twenty four hours of work had not been attempted (HA = +11,-24).

Each student in both samples was in one and only one of the three probationary categories. In addition, each student was either in the Code 11 (regular admit) or Code 13 (Academic Opportunity Program admit) admission classification (see table 2). To select a control sample, students not in the experimental sample but on the probation list were

TABLE 2
SAMPLE BY ADMISSION STATUS

Status	Catg.I -12 hrs.	Catg.II Probation	Catg.III Suspension	Total
Regular Admit				
(Code 11)				
Experimental	3	31	18	52
Control	3	31	18	52
Total	6	62	36	104
A.O.P. admit				
(Code 13)				
Experimental	1	19	2	22
Control	1	19	2	22
Total	2	38	4	44
Total sample				
Experimental	4	50	20	74
Control	4	50	20	74
Total	8	100	40	148

matched by the dual category of admission status and probationary status. Varsity athletes who were receiving special monitoring by the counselor for student athletes were deleted from all populations. Probationary students who did not enroll for classes were deleted. In

addition, registered students who did not attend classes and students who dropped out during the treatment semester were removed from the probationary list. This left a freshman probationary population of 521 students whose names were then used to select the control sample (see table 3). The number of students in each category (see figure 1) was

TABLE 3
ANALYSIS OF CHOICE OF CONTROL SAMPLE

	Catg.I -12 hrs.	Catg.II Probation	Catg.III Suspension	Total
Total letters mailed	97	417	124	638
Subtract experimental sample	-4	-52	-20	-76
Choice balance	93	365	104	562
Delete athletes	-0	-8	-2	-10
Choice balance	93	357	102	552
Delete dropouts*	-0	-12	-19	-31
Choice balance	93	345	83	521
Isolate A.O.P. choice balances	2	42	15	59
Regular admit choice balances	91	303	68	462

* Not registered, dropped all classes or never attended semester of treatment, Spring 1984

divided by the number of experimental students in that category to arrive at a selection criterion number. This selection criterion number was used to count names from alternately the top and the bottom

Admit status and probation category	Number in choice pool	Selection process	Number chosen for control sample
A.O.P. admits	59		22
Catg. I (-12 hrs.)	2	Each name # 2 from bottom	1
Catg. II (prob.)	42	Each name # 2 from top, until	19
Catg. III (susp.)	15	Each name # 7 from bottom	2
Regular admits	462		52
Catg. I (-12 hrs.)	91	Each name # 30 from top	3
Catg. II (prob.)	303	Each name # 9 from bottom, until	31
Catg. III (susp.)	68	Each name # 3 from top, until	18

Fig. 1. Process by which control sample was selected from pool of first semester probationary students.

of each category list to systematically select a control sample equal in number and by category to the experimental sample.

If any student selected did not continue at the university for the second semester (the semester in which the intrusive project was operative for the 74 experimental students) that selection criterion

number position was filled by the first of the following four names that was a continuing student during the semester of the intrusive treatment. This yielded a selective sample of exactly 74 control students. A demographic comparison of the control and experimental samples is shown in table 4.

To check for possible variables in the pretest sample populations, the covariates of gender, ethnicity, high school grade point average, and Scholastic Aptitude Test (S.A.T.) scores was tested for significant differences between the control and experimental samples. Since no significant differences were identified, equal samples were assumed.

Retention Status

In order to determine the impact of the independent variable, the intrusive model, a comparison was made between the retention status of the control and experimental sample populations. Students were identified by one of three retention descriptions: continuous, stop-out, or dropout.

Continuous Students

Continuous students were defined as those students who were enrolled from fall 1984 through the spring 1986 semester. Their grade point average and continuous status was a four semester measurement.

Stop-Out Students

Stop-out students were defined as those students who were enrolled for the two semesters of the project (fall 1984 and spring 1985) and were enrolled for the Spring semester 1986 but were not

TABLE 4

DEMOGRAPHY OF SAMPLES

	Control sample	Experimental sample	Total of samples
Number	74	74	148
Gender			
Male	33	41	74
Female	41	33	74
Ethnicity			
Black	10	13	23
White	61	55	116
Other	3	6	9
Sending high school			
Tidewater	31	32	63
Other Virginia	29	29	58
Out-of-state	14	13	27
High school G.P.A.			
Mean	2.58	2.63	2.60
Std. dev.	.32	.45	.39
Range	2.12-3.85	1.60-3.75	1.60-3.85
S.A.T. scores			
Mean	854	857	855
Std. dev.	137	126	131
Range	500-1260	620-1200	500-1260
Admit status			
Regular	52	52	104
A.O.P.	22	22	44
G.P.A. prob. sem.			
Mean	1.23	1.28	1.26
Std. dev.	.50	.47	.48
Range	0.00-1.93	0.21-1.92	0.00-1.93
Probation status			
Suspension zone	20	20	40
Regular	50	50	100
Under 12 hours	4	4	8

enrolled for the intermittent semester of Fall 1985. The intervening

experiences of these students (another college experience, maturation, etc.) can not be identified but the assumption can be made that they seek to continue their education.

Dropout Students

Dropout students were defined as those students who were enrolled for the two semesters of the project (fall 1984 and spring 1985), but were not enrolled for the fall 1985 and/or spring 1986 semesters. This included all students suspended for one year or more.

Motivation As a Variable

Whenever students self-select to participate in an experimental situation, the possibility of motivation as a additional independent variable must be considered. Educational research has not been able to define motivation, particularly not for college students who are in various stages of young adult development. However, part of the premise in the development of an intrusive model is that motivation to succeed is a learned process not necessarily related to the motivation to seek academic help. To help control for any differences of initial motivation to seek help, the control sample was matched to the experimental sample by admission status and by probationary status. In addition, high school grade point averages and S.A.T. scores were compared to show that the two samples were not different.

Access to the treatment was equally available to all probationary students enrolled at the beginning of the treatment semester, and responses to the probationary letter were frequently external to a clear student choice. The respondents to the letters were sometimes parents of students. The relationship of a freshman to the develop-

mental task of autonomy places each student in a different position on the continuum of accepting or rejecting intrusively offered assistance. For example, counselors have observed the tendency of freshmen as a population to respond more automatically to suggestions than students with more distance from the regulations of high school. Many of the control sample students had no choice but to visit an academic counselor who would exert external pressures to participate in the treatment. Some students, following the poor planning habits that may have contributed to their probationary status, had not pre-registered for classes. Many had to change classes because of failures in prerequisite courses. Some were changing majors or concentrations because of poor performance in major core classes. It is, therefore, postulated that the response of probationary students may have been as strongly related to happenstance and the processes of academic advising as it was to personal motivation to become academically successful.

All of these internal and external environmental influences are likely to have applied equally to the students in both experimental and control samples. There is no reason to believe that motivation to seek help was stronger than academic needs, parental pressures and counselor pressures. Involvement in the treatment by the experimental sample seemed to be a random situation based on student environmental factors. It could be argued that the experimental samples were the most needy of the probationary students rather than the more highly motivated.

Implementation of the Intrusive Model

First semester freshmen who had registered originally for 12 or more credit hours with a resulting grade point average below a "C"

(2.00 quality point average) were identified by a computer run. These students were sent a special letter from the Director of Orientation and Advising offering intrusive assistance because they were on probation. The letter offered a "hot line" phone number to call for information and/or to make an appointment with a counselor. The letter encouraged the student to phone or to come by the office to make an appointment with a counselor.

Responding students met with a counselor who logged in the conferences on a special form designed for the project. Students completed the questionnaire. The student and the counselor discussed the questionnaire selections made by the student and agreed on a programmed course of action for the student. The student made a second appointment with the counselor for evaluation of progress.

During a third appointment, the counselor and student discussed the program of action, evaluated its effectiveness and planned classes for the next semester.

Planning

The research project was in place at the beginning of the Spring semester, 1985. The counselors in the Department of Orientation and Advising helped plan the project and five of them volunteered to work with the special targeted probationary students. The participating counselors met several times in a workshop setting to prepare for the intrusive counseling.

Identification of the participating students was made and this information stored. Other data necessary for the study were part of the IBM Integrated Student Information System (ISIS) to which academic

counselors had access authorization.

The Pilot Study

The Department of Orientation and Advising participated in a pilot study of this intrusive model in January-February, 1984. Procedures were refined, letters and forms were edited and the questionnaire revised. These revisions from the pilot study were used in the current project. The results of this pilot study are available in the Earl, Murray, Powell and Jacobson report.¹

Endnotes

- ¹Earl el al., "Statistical Summary of Pilot Project."

CHAPTER IV

ANALYSIS OF DATA

The analysis of data will begin with a comparative description of the experimental and control samples. Data will be analyzed by evaluating the demographic information to establish the validity of the matched groups. The relationship of control and experimental populations to predictors of college success will be analyzed to evaluate the equivalence of the two samples. Then, the end grade point averages and changes in grade point averages over time will be analyzed to evaluate the impact of the intrusive treatment. Finally, continuance data will be analyzed to evaluate the impact of intrusive treatment on retention.

Comparison of Samples

To determine the impact of an intrusive counseling model (the independent variable) upon the grade point average and retention status of probationary students at an urban university, three experimental samples and one control sample were identified. The 74 students in the experimental sample were in one of the following groups:

1. The counseling population who were probationary students who participated only in the counseling component of the intrusive model (N=39)

2. The orientation class population who were probationary students who participated in the counseling component and the special academic class for probationary students and who are not special-admit

students (N=22)

3. The A.O.P. orientation class population who were probationary students who were already a part of the Academic Opportunity Program and who participated in the counseling component and the special academic class for probationary A.O.P. students (N=13).

The control population was a systematically selected sample of probationary students who were enrolled in classes for the semester in which the experiment was in effect (N=74).

Figure 2 details the composition of the comparison groups.

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1. The control group (N=74) and the experimental group (N=74).
 2. The control group (N=74) and each experimental sub-group (N= 22, 13, <35> and 39).
 3. Comparisons 1 and 2 above by the A.O.P. variable.
 4. Comparisons 1 and 2 above by experimental orientation class sub-group (N=35).
-

Fig. 2. Composition of comparison groups.

Treatment of Scholastic Achievement Data

Scholastic achievement is generally measured by calculating the grade point averages. The entire population was uniformly measured by a quantitative grading system of A, B, C, D, and F calculated as quality points on a four point scale where an A had the value of 4.00 and an F had the value of 0.00. All students in the control and experimental

samples had a grade point average (g.p.a.) below a 2.00 (below a "C" average) at the end of the fall 1984 semester (January 1985).

The first measurement of the impact of the independent variable, the intrusive model, was by comparison of quality point averages over time. Range, mean, and standard deviation was generated by an SPSS "breakdown" procedure for the experimental and the control group and the various sub-groups of the experimental sample. In addition, an analysis of variance produced an F ratio that measured significant differences. Conceptually, the ANOVA divides the scores into the categories of the independent variables (control group, experimental group and its sub-populations) "and the differences between the means of these categories on the dependent variable <g.p.a.> are tested for statistical significance."¹

The data showed no significant difference in the g.p.a. of the experimental and the control samples at the beginning of the semester of treatment, spring 1985. Since the independent variable was effective, a significant difference in the g.p.a. between the control and the experimental samples was measurable at the end of the spring semester (May 1986).

Since the demographic variables between the control and the experimental samples were not significant, no further measurements of demographic group differences were made.

Treatment of Continuance Data

To make the best judgement of the impact of the independent variable (intrusive orientation) on the factor of continuance (dependent variable), two statistical procedures were used to decide if the

intrusive orientation model was a positive retention factor.

The first procedure used was a simple crosstab table. Crosstabs are simple descriptive measures that are easy to visualize. By converting the table values to percentages (by calculating from the independent variable to the dependent variable one row at a time) they become frequency or proportion data without changing the pattern of the frequencies as is done with the use of Chi Square.

The categories of Continuous, Stop-out, and Dropout qualify as the nominal data necessary when using crosstabs by meeting the five general rules of partitioning or categorization.² An advantage to crosstabs was that the percentages of the control group could be visualized as the probability statistics for the experimental group, thus defining the retention relationship between them.

The crosstabs gave a general measure of the retention impact, but left the judgement of significance to the observer; therefore, it was appropriate to also use the chi square test of independence statistical procedure. When there are as many as 20 students in a cell, the pattern of the frequencies can be changed from rows to columns to develop a frequency expectation based on the categories of the dependent variable. By adding the quantities in the Drop category of both the control and experimental groups a total was produced that could be used to calculate by percentage the expected frequency (f_e) of the Drop cell. The same process was followed for the Stop-out and Continuous categories. The data were then calculated at both the .05 and .01 level of difficulty to determine the significance level of the impact of the intrusive orientation on retention.

In addition to comparing the control and experimental samples by

both crosstab and chi square, the relationships of the other comparison groups shown in figure 2 was also tabulated.

Other Variables To Be Considered

Two other variables influencing intrusive assistance could have been present and therefore were isolated:

1. Students in the control sample were matched by admission status to those Academic Opportunity Program students in the experimental sample. The A.O.P. students in all samples were therefore isolated to determine the impact of their status on continuance and on grade point averages.

2. Since the academic performance of varsity athletes is monitored by the special counselor for student athletes, all varsity athletes had been excluded from both the experimental (two students deleted) and the control (10 students deleted) samples. This deletion is roughly two or three percent of each population.

Matched Groups

The control sample was matched to the experimental population by probation status at the end of the fall semester, 1984 (84-1). The following tabulation and evaluation of these populations indicate that the two samples were sufficiently similar so that variables such as gender, race, region of high school, Scholastic Aptitude Test entrance scores, and high school grade point average were not confounding variables.

Gender

The gender composition of the national college enrollment in 1986 was 40 percent male and 60 percent female.³ Old Dominion University

traditionally has a more balanced gender division with females exceeding males by only a few percentage points. For example, females were 51.6 percent of the student body in 1977 and 50.2 percent of the population in 1986.⁴ In this study, there was a balance of 50 percent males and 50 percent females. However, there was a 10 percent reversing mismatch between genders in the control and experimental samples. In the control sample, females comprise 55 percent and males 45 percent of the gender division while in the experimental population the reverse division of 45 percent males and 55 percent females is present. This gender difference was well within the national difference of 20 percentage points and was therefore not likely to be a variance in this research on the impact of intrusive counseling on grades.

In addition, the matching of control to experimental sample was matched on probation status (see tables 1, 2, and 3). The major probation status category of "regular probation" accounted for 68 percent of the populations in both the control and experimental groups and the gender balance of this category is 50 percent male and 50 percent female. The probation category of "suspension zone" accounted for 27 percent of each population and included 52.5 percent males and 47.5 percent females. The probation status of "under 12 hours" includes a gender imbalance of two more females than males but with a very small population number of eight. This is actually only a gender difference of one person; if one female were a male the balance would be 50 percent each gender. Gender is therefore ruled out as a confounding variable in these samples because the total population is 50 percent each gender, the largest sub-population is within plus or minus 5 percent at a reverse ratio between experimental and control population

and the sub-population with an N=8 is 5 females and 3 males. This gender difference is still well within the national range.

Race

The national percentages of college population by race in 1985 was 81 percent white, 5 percent black and 14 percent other races. Old Dominion University is located in a region containing a higher than national percentage of blacks, and has consistently enrolled black and white students on a ratio of 10 percent black to 90 percent white. For example, in 1982, of the 1594 black and white freshmen, 10 percent were black and 90 percent were white. In 1983 the percentages among 1650 black and white freshmen were 11 percent and 89 percent, and in 1984 the percentages of 1584 black and white freshmen were again 11 percent and 89 percent.⁵ We can conclude that black to white ratio is generally about 10/11 percent to 89/90 percent.

The population in this study is 16 percent black, 78 percent white, 2 percent each for category "other" and Hispanic and 1 percent Ethnic American. On a black to white ratio, the students in the research population are 23 blacks or 17 percent and 116 whites or 84 percent. To control for the variable of race as a factor in the study, as well as to control for intrusive help, students were matched both by probation status and by two admission categories (see table 1). The two admission categories were regular admits and Academic Opportunity Program (A.O.P.) admits. The A.O.P. population is generally about 30 percent minority for any particular freshman class which is around 20 percentage points higher than the minority percentage of the total freshman class. The resulting race division of the research popula-

tions by admission status is shown in table 5.

TABLE 5
BLACK/WHITE COMPOSITION BY POPULATIONS

Control	Regular admit	03B/046W=049	B:06%	W:94%
Experimental	Regular admit	04B/051W=055	B:07%	W:93%
Total	Regular admit	07B/097W=104	B:07%	W:93%
Control	A.O.P. admit	07B/015W=022	B:32%	W:68%
Experimental	A.O.P. admit	09B/004W=013	B:69%	W:31%
Total	A.O.P. admit	16B/019W=035	B:46%	W:54%
Total pop.		23B/116W=139	B:17%	W:84%

If race is a variable on grades (and there is no evidence that it is at Old Dominion University), it must be noted that the experimental A.O.P. majority/minority percentages "flip-flop" with the control majority/minority percentages. Since current research suggests a lesser academic expectation from blacks because of lower social-economic background, if the variable does exist, it should impede the hypothesis that the experimental group will do better because of the treatment.

It is assumed that any variable of race that may be present is controlled by the isolation of the students in both control and experimental populations into the A.O.P. admission with its higher

percentage of minorities. The population includes a difference of only three students between the ten blacks in the control population and the 13 blacks in the experimental population.

Sending High School Region

Although there is no evidence that the high school of origin is related to the academic achievements of college students, the secondary schools were balanced between control and experimental populations according to three categories: (1) "Tidewater" which included regions within commuting distance of the campus, (2) "Other Virginia" which included in-state students from sending high schools outside of the Tidewater area, and (3) "Out of State" which included students from sending high schools from any area outside of Virginia. When Old Dominion University compared in-state and out-of-state enrollments between 1969 and 1978, little change in status was noted. In 1969, 12 percent of resident students were out-of-state as compared to 13 percent nine years later in 1978.⁶ A year earlier, Howell, Perkins and Young in a study of persisters and non-persisters at Old Dominion University showed that out-of-state students accounted for 13.5 percent of non-persisters.⁷ It can therefore be concluded that students on probation generally represent a similar percentage of students by in-state and out-of-state status as is represented in the total student population. This status by high school sending region will therefore not be considered as a variable in college success at Old Dominion University. However, the number of in-state and out-of-state students within the control sample is very closely matched to the sending region of students in the experimental sample (see table 6).

TABLE 6
POPULATIONS BY REGION OF SENDING SCHOOL

	Control	Experimental
Tidewater	31	32
Other Virginia	29	29
Out/state	14	13
Total	74	74

The two samples are as near balanced by region as is possible with a total population breakdown of 43 percent Tidewater sending school, 40 percent other Virginia sending school and 18 percent out-of-state sending school.

Admission Status

The admission status of the control sample was exactly matched to the admission status of the experimental sample by "regular" admission and "Academic Opportunity Program" admission status. This designation was made because the A.O.P. students were part of a program already involving special monitoring and advising.

Probation Status

The degree of academic difficulty indicated by "under 12 hours" (too few hours for formal evaluation), "regular" (standard probation),

and "suspension zone" (not subject to suspension because of freshman status), was carefully matched in the selection of the control population to the incidents in the experimental population.

Variable of Predicted Success

A factor that could influence the willingness of a student to seek help, and the ability to benefit from that sought help, is the potential for academic success. Assuming that the two major predictors of college success, high school grade point average and entrance examination scores, are valid indicators of a student's potential academic success, a researcher should be able to conclude that if these two factors were controlled in both experimental and control population, motivation to seek help would not likely be a confounding variable in a study of intrusive orientation and counseling since equal access was available to all students.

Crosstabs, breakdowns and one-way analysis of variance were all used to establish the equality of the experimental and control samples with regards to the variable of predicted success.

High School Grade Point Average

The high school grade point average is a numerical summary of the grades a student received in the academic subjects in high school with adjustments for advanced placement courses. The grade point average is based on a five point scale with the grade of "A" having the value of 4.00 and the grade of "F" having the value of 0.00.

High school grade point averages were available for 75 percent of the population or 111 cases. The range of high school grade point averages for the entire population was a broad 1.60 g.p.a. to 3.85

g.p.a. The median g.p.a. was 2.53 and the mean g.p.a. was 2.60. The standard deviation of .389 (near a one-third of a letter grade) indicates a homogeneous population.

The closeness of the mean high school grade point averages can be seen by examining table 7. A comparison of high school grade point average means of the control and experimental populations by admission status shows a range from 2.52 to 2.67 or a difference of only 0.15 of a grade point. A comparison by probation status shows a range of 0.38, or slightly more than a one-third of a grade point. A comparison of high school grade point average by the retention categories of continuous student, drop-out student and suspended student, shows a difference in means of 0.11 or slightly more than one-tenth of a grade point.

A crosstabulation of high school grade point average by quality points shows that 93 percent of the students in the research population had a grade point average within the range of above 2.00 but under 4.00. Of these students, 46 percent had g.p.a.s classified as "C" and 47 percent had g.p.a.s classified as "B." In the "C" grade class there were 23 students in the experimental sample compared to 28 students in the control sample. In the "B" class there were 25 students in the experimental sample compared to 27 students in the control sample. These numbers fail to result in a conclusion that high school grades are a confounding variable in the study of the impact of special intrusive help to the experimental sample. Although these crosstabulations, analysis of means and categorization by grade units of the high school grades appear to indicate that there is no significant difference between the high school grades of the control and the experimental population, a further analysis of this predictor of college success was

TABLE 7
MEAN HIGH SCHOOL GRADE POINT AVERAGES

	Mean	Std. dev.	Cases
Research population	2.60	.389	111
Regular admit			
Control	2.60	.353	38
Experimental			
Counseling	2.67	.476	28
Class	2.55	.440	14
A.O.P. admit			
Control	2.52	.218	18
Exp. class	2.63	.439	13
Probation status			
Under 12 hrs	2.91	.540	03
Regular	2.62	.408	76
Susp. zone	2.53	.317	32
Retention status			
Continuing	2.59	.376	45
Drop-out	2.53	.420	18
Suspended	2.64	.393	48

a one-way analysis of variance (ANOVA) between the variables of high school grades and the grades received at the end of the first semester. In addition, college board (S.A.T.) were analyzed as a covariance. If

either the control or the experimental sample had differing predictors of college success, that factor would need to be considered as a possible variable in any change in grades over time. The ANOVA for the entire population had an F of 1.371 with significance at the .24 level indicating that there was no significant relationship between the probation producing grades and the high school grade point average. When the entrance examination scores were added as a covariance, the F of the main effect was .51 and the F of the covariate was .66 with significance levels no lower than .42. The null hypothesis is accepted that there was no statistically significant relationship between the predictors of college success (high school grade point average and admission scores) and the grades at the end of the semester in which the students were placed on probation.

When the experimental sample was isolated from the control sample and an analysis of variance calculated between high school grade point average and first semester college grades, a similar lack of significance was found. For the experimental sample, the F was .75 with a significance level of .39 for ANOVA and a covariate F of .90 with a significance level of .77 after factoring in the S.A.T. scores. For the control sample, the F was .528 with a significance level of .47 with ANOVA and with the S.A.T. score factored in the covariate F was 3.44 with a significance level of .07.

This research has failed to find any evidence that high school grade point average was an indication of motivation to success in college for either the control or experimental samples. Whatever motivation to seek counseling help was generated by predictors of college success, this research has failed to find any differences in

these predictors between the two samples.

Scholastic Aptitude Test Scores

In addition to high school grade point averages, all applicants must present a Verbal and Quantitative Scholastic Aptitude Test scores (S.A.T.). Old Dominion University recommends a minimum combined score of 850 (an average of 425 on each score based on a standard scale of 200 to 800). A lower score is accepted if the high school grade point average is high. All students in the A.O.P. program were accepted with Verbal scores below the 425 cutoff.

Since this test measures "aptitude" for college work whether or not high school performance was of a college preparatory standard, this predicted ability to do college work can be considered as a possible motivation for seeking help when academic difficulty such as probation is encountered in the first semester. However, any influence of the S.A.T. can be disregarded since there was no significant differences between admission test scores for the experimental and control samples. Details of the S.A.T. scores by sample populations are shown in table 8.

The mean S.A.T. combined scores for the entire population was 855. The median score was 860 with a range from 500 to 1260. The standard deviation was 131 compared to the national standard deviation of 100. The mean scores for the regular admission students were 905 for the control group and 890 and 877 for the two regular experimental groups. The mean scores for the A.O.P. students were 721 for the control group and 719 for the experimental group. The control group has only a slightly higher combined verbal and math entrance scores than

TABLE 8
MEAN S.A.T. SCORES

Sample Population	Mean score	Cases
Control	853	64
Experimental	856	63
Regular admit		
Control	905	46
Experimental		
Counseling	89	34
Class	877	18
A.O.P. admit		
Control	721	18
Experimental	719	11
Probation status		
Under 12 hours	83	5
Regular	839	86
Suspension zone	899	36
Total research population	855	127

the experimental group.

When students are compared by probation status, those with under under 12 hours had a mean S.A.T. combined score of 830; those in the probation category had a mean score of 839 and those in the suspension zone had a higher mean score of 899.

The largest category of probationary students were the regular probationary group. Their mean entrance examination scores were 909 for the control regular students, 847 for the experimental counseling only group, 870 for the regular orientation class group, 720 for the control A.O.P. group, and 719 for the experimental A.O.P. orientation class group.

Crosstabulation of numbers of students in S.A.T. categories of "Very Low," "Sub Admissions," "Admissions range" and "Very High" show a strong similarity between the control and experimental samples as shown in table 9. In the very low and sub admissions categories the control

TABLE 9
ENTRANCE EXAM SCORES BY CATEGORIES

	Very low N (%)	Sub.admt. N (%)	Reg.admt. N (%)	Very high N (%)	Total N (%)
Control	17 (27)	12 (19)	28 (44)	07 (11)	64 (100)
Experimental	19 (30)	11 (18)	26 (41)	07 (11)	63 (100)
Prob. status					
-12 hrs.	02 (40)	01 (20)	01 (20)	01 (20)	05 (100)
Regular	28 (33)	16 (19)	36 (42)	06 (07)	86 (100)
Susp. zn.	06 (17)	06 (17)	17 (47)	07 (19)	36 (100)
Total pop.	36 (28)	23 (18)	54 (43)	14 (11)	127 (100)

sample number of 29 students is close to the experimental sample number of 30 students. In the admission range category the control sample has

28 students compared to 26 experimental sample students. Among the very high entrance examination scores, seven were in the control sample and seven were in the experimental sample.

Although these means and numbers seem visually close enough to conclude that the populations were not significantly different and, therefore, entrance examination scores were not a confounding variable, a one-way analysis of variance test for significance was used to confirm this observation. It has already been shown that the S.A.T. score as a covariance with high school grade point averages was not statistically significant as a predictor of first semester college grades.

The one-way analysis of variance of S.A.T. with grades earned at the end of the 1984 fall semester, that placed the research population on probation, yielded an F of .026 with a significance level of .872, clearly showing no significant relationship between the two factors. When the two populations were isolated, the value of F for the control population's relationship of S.A.T. scores to the fall 1984 (84-1) grades was .306 with a significance level of .582 showing no significant relationship. The ANOVA of S.A.T. and 84-1 grades for the experimental population was likewise not significant with an F of .941 and a significance level of .336.

It can be concluded that, as with the high school grade point average, there was no statistically significant relationship between the S.A.T. entrance examination scores and the grades earned in the first semester for the total research population, for the experimental sample, or for the control sample. This ANOVA information is summarized in table 10.

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TABLE 10
SIGNIFICANCE OF PREDICTIONS OF SUCCESS ANOVA

Factor	ANOVA/F sig.	Covariate/F sig.	Sign.?
HSGPA/G841			
Research pop	1.37 / 0.24		No
Control pop	0.53 / 0.47		No
Exper pop	0.75 / 0.39		No
HSGPA/SAT/G841			
Research pop	0.51 / 0.48	0.66 / 0.42	No
Control pop	0.81 / 0.37	3.44 / 0.07	No
Exper. pop.	0.20 / 0.66	0.90 / 0.77	No
SAT/G841			
Research pop	0.03 / 0.87		No
Control pop	0.31 / 0.58		No
Exper. pop.	0.94 / 0.34		No

Whatever motivational factors were indicated by the academic predictors for the students in both samples, any significant differences between the samples has failed to be identified and no sample has been shown to be more or less influenced in academic performance by these predictors. Therefore, it is difficult to argue that either the academic predictor of high school grades or the entrance examination scores should be considered a confounding variable in the self-selection of the experimental population.

Impact of Treatment on College Grades

The experimental population receiving intrusive treatment was identified as three different sub-populations. At the first level students defined as "counseling only" received intrusive counseling involving a probation questionnaire, a contract with an academic counselor and special follow-up counseling. In addition to this counseling, some students enrolled in a special section of the credit class, University 101, "Orientation," targeted for probationary students. Students who were regular admission students are identified as the "regular class" group. Students, who were in the "Academic Opportunity Program," are identified as the "AOP class" group.

The control sample was identified by two sub-populations: (1) those on probation who were not involved in the treatment and who were regular admission status students, and (2) those on probation who were not involved in the special intrusive treatment but who were already a part of the A.O.P. program. These two sub-samples were matched to the students in the experimental sample by admission status of regular or A.O.P.

To measure the impact of the intrusive treatment, the end grade point averages of the control and experimental populations were compared at the end of the spring semester, 1986. In addition, the difference in grade point averages between the probationary semester, fall 1984 and the spring semester 1986, was evaluated for all students in all sub-populations.

Comparison of Cumulative Grade Point Averages

The cumulative grade point average of all 148 students in the

research population was recorded at the end of their last semester at the university. The point of time of this research was June 1986 so that the cumulative grade point average for all students enrolled during the spring 1985-1986 academic semester (85-2) was their end grade at that point in time. The cumulative grade point average for all students in the research population who were not enrolled during the 85-2 semester is the end grade for their last semester. Non-persisting students had end grades for either the end of the spring 1984-1985 semester (84-2), or the fall 1985-1986 semester (85-1). All students in the research population were enrolled during the semester of treatment (84-2).

The importance of a statistically significant difference in the cumulative grade point average between the experimental and control population is dependent on there being no statistically significant differences in the mean grade point averages between groups at the end of the semester of probation. Table 11 shows the mean grade point averages of all populations at the beginning and the end semester of the study with a test for significant differences by an analysis of variance.

The mean grade point average (g.p.a.) at the end of the probation semester, 84-1 for the research population was 1.2545. The mean g.p.a. for the experimental sample was 1.2766 and the mean g.p.a. for the control sample was 1.2324. The control sample had a slightly greater spread of grades from the mean (standard deviation of .4950) than the total research population (standard deviation of .4807). Conversely, the experimental sample showed a slightly lesser spread of grades from the mean as indicated by a standard deviation of .4683. But the test

TABLE 11
CHANGES FROM BEGINNING TO ENDING G.P.A.

	Mean	Std. dev.	ANOVA F Sig.	Sign.?
Probation semester (G84-1)				
Research pop.	1.2545	.4807		
Control pop.	1.2324	.4950		
Experimental pop.	1.2766	.4683		
Between groups			.3112 .5778	No
Cumulative (G85-2)				
Research pop.	1.6160	.5872		
Control pop.	1.5205	.6045		
Experimental pop.	1.7115	.5572		
Between groups			.3992 .0476	Yes

for significant differences of the two samples produced an F of .3112 that was significant at the .5778 level. Therefore the null hypothesis that there is no significant differences in the mean grade point averages of the control and experimental samples at the beginning of treatment must be accepted.

The cumulative grade point average is the end grade point average. The mean of the end grade point average for the entire research population at the point of time of June 1986 was 1.6160. The control

sample had a mean grade point average of 1.5205 compared to the mean grade point average of the experimental sample of a higher 1.7115. The ANOVA test of significance produced an F of 3.9919 and showed a significant difference between the grade point averages of the two samples beyond the .05 level. The null hypothesis is therefore rejected and the conclusion can be made that the intrusive treatment sample had a significantly higher end grade point average than the control sample.

Change in Grade Point Averages

The grade differences between the end of the fall semester 1984 (approximately January 1985) and the end of the spring semester 1986 (approximately June 1986) were computed by subtracting the cumulative grade point average (CML) in June 1986 from the grade point average in January 1985 (G84-1). All students in all populations had a cumulative grade point average whether or not they were persisting students during the entire time period. All students in the populations were enrolled for the full semester of the intrusive treatment, the spring semester of the 1984-1985 academic year (84-2). The grade point average used as the CML was whatever final grade point average appeared on a student's record in June 1986. The SPSSX⁸ computer formulae used was:

DIFF GPA, BEGIN-END

COMPUTE GDIFF=CML-G841

Comparisons were made in the GDIFF between all students as a part of the total group, as a part of the experimental and control samples, and as a part of the sub-samples of the experimental population.

The mean change in grade point average for all students was .362

or more than one-third of a grade point. The standard deviation was .501 indicating a standard difference of within one-half of a grade point. The maximum change was 1.90 grade points and the minimum was a minus .62, or a loss of less than two-thirds of a grade point. The mean change in grade point average and the standard deviations of all populations, are shown in table 12.

TABLE 12
CHANGES IN GRADE POINT AVERAGES BY POPULATIONS

Population	Mean	Std. dev.	Number
Research	.3615	.5013	148
Control	.2881	.5011	74
Regular admit	.2873	.4659	52
AOP admit	.2900	.5879	22
Experimental	.4349	.4940	74
Counseling only	.3456	.4686	39
Regular class	.5586	.4788	22
AOP class	.4931	.5746	13

The changes in grade point averages indicate that the intrusive treatment has resulted in a higher mean change for the experimental population. The standard deviations of the control and experimental populations were very close to the standard deviation of the entire research population, indicating that the two groups differ only slightly from each other in the average distance from the mean of

members of the groups. The standard deviation of the entire 148 students was .5013 while the standard deviation of the control population of 74 students was .5011, and the standard deviation of the equal size experimental population was .4940. Because of the homogeneity within each group, the mean differences in grades of .2881 for the control population was conspicuously lower than the mean difference in grades of .4349 for the experimental population. The control group mean was below the research population mean of .3615 while the experimental group mean was above the research population mean. In ranking the mean differences shown in table 12 by sub-populations, the mean grade change improves as intrusive treatment increases. The highest ranked means were the experimental sub-populations in orientation classes. The second highest ranked mean was the experimental counseling only sub-population. The next highest ranked mean was the A.O.P. control sub-population. The lowest mean change in grade point average was the regular admit control sub-population.

To calculate the number of students in each population whose grade point averages were near the mean, above the mean, or below the mean, the populations were recoded from raw data to category data by increments of their grade change over time. Since the standard deviation for the entire population was .50 grade point change, the increments were defined by one-half a grade point. Increment recoding of the GDIFF were defined as shown in table 13. These increment recodes defined each student's grade point as a new grade point difference based on rounding the grade point upward or downward to the grade point at the next standard deviation break.

When these differences in grades from the beginning to the ending

TABLE 13
RECODING GDIF BY INCREMENTS OF ONE-HALF G.P. DIFF.

New GDIF	Std. deviation	Inclusive raw GDIF
-1.0	2 S.D. Decrease	-1.700 / -0.500
-0.5	1 S.D. Decrease	-0.501 / -0.001
+0.5	1 S.D. Decrease	0.000 / +0.500
+1.0	2 S.D. Increase	+0.501 / +1.000
+1.5	3 S.D. Increase	+1.001 / +1.500
+2.0	4 S.D. Increase	+1.501 / +1.900

of the project are compared by increment category, it can be observed that more students in the control population decreased their grade point average and more students in the treated experimental population increased their grade point average. Table 14 shows these numbers with percentages rounded to the second decimal place. Twenty-six percent of the control population decreased their GDIF compared to 18 percent of the experimental population. Similarly, 83 percent of the experimental population improved their grade point average compared to 75 percent of the control population.

To determine if these observed improvements in mean change in grades are significant, analysis of variance between the means were calculated and are shown in table 15. Although the F of the mean differences between the raw grade point changes of the control and

TABLE 14
INCREMENT CHANGES OF G.P.A.

Increment	Control pop. N %	Exper. pop. N %
- 2 S.D.	03 04%	00 00%
- 1 S.D.	16 22%	13 18%
+ 1 S.D.	36 49%	29 39%
+ 2 S.D.	14 19%	23 31%
+ 3 S.D.	03 04%	07 10%
+ 4 S.D.	02 03%	02 03%

experimental populations was not at a level of statistical significance to reject the null hypothesis, the significance level was at a .0749 level. However, when the differences between beginning and ending grade point averages were recoded to the nearest one-half grade point based on the standard deviation increments, the between groups analysis of variance is significant at the .0459 level indicating that the grade point average over time of the experimental group was significantly higher than that of the control group.

Impact of Treatment on Retention

Each student in the research population was identified as either a continuous student, a suspended student, a dropout student, or a stop-out student. Continuous students were students who were still enrolled at the university at the end period of the research, the spring semester of the 1985-86 academic year (85-2). Suspended

TABLE 15
MEANS AND ANOVA OF GDIFF COMPARED

	Mean	F	Sig.	Sign.?
Raw data				
Research population	.3615			
Control population	.2881			
Experimental pop.	.4349			
Between group ANOVA		3.22	.0749	No
Recoded data				
Research population	.5068			
Control population	.3986			
Experimental population	.6149			
Between group ANOVA		4.06	.0459	Yes

students were students who were suspended because their grade point average was twelve or more points below a 2.00 average for more than one semester. These students could have been suspended at the end of the semester of treatment (84-2), at the end of the fall semester and one year after the original probationary status (85-1), or at the end of the spring semester one year after treatment ended (85-2). These two groups, continuous and suspended students, accounted for 81% of the total population. The stop-out and dropout students were students who did not enroll for one or more of the semesters intervening between the

end of treatment (84-2) and the end of the research project (85-2). Stop-outs were students who were not in attendance during the semester following the treatment semester, but returned to school during the last semester of the research project, missing only semester 85-1. Only one student qualified for this category and that student had received the intrusive treatment. No students from the control population returned to college after dropping out. Therefore, all control dropout students were absent from college during the last semester (84-2) of the research period.

A breakdown comparison of the percentages of students in each retention category, by both control and experimental population, shows that both the number and percentages of students persisting were greater for the treatment population than for the control population. A chi-square analysis between persisting and non-persisting students showed a significantly higher retention variable for the experimental population than for the control population.

Retention Comparisons by Percentage of Students

To evaluate the impact of the intrusive treatment on whether a student persisted at the university, a comparison was made between the retention categories and the control and experimental samples. In the total population, more of these probationary students were suspended (41.2 percent) than were continuing in college (39.9 percent).

Table 16 shows the percentages of students by population in each of the retention categories. In all categories, the control sample has more of the less persisting students than the experimental sample: 57.4 percent of the suspended students were in the control sample compared

TABLE 16
RETENTION CATEGORIES BY POPULATIONS

	Control pop. % N	Exper. pop. % N	Total cat. % N
Continuous	39.0% 23	61.0% 36	100.0% 59
Drop out	59.3% 16	40.7% 11	100.0% 27
Stop out	0.0% 0	100.0% 1	100.0% 1
Suspended	57.4% 35	42.6% 26	100.0% 61

to 42.6 percent in the experimental sample; 59.3 percent of the dropout students were in the control sample compared to 40.7 percent in the experimental sample; and 39.0 percent of the continuing students were in the control sample compared to 61.0 percent in the experimental sample.

A similar positive effect of the intrusive treatment is suggested by separating the two samples and comparing what percentage of each separate sample is in each retention category. Table 17 shows that the percentage of students from the control sample who were suspended (47.3 percent) is greater than the percentage of students from the experimental sample who were suspended (35.1 percent). Conversely, the percentage of experimental sample students who were continuing students (48.6 percent) is greater than the percentage of continuing students in the control sample (31.1 percent).

TABLE 17
POPULATIONS BY RETENTION CATEGORIES

	% Research	(N)	% Control	(N)	% Exper.	(N)
Continuing	39.9%	(59)	31.1%	(23)	48.6%	(36)
Dropout	18.2%	(27)	21.6%	(16)	14.9%	(11)
Stop out	0.7%	(1)	0.0%	(0)	1.4%	(1)
Suspended	41.2%	(61)	47.3%	(35)	35.1%	(26)
Totals	100.0%	(148)	100.0%	(74)	100.0%	(74)

Persisters and Non-Persisters Compared

To create appropriate cells for a test of significance by Chi-square, the retention categories were compressed into persisting and non-persisting categories. Persisting students were those students who were continuously enrolled in school during the entire period of the research (probation semester 84-1 through end semester 85-2). Non-persisting students were those who were suspended or dropped out of school after the semester of the treatment (84-2). A decision was made to treat the one stop-out student as a non-persister. This was done for three reasons. First, if the research were extended for one or two more semester, some of the dropouts could become stop-outs. For purposes of this research, all such students are considered as non-persisters because they were not continuing students. Second, since both dropout and stop-out students delayed the possibility of suspension by not attending, their academic status was frozen as probationary

until they completed enough hours to either be reclassified as non-probationary or suspended. The ultimate classification of the stop-out student is unknown because that student had not attended enough semesters to define the classification. Third, since the population of the stop-out group is only one student who is in the experimental population, the classification of non-persister could not enhance but only decrease the significant difference. When the stop-out is a non-persister in the treated population and a significant difference in retention is still found, the value of the treatment becomes more positively implied.

Table 18 shows the number and percentages of persisting and non-persisting students in the research population and in the control and experimental samples. The table shows a Chi-square value of 4.06 and significance beyond the .05 level after Yates correction.⁹ Before Yates correction the value of Chi-square was 4.76 with significance at the 0.03 level. Table 18 shows that 60.1 percent of the total research

TABLE 18
PERSISTING AND NON-PERSISTING STUDENTS

	Control		Experimental		Research	
	N	%	N	%	N	%
Persisting	23	31.1%	36	48.6%	59	39.9%
Non-Persisting	51	68.9%	38	51.4%	89	60.1%
Chi-square	4.05866		d.f. 1	Sign. 0.0439		
Before Yates	4.76328		d.f. 1	Sign. 0.0291		

population were non-persisting, 68.9 percent of the control sample were non-persisting, and 51.4 percent of the experimental sample were non-persisting. Conversely, the persisting percentages were 39.9 percent, 31.1 percent and 48.6 percent respectively.

The treated sample had a significantly higher retention record than the comparative control sample, indicating that intrusive counseling increased the retention rate of involved students.

Endnotes

¹Norman H. Nie, et. al., SPSS, Statistical Package for the Social Sciences, 2d ed. (New York: McGraw-Hill Book Company, 1975), p. 7-9.

²Fred N. Kerlinger, Foundations of Behavioral Research, 2d ed. (New York: Holt, Rinehard and Winston, Inc., 1973), pp. 160-65.

³"College Students: Who They Are, What They Think," Chronicle of Higher Education 5 February 1986, p. 27.

⁴Old Dominion University Office of Planning and Budget, "Cohort Information for SCHEV Retention Study," Norfolk, Virginia, 3 March 1986.

⁵Ibid.

⁶Old Dominion University Office of University Planning and Analysis, "Statistical Profile," Norfolk, Virginia, January 1980, p. 8.

⁷Lloyd R. Howell, Mark L. Perkins and Suzanne Young, Characteristics of Student Persisters and Non-Persisters at Old Dominion University, (Norfolk, Virginia: n.p., 1977), p. 35.

⁸Statistics for this research project were a utilization of the Conversational Monitor System (C.M.S.) statistical software, SPSSX Basics. Manuals for this software package are produced by McGraw-Hill Book Company, New York.

⁹Although no cells have an expected frequency of < 5 , Yates correction is applied because the degrees of freedom equaled one. This is the default of the statistics 1 option in SPSSX utilized by the Old Dominion University Computer Center in 1986.

CHAPTER V

CONCLUSIONS AND RECOMMENDATIONS

This research project has compared a group of probationary students who received special intrusive advising and counseling to a control group of probationary students and has shown that the treatment group produced significantly higher grade point averages over three semesters than the control group and were retained as continuous students at a significantly higher rate than the control group.

The Urban Problem

The concept of the urban campus has emphasized that students should relate to their educational experience in the same way that an urban residence relates to any urban environment. Rather than the "in loco parentis," urban campus students must consciously seek help for academic problems by self-referral to advising centers, counseling centers and study help resource centers. This concept leads to an urban manifesto that residents are responsible for their own survival and that delivery of academic assistance services is made available but must be actively sought by those needing non-crisis assistance. While this concept is relatively functionable for the delivery of financial, medical and protective services, it is not functioning well in a campus environment. The first problem of the application of the urban life style to a campus is that the recipients are primarily late adolescents with low orientation to adult responsibilities. Students frequently do

not place the proper emphasis on collegiate study skills, time management or academic motivation to meet the standards of success that are defined as earning a grade point average of C or higher. The second problem is that although there are many developmental tasks for a college student, the only one measured as the criterion of continuation is academic success defined as grade point average. Unlike many other urban environments where mistakes simply reduce the quality of life, students who do not meet the minimum standards are suspended which means they cease to exist in the environment.

The urban campus has a particular concern for retention of admitted college students until graduation. The fiscal urgency of the policy of retention is accentuated by a decrease in the population of late adolescents, a national awareness of lowered academic standards and a reduction of government fiscal support. These and other factors have impacted on the urban university so that a change has been made from the 'revolving door' concept of accepting students and letting natural processes decide on survival through the freshman year, to the concept of a retention effort involving evaluation-remediation, pre-college orientation and academic counseling during the freshman year. However, a commitment of facility, faculty and resources to a freshman experience concept requires some research evidence that attention to orientation will make a difference in the retention of students through and beyond the freshman year.

Intrusive Advising as a Possible Solution

Current research on the importance of the freshman year,¹ developmental advising,² and intrusive orientation,³ has shown that

student retention is linked to the freshman year experience, that academic and social integration is the key to student success in the freshman year, and that academic high risk students can be identified and motivated toward academic success.

The intrusive model utilized for probationary students in the treatment population identified the student's critical need and then strongly recommended specific orientation modes that were responsive to a student's motivation for success. The theoretical concepts used in the model are based on a three supposition intrusive framework. First, professional academic counselors can be trained to identify freshmen students who need orientation assistance. For example, those students identified as "on probation" can be identified as needing specific help. Second, students do respond to direct contact in which the potential problem in their academic life is identified and a resource of help offered. The responding students in the experimental sample were typical probationary students and not distinguishable from all students in gender, race, sending high school, high school grade point average, or admission test scores. In addition, they were not significantly different from the control sample (and by inference, all probationary students) in grade point average at the end of the semester they were placed on probation. And third, academic counselors have a specific responsibility to identify students with academic problems and intrusively offer them assistance. This is implied by this research that has shown that those probationary students who received any intrusive treatment had significantly higher retention rates and grade point averages three semesters later than those who did not receive the treatment.

Summary of Significant Results

There were two levels of intrusive assistance for the 74 probationary students in the experimental population, counseling only and counseling plus enrollment in an orientation class. Thirty-nine students received only the intrusive counseling which involved exploring causes of probation using an intake questionnaire and then setting specific goals for the semester. Several follow-up appointments resulted in across the semester monitoring and programming for the next semester. In addition to these sessions, 35 students enrolled in a three credit orientation class targeted toward probationary students. Twenty-two of these students were classified as full matriculated students. Thirteen of these students were classified as Academic Opportunity Program students and, like their counterparts in the control sample, were already receiving additional monitoring including frequent evaluation of their progress. An additional intrusive component for this experimental A.O.P. population was enrollment in the three credit orientation course.

These 74 experimental students were identified by three classifications of probation. The largest number (N=50) of students were those who were enrolled in 12 or more credit hours and earned a grade point average below a 2.00 (C average), but were not in the suspension zone of 24 quality points low (F average). A few students (N=4) had a probationary grade point average but had not attempted 12 hours of credit and were therefore not subject to evaluation. Some students (N=20) had a g.p.a. in the suspension zone but could not be suspended because they had not attempted 24 hours of credit.

A 74 student control sample was matched exactly by probationary

status and by admission status to the incidences in the experimental sample. The gender differences in the research populations were well within the range of gender differences of the university student population as a whole and the national college student populations. Therefore, gender was not considered a variable in the study. The race differences between the control and research samples represented the race differences in the general matriculated student and in the A.O.P. student populations. Any variable of race that did exist in the research population is controlled by the isolation of students into general and A.O.P. status. The experimental and control samples were very closely matched by region of sending high school between Tidewater, other Virginia and out-of-state students.

A comparison of means, standard deviations and evaluations by one-way analysis of variance showed that the high school grade point averages and the admission test scores of the experimental and the control samples were basically the same. These academic predictors were not, therefore, considered confounding variables in the self-selection of the experimental population.

To measure the impact of the intrusive treatment, the end grade point averages were compared at the end of the spring semester, 1986. Although no significant difference was found in the grade point averages of the experimental and control samples at the end of the semester in which they were placed on probation and preceding the intrusive intervention, a significant difference at the .05 level was found between the cumulative grade point averages at the end of the spring semester in June 1986. The only variable identified between the samples was the intrusive help.

When changes in grade point averages between the probationary semester (84-1) and the end semester of the research (85-2) were evaluated, the ranking of the mean change by grade showed that the regular control group had the least increase, the A.O.P. control had the next to last increase, and the experimental population ranked higher than the research sample or the control sample. Students in the orientation classes were ranked higher than students receiving only counseling. After recoding the grade point average to categories the between population Anova was significant at the .05 level in favor of the experimental population.

When the experimental sample and the control sample were compared as persisting and non-persisting students, the number of continuous students was over 20 percentage points higher for the experimental sample. Conversely, the number of suspended students in the experimental sample was almost 15 percentage points lower than that of the control sample. A Chi-square analysis, even after Yates correction, was significant at a .05 level in favor of the experimental population.

The research shows that students who were intrusively identified and offered intervention help had significantly higher grade point averages and persisted at a significantly higher rate than probationary students in a matched control sample.

Implications for Higher Education

Retention of students is not only an ethical concern but has financial implications for an urban university. This research has shown that students who are placed on probation need not be automatic losses to a university. Intrusive assistance will increase retention

and will make probationary students more effective students when effectiveness is measured as increase in grade point average. In order to understand the retention importance of intrusive service delivery, it must be understood that probationary students are a random cross-section of the freshman class. This research provides demographic evidence that probationary status is not a predictable admissions criteria that can be measured by the standards of academic preparation, nor is it related to the variables of gender or race.

Characteristics of Probationary Students

The 148 students in the research population were all freshmen who earned probationary status at the end of their first semester in college. The research of ACT has demonstrated a strong connection between the first year experience and persistence in college.⁴ In order to target intrusive service delivery to probationary freshmen, it is important to establish the demography of these students. This research compares the demographic factors of a responding experimental population and a matched control sample and therefore can be utilized as a microcosm of probationary freshman at the university.

Gender

The division of gender in the research population was more evenly divided (50 percent male and 50 percent female) than the gender differences in the student body (generally 49 percent male and 51 percent female). The conclusion can be made that probationary status is gender related on a chance basis. When the populations were isolated as experimental and control, by suspension status, or by admission status, the gender division was within five percentage points of exact equal

distribution. This random equality of gender among probationary freshmen implies that there is no gender difference in academic success at an urban university. We cannot conclude, therefore, that academic skills differ by gender, or that there is a difference in risk of academic success in any major based on gender.

Race

Although race was delimited as a variable in the research, the number of minority students in the experimental population was greater than the number of minority students in the control sample. These numbers were small, but it should be noted that the A.O.P. student population included minority students at about 20 percentage points above the general university racial minority percentage. This meant that, to a greater extent than usual, minorities were isolated by admission status in the control and experimental populations and by the A.O.P. orientation class in the experimental population. There was still a lesser percentage of minorities in the research population than in the general university population, and the minority student number was less than the majority student number in all sub-populations except the 13 student A.O.P. experimental population. This demographic factor implies that minority students are not at higher risk of probation than majority students in a freshman population. It also implies that, like all probationary students, they are responsive to intrusive student services.

Sending High School Region

The demography of Tidewater, other Virginia schools, and out-of-state high school backgrounds of the probationary population generally

represented the percentages of these categories in the general student population. There is no evidence, then, that high schools are a variable in student probationary status in the freshman year based on geographic region.

Predictors of College Success

The data has shown the mean high school grade point average of probationary students in the research population, the experimental and control samples, the admission category populations, and the retention status population. The research population mean of 2.60 is within 0.07 grade points of the lowest mean and 0.07 of the second ranked highest mean of any of the sub-populations. The highest ranked mean (2.91) was that of the three students in the under 12 hour probationary status group. No implications can be made from a population of three. An analysis of variance between high school grade point average and probationary status, even with the S.A.T. scores as a covariate, was not significant (the lowest level of significance was 0.07 followed by 0.24). The predictive significance of the S.A.T. score for the research population was at the 0.87 level.

Clearly, probationary status was not predictable by admission tests or high school grade point average. Students at all admissions levels are therefore at risk of becoming non-persisters. The loss of academic energy and continuance has little relationship to predictions of success. However, the relationship of intrusive attention to continuance is suggested by this research. These demographic descriptions of freshmen who earn probation status during their first semester indicates that this academic failure is not predictable and occurs randomly

among all freshmen without regard for gender, race, high school location, or admission criteria. The implication is clear that non-persisters randomly include students of all academic backgrounds and potential. The loss of these students is, therefore, a cross-section loss of the freshman class without regard to academic skills or aptitudes. The converse would also be true: persisting students are randomly a cross-section of the freshman class, not a more academically elite group. Since this research has shown that an intrusive model of counseling and orientation increases retention, universities will need to evaluate carefully their resource commitment to student service delivery units and particularly to those offering intrusive orientation and counseling.

Implications for Orientation

Orientation is implied in any service delivery by professionals to students during their freshman year. Two significant orientation factors are suggested by the grade improvement and the retention improvement of the experimental population over the control population.

First, all students in the research population had an equal opportunity to share in the routine orientation of summer programs, registration processes, and routine academic advising. But those students who did not experience intrusive service delivery did not maintain as high a level of academic success or continuance. This research provides evidence that retention and academic success are enhanced by deliberate intervention services to students identified as needing specific academic help. Orientation must be perceived as more than just information availability at the beginning of the freshman

year. Effective intrusive orientation is deliberate service delivery that teaches retention strategies.

Second, even though all sub-groups in the experimental population changed their grade point average in a positive direction, students in the orientation classes had grade change means higher than the total experimental group and higher than the counseling-only group. This information shows that the orientation classes were the most valuable of all of the intrusive services. Those A.O.P. students who were in the control population were receiving monitoring, but when the A.O.P. monitoring was augmented by the orientation class, the grade improvement is significantly better. The orientation class was a more powerful intrusive service than the A.O.P. program because, although the two classes rank first and second in the mean grade improvement, the regular class of students with greater predictive academic performance was ranked first. The implication is that regular matriculated students (and therefore predicted to be successful) are helped most by orientation classes.

Implications for Academic Counseling

Astin has shown that student continuance is related to academic performance and that academic performance may be related to "fit" to the university and self-motivation of the student.⁵ These premises had not been adequately tested in an urban university environment utilizing an intrusive model of academic counseling.

This research project utilized two distinct counseling services for those students in the experimental groups.

First, a direct contact with a faculty member (or counselor) was

established that dealt candidly with the student's academic failures. "Fit," therefore, should be enhanced by this relationship. In any case, the significant improvement in academic grades indicates that the variable of relationship was a positive influence.

Second, the student was intrusively placed in a position where he/she must do academic planning within the parameters of self-motivation. The significant improvement in academic grades indicates that the variable of self-motivated academic planning was a positive influence.

The research has shown that grades and retention are significantly improved by an intrusive model of orientation and advising that creates rapport with a counselor/faculty member and implements self-motivated academic planning by the student.

Recommendations for Further Study

Five types of studies are recommended based on the findings of this research that intrusive orientation and counseling will improve the grades of probationary students as well as increase their retention rates. First, further exploration into intrusive service delivery is a needed follow-up to this research. Second, the research population should be followed by longitudinal studies throughout their entire academic career. Third, nominal data should be studied in detail with factor analysis of the relationship of the various sub-populations to probation. Fourth, the probationary questionnaire should be further developed as a counseling tool. Fifth, further research into the response motivation of probationary students would increase the understanding of intrusive techniques.

Intrusive Delivery Systems

Based on the demonstrated impact of intrusive orientation and counseling, theoretical models of intrusive delivery systems need to be developed for the various college and university environments. Intrusive academic counseling has already been modeled at the university in which the research was conducted. How can intrusive counseling be implemented in a faculty advising environment? How can intrusive counseling be implemented in a student services advising environment? How can intrusive counseling be implemented in a psychological counseling center environment? These questions need to be explored in the context of a small institution of higher education with a single model of delivery of services as well as in larger institutions where multi-models exist in cooperation or competition.

Longitudinal Studies

A four or five year longitudinal study of the 1984 freshman class could explore the following questions:

1. Will the percent of students graduating from the experimental group exceed the percent of students graduating from the rest of the freshman class?
2. What are the g.p.a. and retention status of the students in the experimental group at various points in their academic career and how do these compare to other students?
3. What was the impact of the intrusive model on student choice of major?
4. How many semesters did it take the experimental group to graduate and how does this compare to other students at the university?

5. If students in the experimental group are suspended or drop out, what are the reasons? How did their experiences in the intrusive model impact on these outcomes?

6. What descriptive data can be collected from the students in the experimental group about their experiences in the intrusive model?

Factor Analysis of Nominal Data

In addition to the demographic data already measured by covariant analysis in both the control and experimental samples, factor analysis of the significant differences of any of the following population would increase our understanding of retention factors at a regional urban university:

1. Comparison of dormitory and commuter students
2. Comparison of Tidewater region and out of region students
3. Comparison of public and private or parochial high school graduates
4. Comparison of first generation college students and students with parent(s) with some college.

Probationary Questionnaire Information

The self-identified reasons for probation listed by the students on the counselor questionnaire at their first meeting with the counselor could help define some of the perceived causes of probationary status. Factor analysis by specific clustering of the answers may identify significant retention factors.

Attitude Evaluation

Freshman "fit" to the university might be investigated by

measuring any attitude differences between the two populations. This would be difficult to measure retroactively but might be a part of a replica study.

Endnotes

¹ACT Workshop, "Successful Student Transition."

²Winston and Sandor, "Developmental Academic Advising."

³Glennen, "Intrusive College Counseling", pp. 2-4.

⁴ACT Workshop, "Successful Student Transition."

⁵Astin, Predicting Academic Performance.

SELECTED BIBLIOGRAPHY

BOOKS

- Astin, Alexander W. Predicting Academic Performance. New York: New York Free Press, 1971.
- _____. Preventing Students From Dropping Out. San Francisco: Jossey-Bass, Inc., 1975.
- Beal, Phillip E. and Noel, Lee. What Works in Student Retention. Iowa City: ACT Program and National Center for Higher Education Management Systems, 1980.
- Chickering, Arthur W. Education and Identity. San Francisco: Jossey-Bass Inc., 1969.
- Cope, Robert G. and Hannah, William. Revolving College Doors: Causes and Consequences of Dropping Out, Stopping Out and Transferring. New York: John Wiley and Sons, 1975.
- Ellis, David B. Becoming a Master Student. 5th ed. Rapid City, S.D.: College Survival, Inc., 1984.
- Feldman, Kenneth A., and Newcomb, Theodore M. The Impact of College on Students. San Francisco: Jossey-Bass, 1970.
- Gardner, John N. and Jewler, Jerome. College Is Only The Beginning. A Student Guide to Higher Education. Belmont, California: Wadsworth Publishing, 1985.

- Heckel, Robert V., Hiers, John E. Manning, Finegold, Barbara, and Zuidema, J. University 101: an Educational Experiment. Columbia, S.C.: Social Problems Research Institute, 1972.
- Keller, George. Academic Strategy: The Management Revolution in American Higher Education. Baltimore: Johns Hopkins University Press, 1983.
- Kerlinger, Fred N. Foundations of Behavioral Research. 2d ed. New York: Holt, Rinehard and Winston, Inc., 1973.
- Nie, Norman H.; Hull, C. Hadlai; Jenkins, Jean G.; Steinbrenner, Karin; and Bent, Dale H. SPSS: Statistical Package for the Social Sciences. 2d ed. New York: McGraw Hill Book Company, 1975.
- Noel, Lee; Levitz, Randi S.; and Saluri, Diana. Increasing Student Retention: Effective Programs and Practices for Reducing the Dropout Rate. San Francisco: Jossey-Bass, Inc., 1985.
- Smith, Laurence N.; Lippitt, Ronald; Noel, Lee; and Sprandel, Dorian. Mobilizing the Campus for Retention: An Innovative Quality of Life Model. Iowa City: ACT National Center for the Advancement of Educational Practices, 1981.
- SPSSX Basics. New York: McGraw-Hill Book Company, 1984.
- Wheeler, David K. Curriculum Process. London: University of London Press, 1967.

PROFESSIONAL JOURNALS

- Appleton, Seldon. "The Impact of an Academic Advising Program: A Case Study." NACADA Journal 3 (March 1983): 57-63.

- Avakian, Anita Nancy; MacKinney, Arthur C.; and Allen, George R. "Race and Sex in Student Retention at an Urban University." College and University 57 (Winter 1982):160-65.
- Berdie, Ralph F. "The University is a Many-Faceted Thing." Personnel and Guidance Journal 45 (January 1967):269-77.
- Glennen, Robert E. "Intrusive College Counseling." College Student Journal 9 (February-March 1975):2-4.
- Glennen, Robert E. and Baxley, Dan M. "Reduction of Attrition Through Intrusive Advising." NASPA Journal 22 (1985):10-14.
- Henderson, Cathy. "Retention Improvement: Selective Case Studies." Policy Brief: American Council on Education (December 1980).
- Hudesman, John; Avramides, Basil; Loveday, Charles; and Wendell, Anne-Sojourner. "The Effect of Academic Contracting and Semi-Structured Counseling Sessions on GPA for Students in Academic Difficulty." Journal of College Student Personnel 25 (1983): 278-79.
- Hudesman, John; Avramides, Basil; Loveday, Charles; Wendell, Anne-Sojourner; and Griemsmann, Russell. "Impact of Counseling Style on the Academic Performance of College Students in Special Programs." Journal of College Student Personnel 27 (1986): 394-99.
- Jackley, John, P. and Henderson, Cathy. "Retention: Tactic for the Eighties." Policy Brief: American Council on Education (December 1979).
- Lenning, Oscar T.; Sauer, Kenneth; and Beal, Phillip E. "Student Retention Strategies." AAHE-EDRIC/Higher Education Research Report, American Association for Higher Education 8 (1980).

- Mannan, Golam and Preusz, Gerald C. "Reducing Student Attrition on Urban Campuses." College Student Journal 14 (Spring 1980):19-23.
- Pascarella, Ernest T. and Terenzini, Patrick T. "Predicting Freshman Persistence and Voluntary Dropout Decisions from a Theoretical Model." Journal of Higher Education 51 (1980):60-75.
- Pawlicki, Lawrence and Connell, Charles W. "Helping Marginal Students Improve Academic Performance Through Self-Management." NACADA Journal 1 (January 1981):44-52.
- Polcynski, James J. and Shirland, Larry E. "Expectancy Theory and Contract Grading Combined As an Effective Motivational Force for College Students." Journal of Educational Research 70 (1977): 238-51.
- Ramist, Leonard. "College Student Attrition and Retention." Findings 6 (1981):1-4.
- Russell, James E. "Problem Areas for the Student on Probation: The Role of the Academic Advisor." NACADA Journal 4 (September 1981):- 56-58.
- Sappinton, Andrew A. "Self Directed Study Skills Programs for Students on Probation." Journal of Counseling Psychology 27 (November 1980): 616-19.
- Spady, William G. "Dropouts from Higher Education: Toward an Empirical Model." Interchange 2 (1971):38-62.
- Sprandel, Lokity. "The First Year: A Look at the Freshman Experience." Journal of College Student Personnel 17 (July 1976):274-79.
- Terenzini, Patrick T. and Pascarella, Ernest T. "Toward the Validation of Tinto's Model of College Student Attrition: A Review of Recent Studies." Research in Higher Education 6 (1977):271-82.

Tinto, Vincent. "Dropout from Higher Education: A Theoretical Synthesis of Recent Research." Review of Educational Research 45 (Winter 1975):89-125.

_____. "Limits of Theory and Practice in Student Attrition." Journal of Higher Education 53 (November-December 1982):687-700.

Treadwell, Vincent "Counselor Education: Group and Individual Counseling: Effect on College Grades." Journal of Non-White Concerns in Personnel and Guidance 4 (1975):73-82.

Walter, Lowell M. "Lifeline to the Underprepared: Successful Academic Advising." Improving College and University Teaching 30 (1982): 159-63.

Winston, Roger R., Jr., and Sandor, Janet A. "Developmental Academic Advising: What Do Students Want?" NACADA Journal 4 (1984):5-13.

PUBLISHED REPORTS, PROCEEDINGS, NEWSPAPERS,
UNPUBLISHED REPORTS

The ACT National Center for the Advancement of Educational Practices Workshop. "Successful Student Transition--A Total Approach from Initial Contact through the Freshman Year." Washington D.C., 26-27 February 1986.

"College Students: Who They Are, What They Think." Chronicle of Higher Education, 5 February 1986, p. 27.

Earl, Walter R. "An Improved Model for Academic Counseling." Old Dominion University, May 1985.

_____. "Impact of Special Section of University 101 upon First Year Students on Probation." Academic Orientation Annual Report, Old Dominion University, August 1984.

- _____. "Intrusive Counseling: Help Before Academic Trouble Begins." Paper presented at the American Personnel and Guidance Association Annual Convention, Washington D.C., 21 March 1983.
- _____. "Structured Freshman Involvement in Campus Activities: A Three Phase Model." Paper presented at College Survival Inc. Here-Now Conference, Atlanta, Ga., 25 April 1986.
- _____. "Study of the Relationship Between Pre-Major Choice and Risk of Suspension for General Studies Students, 1976-1983." Summary Report, Old Dominion University, 1983.
- Earl, Walter R.; Murray, Cynthia; and Jacobson, Stephania. "Statistical Summary of Pilot Project: Intrusive Advising Model." Old Dominion University, 1983.
- Howell, Lloyd; Perkins, Mark L.; and Young, Suzanne. "Characteristics of Student Persisters and Non-Persisters at Old Dominion University." Old Dominion University, 1977.
- "Implementation Manual for the Attrition Reduction Program." College of the Albemarle, Elizabeth City, North Carolina, 1983.
- Marchello, Joseph M. "Inaugural Address." Old Dominion University Courier, 22 November 1985. p. 1.
- Old Dominion University Office of University Planning and Analysis. "Statistical Profile." Norfolk, Virginia, January 1980.
- Old Dominion University Office of Planning and Budget. "Cohort Information for SCHEV Retention Study." Norfolk, Virginia, 3 March 1986.
- Reynard, David. "Project FAR: Freshman Attrition Reduction." Delaware State College, 1983.
- Tata, Chet, Jr. "The Effect of an Intrusive Advisement Program on

First--Term Freshman Attrition." Paper presented at the Annual Forum of the Association for Institutional Research, Minneapolis, 1981.

Tinto, Vincent. "The Effect of College Accessibility Upon the Rate and Selectivity of College Attendance." Ph.D.. dissertation, University of Chicago, 1971.

AUTOBIOGRAPHICAL STATEMENT

Walter R. Earl was born in Newport News, Virginia, on June 21, 1932. He was awarded a Bachelor of Arts degree by Randolph-Macon College in Ashland, Virginia, in 1955 with a major in history and a minor in philosophy. He was awarded a Master of Divinity degree with a concentration in religious education and pastoral counseling by Union Theological Seminary in Virginia in 1960. He was awarded a Master of Science in Education degree with a concentration in guidance and counseling by Old Dominion University in 1970. He was licensed as a professional counselor by the Commonwealth of Virginia in 1978. As a Methodist clergyman, he served Virginia pastorates at Tappahannock, Richmond, Norfolk, and Chesapeake before becoming the Director of the Wesley Foundation at Old Dominion University in 1966. In 1968 he became a counselor at Old Dominion University and has served in the administrative posts of Director of Testing, Director of Academic Advising, Director of Academic Orientation and Testing, and Director of Orientation Curriculum. He is currently a Staff Counselor in the Counseling Center. At Old Dominion University, he has taught undergraduate and graduate courses in tests and measurements, research methods, counseling and guidance, as well as freshman courses in university orientation and career planning. He has been an active participant in professional organizations and a presenter on a state, national and

international level in the areas of advising, counseling, testing and orientation. He has been elected to the honor societies of Omicron Delta Kappa and Phi Kappa Phi. He is listed in Outstanding Educators of America and in Who's Who in the South and Southeast.