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Orientation to College and Freshman Year Persistence/Withdrawal Decisions

The study of student persistence/withdrawal behavior in postsecondary institutions has benefited from the theoretical work of a number of individuals, most notably that of Spady [19, 20], Tinto [24], and Bean [5]. Tinto's model in particular has guided much of the recent research on the issue of student disengagement from postsecondary institutions as well as from postsecondary education generally. Building on and extending the work of Spady [19], Tinto developed a longitudinal, explanatory model of the persistence/withdrawal process which is based to a great extent on the degree of fit between the student and the institutional environment. The model suggests that students enroll at an institution with a range of background traits (e.g., race, secondary school achievement, academic aptitude, family educational context) and initial commitments to the goal of graduation from college and to the particular institution attended. Together these background traits and initial commitments are hypothesized as influencing not only how successfully the student will meet the academic expectations of the institution, but also how well he or she will become integrated into the institution's social and academic systems. Other factors held constant, the stronger the individual's level of social and academic integration, the greater his or her subsequent

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commitment to the institution and to the goal of college graduation [24]. These subsequent commitments in turn are seen, along with levels of integration, as having important effects on institutional persistence/withdrawal decisions.

A growing number of studies testing the Tinto model [e.g., 1, 4, 5, 6, 12, 13, 14, 15, 16, 17, 21, 22, 23] have generally supported the importance of person-environment fit, which is the model's conceptual core. The focus of most of these existing studies has, quite understandably, been on a general test of Tinto's theory. Substantially less attention has been paid to identifying areas within the conceptual framework of the model where institutional interventions might significantly influence student persistence/withdrawal behavior. The purpose of our study was to test the influence of an institutional intervention on student persistence/withdrawal behavior within the framework of Tinto's model. The intervention was a precollege orientation program designed both to increase the student's knowledge of the institution and its traditions, and to facilitate his or her integration into the institution's social and academic systems.

Orientation to College as a Form of Anticipatory Socialization

Many colleges and universities hold a brief (e.g., two to three days) incoming student orientation prior to the commencement of classes each year. The broad goals of such orientation programs are typically to acquaint students with the administrative regulations and expected behaviors of the institution, introduce them to student organizations and activities, acquaint them with available student services, help them design an academic program, and provide opportunities to meet informally with the institution's faculty in nonclassroom settings. Clearly, there are numerous institutional variations on this basic theme, but the general purpose underlying most orientation programs is to facilitate the student's successful integration into a new and unfamiliar academic and social setting.

From this perspective college orientation programs can be viewed as a form of anticipatory socialization. As developed by Merton and associates [9, 10, 11], anticipatory socialization is a process or set of experiences through which individuals come to anticipate correctly the values, norms, and behaviors they will encounter in a new social setting. To the extent that such anticipatory socialization is effective, the individual should become more successfully integrated into the new setting and function effectively in it. Thus, precollege orientation expe-

riences may be one mechanism whereby colleges positively influence the anticipatory socialization of incoming students. It would follow that students exposed to such orientation experiences would be somewhat more successful in becoming initially integrated into an institution's academic and social systems during the freshman year than their counterparts not exposed to orientation experiences. Given expectations from Tinto's [24] model, higher levels of integration should lead to increased commitment to and lower likelihood of voluntary withdrawal from the institution.

Method

Design and Sample

The general design of the study was longitudinal, with three data collections: prior to, during, and subsequent to the 1976–77 academic years. In the summer of 1976, a simple random sample of 1,906 persons was drawn from the total incoming freshman class of a medium-sized, independent residential university (total undergraduate enrollment, approximately ten thousand students). Sample members were sent a detailed questionnaire instrument designed to gather selected background information as well as information on initial commitments to the institution and to the goal of graduation from college. Usable responses were returned by 1,457 students (76.5 percent) who subsequently enrolled. During the middle of the spring semester of their freshman year (1977), a follow-up instrument was mailed to these 1,457 students. This questionnaire sought extensive information on their freshman year experience. After a mail and telephone follow-up, usable responses were received from 773 freshmen (53.1 percent). Chi-square goodness-of-fit tests indicated that the 773 freshmen were representative of the freshman population from which they were drawn with respect to sex, racial/ethnic origin, college enrollment, academic aptitude (Scholastic Aptitude Test [SAT] scores), and freshman-year cumulative grade point average.

A review of each student's records in September 1977 indicated that 90 of the 773 freshmen had withdrawn voluntarily from the institution at the end of their freshman year, and 673 had reenrolled for their sophomore year. The remaining 10 students had been forced to withdraw for academic reasons. Because these students were too few to form a separate group, and because evidence suggests that voluntary withdrawals are substantially different from forced withdrawals [e.g., 7, 24], they were dropped from the analysis, leaving a usable sample

of 763 students. Thus, the study focused on the effects of orientation experiences on persistence versus voluntary withdrawal, the latter being operationally defined as the student's withdrawing from an institution prior to the sophomore year without being forced. (The 11.64 percent voluntary withdrawal rate is consistent with previous known voluntary withdrawal rates for this university.)

Variables

Tinto's conceptual model portrays a number of different constructs of variable sets in a causal sequence: (a) background characteristics and initial commitments to the institution and to the goal of graduation; (b) academic and social integration; (c) subsequent goal and institutional commitments; and (d) voluntary persistence/withdrawal decisions. Student orientation experiences were placed in Tinto's model between student background characteristics and initial commitments, which were judged to be antecedent influences, and social and academic integration. Thus, it was expected that exposure to orientation would be influenced by student background characteristics and initial commitments. In turn it was expected that, with student background and initial commitments controlled statistically, exposure to orientation would influence causally subsequent variables in the model (e.g., social integration, subsequent commitment to the institution).

Each background characteristic was operationalized as follows:

Family background. This characteristic was operationalized as a single variable, termed *socioeconomic status,* which was the sum of parents' combined level of education (seven categories, from some grammar school to graduate degree) and parents' combined annual income (in thousands of dollars). Procedures adopted to adjust for the different metrics used to form this and other composite variables are discussed in a later section of this paper.

Individual attributes. These were operationalized as: *sex* (1 = male, 2 = female); *ethnicity* (1 = white, 0 = nonwhite); *academic aptitude* (combined SAT scores); initial enrollment as a *liberal arts major* (decided on prior to registration, 1 = liberal arts major, 0 = preprofessional major).

Precollege schooling. Precollege schooling was measured by two variables: secondary school academic integration and secondary school social integration. Secondary school academic integration was operationalized as percentile rank in the secondary school graduating class, while the operational definition of secondary school social integration

was extent of extracurricular involvement (i.e., number of secondary school extracurricular activities averaging two hours or more per week). We anticipated that these two variables would be significant determinants of the student's level of collegiate academic and social integration, respectively.

The initial commitment items, commitment to the goal of graduation (*goal commitment I*) and commitment to the institution (*institutional commitment I*) were also collected on the preenrollment instrument and were operationally defined as follows:

Goal commitment I. This scale was the sum of two items: (a) highest expected academic degree (bachelors to Ph.D., M.D., or J.D.), and (b) importance of graduating from college (1 = not important to 4 = extremely important).

Institutional commitment I. This was the sum of two items: (a) rank of the subject institution as a college choice (1 = fourth or lower choice to 4 = first choice), and (b) confidence that choosing to attend the subject university was the right choice (1 = not at all confident to 4 = extremely confident). The two initial commitment scales were correlated 0.04 in the overall sample.

With the exception of rank in class and combined SAT scores, which were taken from official university admission records, information on all background characteristics and the two initial commitment variables were collected on the preenrollment instrument.

Student orientation experiences. This was a dummy coded variable indicating whether or not a student had attended one of thirteen two-day college orientation sessions prior to enrolling in August of 1976. The sessions took place on campus during July and included an extensive program of activities for both incoming freshmen and their parents. The overall stated goal of the program was to facilitate the "successful transition of new freshmen from secondary school to a new and quite different setting." This general goal was divided into three subgoals or objectives. The first of these was the development of academic and educational awareness. Programmatically, this included small group sessions in which the student was introduced by faculty to academic policies, procedures, and requirements within individual programs and college affiliations. It also included academic advisement and the development of an academic schedule for the initial semester, with the assistance of faculty and specially trained upperclass advisors.

The second subgoal of the program was the development of an awareness of available institutional services and resources. Program-

matically, this included sessions that presented information on such topics as career planning and placement; counseling services; rules, regulations, and institutional traditions; student organizations, programs and activities; residential life; tutorial programs; health services; financial aid; and others.

The third subgoal was the development of an identification with the institution. It was felt that this would be a cumulative effect of the various program sessions because freshmen would be able to interact with faculty, administrators, and other students and become comfortable with the physical, academic, and social environment of the campus.

Attendance at the orientation sessions was encouraged of all freshmen, but was voluntary. Study participants were asked to indicate on the follow-up instrument whether or not they had attended orientation. The variable was coded: 1 = attended orientation, 0 = did not attend orientation. Based on the stated goals of the program, it was hypothesized that, with differences in precollege traits and initial commitments controlled statistically, exposure to orientation might have a small positive influence on academic integration, but would have its strongest positive effects on social integration and institutional commitment. In turn, it was anticipated that these latter two variables would positively influence freshman year persistence. It was further hypothesized that, controlling for all other variables in the model, attending orientation would also have a significant, positive influence on persistence.

Tinto's [24] conceptual schema is essentially a variation of the theory of person-environment fit. Thus, his concepts of academic and social integration are of primary explanatory importance in the model. As Tinto himself suggests, "given individual characteristics, prior experiences, and commitments, . . . it is the individual's integration into the academic and social systems of the college that most directly relates to his continuance in that college" [24, p. 96]. According to the model, academic integration is determined primarily by the student's academic performance and his or her level of intellectual development, whereas social integration is primarily a function of the extent and quality of peer-group interactions and the extent and quality of student interactions with faculty.

Academic integration. Academic integration was operationally defined as a combination of the following two variables (data for which were collected on the follow-up instrument or official university records):

1. Freshman year cumulative grade point average (taken from official university records in September, 1977).

2. A 7-Likert item, factorially derived scale measuring a student's perceived level of intellectual development during the freshman year. The two highest loading items were: "I am satisfied with the extent of my intellectual development since enrolling in this university," and "My academic experience has had a positive influence on my intellectual growth and interest in ideas" (scale alpha reliability = 0.72).

Social integration. Social integration was operationally defined as a combination of the following four variables (data for which were collected on the follow-up instrument):

1. Extent of involvement in student extracurricular activities during the freshman year averaging two hours or more per week.
2. Frequency of freshman year nonclass contacts with faculty of 10 minutes duration or more for any of six purposes (e.g., socializing informally, discussing ideas or intellectual issues, getting advice on careers).
3. A factorially derived scale composed of 7 Likert-type items (i.e., "strongly agree" to "strongly disagree") measuring the extent and quality of a student's relationships with student peers. The two highest loading items were: "Since coming to this university, I have developed close personal relationships with other students," and "The student friendships I have developed at this university have been personally satisfying" (scale alpha reliability = 0.84).
4. A factorially derived scale composed of 5 Likert-type items measuring the quality and impact of students' nonclassroom contacts with faculty. The two highest loading items were: "My nonclassroom interactions with faculty have had a positive influence on my personal growth, values, and attitudes," and "My nonclassroom interactions with faculty have had a positive influence on my career goals and aspirations" (scale alpha reliability = 0.83).[1]

The subsequent commitment items were collected on the follow-up instrument and were operationalized as follows:

[1]Previous estimations of the Tinto model have operationally defined academic and social integration somewhat differently than the present investigation [e.g., 14, 17]. While a number of different operational definitions of Tinto's constructs are theoretically justifiable, the present definitions are based, a far as possible, on Tinto's [24] explicit delineation of academic and social integration. Similarly, based on factor analytic results some previous estimations of the model [e.g., 16] have combined the concepts of subsequent institutional and goal commitment. In the present study, however, we were guided more by theoretical concerns and separated these two constructs in accordance with the model. The fact that they correlated only 0.24 in the total sample suggests that they were assessing different dimensions of commitment.

1. *Goal commitment II.* This was a single item: "It is important for me to graduate from college" (scored: 5 = strongly agree to 1 = strongly disagree).
2. *Institutional commitment II.* This was the sum of two items: (a) "I am confident that I made the right choice in choosing to attend this university" (scored: 5 = strongly agree to 1 = strongly disagree), and (b) "It is not important for me to graduate from this university" (1 = strongly agree to 5 = strongly disagree).

The dependent variable, freshman year voluntary persistence/withdrawal behavior (referred to hereafter as persistence) was dummy coded 1 = persisters and 0 = voluntary withdrawals. Data on this variable were obtained from official university records in September 1977.

In constructing the socioeconomic status, social integration, and academic integration scales, where the individual items were on a different metric, a two step procedure was followed. First, each individual item was standardized to provide a common metric. (A constant was then added to eliminate negative numbers.) The scale was then formed by summing across standardized items [3].

Statistical Analysis

Coefficients in the general causal model described above were estimated with multiple regression. Since the major focus of the study was on the effect of orientation experiences on persistence, all causally prior variables (i.e., background characteristics and initial commitments) were treated as exogenous (determined from outside the model). Exposure to orientation, academic and social integration, subsequent institutional and goal commitments, and freshman year persistence were treated as endogenous variables (i.e., determined by other variables within the causal model). The analysis required the solution of six structural equations, in which each endogenous variable was regressed on the exogenous variables and all other causally antecedent endogenous variables in the model. In each regression analysis the predictor variables were entered simultaneously [8]. The results of these structural equations yielded two types of coefficients. The first were standardized regression (beta) weights, which can be interpreted as direct causal effects, controlling for all other variables in the equation. The size and sign of the standardized regression weight indicates the amount of change in the dependent measure for every unit standard deviation increase in the predictor variable, holding constant the influence of all other predictors [8]. The second set of coefficients were

metric or unstandardized regression (b) weights. The size and sign of the b weight indicate the amount of change in the dependent measure for every one-unit increase in the predictor variable, holding constant the influence of all other predictors [8].

Although direct effects are a traditional means for assessing the influence of specific variables in regression analysis, it is misleading to regard them as the most important indicator of impact. A more revealing index is the "total effect," which is the sum of a variable's direct effect plus its indirect effect through intervening variables [8]. (Indirect causal effects are estimated as the sum of the products of direct causal effects through intervening variables [26].) Thus, by estimating the total effect of a variable, one is able to determine how much of the effect is due to direct influence and how much is due to indirect influences.

Neither direct nor indirect effects are inherently more important in assessing the impact of a variable on some outcome. By estimating both, however, one obtains a more precise understanding of the *process* by which a particular variable impacts on a particular outcome [8]. In the present study we anticipated that a major part of the total influence of exposure to orientation on freshman persistence would be indirect, transmitted through its influence on student social integration and subsequent commitment to the institution during the freshman year.

Results

Table 1 displays the means, standard deviations, and intercorrelations among variables in the model. All regression analyses were based on these descriptive statistics and the correlation matrix. Table 2 displays the standardized and unstandardized regression weights, as well as their standard errors, for each structural equation. As Table 2 (equation 10) points out, there was some statistically significant self-selection of students to the orientation program. Those attending orientation tended to be non-minority (i.e., white), to have been more socially integrated in secondary school, to come from higher socioeconomic levels, and to have a higher level of initial commitment to the institution. They also tended to have slightly higher levels of academic aptitude than non-attenders; this difference, however, was not statistically significant.

Equation 15 in Table 2 shows the direct effects of all predictor variables in the model on freshman year persistence. The fourteen variable model explained 19.6 percent of the variance in freshman year persis-

TABLE 1

Means, Standard Deviations and Intercorrelations Among Variables

Variables	M	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. Ethnicity (1 = white, 0 = non-white)	0.91	0.29		−05	13	24	04	−04	−07	−11	−04	09	02	17	−05	−05	−01
2. Secondary school social integration	1.12	0.58			−01	03	05	05	00	13	−06	13	12	03	03	00	01
3. Socioeconomic status	20.00	1.45				09	−05	−04	−03	−02	−10	09	04	04	−03	−05	03
4. Academic aptitude	1044.97	160.67					34	−03	−19	05	−03	09	−01	28	−06	−10	03
5. Secondary school academic integration	75.31	17.96						−01	06	04	01	03	01	27	05	00	03
6. Liberal arts major	0.39	0.49							04	23	−09	−03	03	−11	04	−11	−02
7. Sex (2 = female, 1 = male)	1.47	0.50								−04	01	−01	06	04	08	08	07
8. Goal commitment I	5.57	1.04									04	04	15	00	23	07	10
9. Institutional commitment I	3.32	1.01										11	01	−04	−02	19	−01
10. Attended orientation	0.70	0.46											21	07	00	18	12
11. Social integration	40.00	2.39												24	11	25	35
12. Academic integration	20.00	1.63													11	17	15
13. Goal commitment II	4.49	0.87														24	17
14. Institutional commitment II	6.78	1.98															31
15. Freshman year persistence	0.88	0.32															

NOTE: Decimals omitted from correlations.

TABLE 2: Standardized and Unstandardized Regression Coefficients For All Structural Equations

Variables	10	11	12	13	14	15
1. Ethnicity (1 = white, 0 = non-white)	0.077* 0.120(0.058)	0.038 0.310(0.301)	0.110** 0.614(0.198)	−0.013 −0.037(0.110)	−0.051 −0.347(0.239)	−0.018 −0.020(0.038)
2. Secondary school social integration	0.135** 0.108(0.029)	0.079* 0.327(0.149)	0.017 0.047(0.098)	−0.006 −0.011(0.054)	−0.037 −0.128(0.118)	−0.043 −0.024(0.019)
3. Socioeconomic status	0.090* 0.029(0.012)	0.021 0.034(0.059)	0.005 0.006(0.039)	−0.016 −0.010(0.022)	−0.042 −0.057(0.047)	0.016 0.004(0.008)
4. Academic aptitude	0.060 0.00017(0.00011)	−0.041 −0.0006(0.0006)	0.193** 0.002(0.0004)	−0.094* −0.0005(0.00022)	−0.126** −0.0015(.0005)	0.069 0.0001(0.00008)
5. Secondary school academic integration	0.003 0.00007(0.001)	0.005 0.0007(0.005)	0.190** 0.017(0.003)	0.042 0.002(0.002)	−0.015 −0.002(0.004)	0.000 0.000(0.001)
6. Liberal arts major	−0.019 −0.018(0.035)	−0.008 −0.039(0.178)	−0.110** −0.368(0.117)	−0.008 −0.014(0.065)	−0.106** −0.429(0.141)	−0.018 −0.012(0.023)
7. Sex (2 = female, 1 = male)	0.009 0.008(0.033)	0.065 0.307(0.172)	0.080* 0.260(0.113)	0.063 0.110(0.063)	0.043 0.171(0.136)	0.040 0.026(0.022)
8. Goal commitment I	0.030 0.013(0.016)	0.142** 0.326(0.084)	0.025 0.040(0.055)	0.227** 0.190(0.031)	0.061 0.116(0.067)	0.038 0.012(0.011)
9. Institutional commitment I	0.125** 0.057(0.016)	−0.007 −0.017(0.085)	−0.045 −0.074(0.056)	−0.032 −0.028(0.031)	0.156** 0.307(0.607)	−0.066 −0.021(0.011)
10. Attended orientation		0.192** 0.996(0.187)	0.033 0.116(0.123)	−0.010 −0.019(0.069)	0.139** 0.597(0.150)	0.029 0.020(0.024)
11. Social integration				0.048 0.018(0.014)	0.175** 0.145(0.030)	0.272** 0.037(0.005)
12. Academic integration				0.107** 0.057(0.021)	0.166** 0.202(0.045)	0.008 0.002(0.007)
13. Goal commitment II						0.079* 0.029(0.013)
14. Institutional commitment II						0.232** 0.038(0.006)
15. Freshman year persistence						
R^2	0.053	0.076	0.143	0.082	0.165	0.196

NOTE: Top number is the standardized coefficient, bottom number is the metric coefficient, number in parentheses is the standard error. *$p<0.05$, **$p<0.01$.

tence/voluntary withdrawal behavior. As equation 15 further indicates however, only three variables (social integration, goal commitment II, and institutional commitment II) had significant direct effects on persistence, controlling for all other variables in the model. None of the background or initial commitment variables significantly influenced persistence, nor did attendance at student orientation. (The latter variable did have a significant zero-order association [0.12] with persistence, which was reduced to a direct effect of 0.03 when other variables in the model were taken into account.)[2]

As further shown in Table 2, however, attending orientation did have significant direct effects on both social integration (equation 11) and institutional commitment II (equation 14). (Indeed the direct effect of orientation on social integration, 0.192, was the largest of any variable.) Controlling for differences in precollege characteristics and initial commitments, students attending orientation had significantly higher levels of social integration and subsequent commitment to the institution than those students not attending orientation. These latter two variables, in turn, had the largest significant direct effects on freshman persistence of all variables in the model. This suggested a non-trivial indirect influence of orientation on freshman year persistence.

Table 3 presents the indirect effects on freshman persistence for all variables in the model. (Given Tinto's model, goal commitment II and institutional commitment II have only direct effects.) The statistical significance of each indirect effect was computed using an algorithm developed by Wolfle and Ethington [27].

As Table 3 shows, eight variables in the model had significant, indirect effects on persistence. The influence of secondary school social integration on persistence was mediated primarily through social integration in college. As indicated in Table 2, secondary school social integration had a significant positive direct effect on level of collegiate social integration (beta = 0.079); and collegiate social integration, in turn, had a significant positive effect on persistence (beta = 0.272). Thus, the indirect effect of secondary school social integration on persistence, through collegiate social integration, was 0.021 (0.079×0.272). Similarly, the negative indirect effect on persistence of majoring in liberal arts was mediated primarly through institutional commitment

[2]Because of the dichotomous nature of the dependent variable (persistence versus voluntary withdrawal) the direct effects results were checked with a log-linear analysis, using the LOGIST routine from the Statistical Analysis System. This routine fits the logistic regression model to a binary dependent measure. The results of this analysis yielded coefficients which differed little in relative magnitude, and not at all in statistical significance, from the linear regression results.

TABLE 3
Indirect Effects on Freshman Persistence

Variables	Standardized	Unstandardized	t-ratio
Ethnicity	0.015	0.016	0.90
Secondary school social integration	0.033	0.019	2.10*
Socioeconomic status	0.007	0.002	0.45
Academic aptitude	−0.032	−0.0001	1.68
Secondary school academic integration	0.012	0.0002	0.71
Liberal arts major	−0.036	−0.024	2.24*
Sex	0.041	0.026	2.64**
Goal commitment I	0.082	0.025	4.60**
Institutional commitment I	0.044	0.014	2.67*
Attended orientation	0.094	0.066	5.67**
Social integration	0.044	0.006	4.09**
Academic Integration	0.047	0.009	4.19**

*$p < 0.05$
**$p < 0.01$

II. Being female had a positive indirect effect on persistence, which appeared to be transmitted primarily through social integration, goal commitment II, and institutional commitment II.

While neither of the initial commitment variables had significant direct effects on persistence, both nevertheless had significant indirect effects. Precollege goal commitment (goal commitment I) had a positive, indirect effect on persistence, mediated primarly through social integration and goal commitment II, while the indirect influence of precollege institutional commitment was transmitted largely through subsequent institutional commitment (i.e., institutional commitment II). The indirect effects of both academic and social integration were mediated primarly through their positive influence on institutional commitment II.

Of all variables in the model, exposure to orientation had the largest positive, indirect effect on freshman year persistence (0.094). As hypothesized, this influence was mediated primarily through social integration (indirect effect = 0.052) and institutional commitment II (indirect effect = 0.032). The total indirect effect of orientation on persistence through these two variables was 0.092.

Table 4 presents the direct, indirect, and total effects of each variable on freshman persistence, as well as the rank ordering of variables by the magnitude of their respective total effects. As shown in Table 4, exposure to orientation had the third largest total effect (0.123) on freshman persistence of all variables in the model. As further shown in Table 4, the major portion of this total effect on persistence (0.094 or approximately 76 percent of the total effect) was indirect. Thus, orientation

TABLE 4
Breakdown of the Total Effect of each Variable on Freshmen Persistence by Direct and Indirect Effects

Variables	Direct Effect	Indirect Effect	Total Effect	Rank of Total Effect
Ethnicity	−0.018	0.015	−0.003	14
Secondary school social integration	−0.043	0.033	−0.010	13
Socioeconomic status	0.016	0.007	0.023	10
Academic aptitude	0.069	−0.032	0.037	9
Secondary school academic integration	0.000	0.012	0.012	12
Liberal arts major	−0.018	−0.036	−0.054	8
Sex	0.040	0.041	0.081	5
Goal commitment I	0.038	0.082	0.120	4
Institutional commitment I	−0.066	0.044	−0.022	11
Attended orientation	0.029	0.094	0.123	3
Social integration	0.272	0.044	0.316	1
Academic integration	0.008	0.047	0.055	7
Goal commitment II	0.079	0.000	0.079	6
Institutional commitment II	0.232	0.000	0.232	2

influenced freshman year persistence largely by directly impacting on important intervening variables in the causal model (i.e., collegiate social integration and subsequent commitment to the institution).

Additional Analysis

Because exposure to orientation had the largest direct effect of any variable on collegiate social integration, an additional analysis was conducted to determine those specific dimensions of the social integration measure on which the impact of orientation may have been most pronounced. Partial correlations were computed between exposure to orientation and each of the four constituent variables forming the social integration scale. The partial correlations statistically controlled for differences in all student precollege traits and initial commitments. The results of that analysis were as follows:

1. Extent of involvement in student extracurricular activities ($r = 0.172$, $p < 0.01$)
2. Extent of informal, non-classroom interaction with faculty ($r = 0.141$, $p < 0.01$)
3. Extent and quality of peer interactions ($r = 0.079$, $p < 0.05$)
4. Quality and impact of interaction with faculty ($r = 0.041$, $p > 0.05$)

It is clear from these partial correlations that orientation had its strongest positive association with extent of involvement in student extracurricular activities and informal interaction with faculty. With

differences in student background characteristics and initial commitments held constant, students participating in orientation had significantly higher levels of extracurricular involvement and informal contact with faculty than those not attending orientation. There was also a modest, significant partial correlation with extent of peer interactions. This, however, may have been an ancillary benefit of increased extracurricular involvement, and not so much a direct influence of orientation.

Summary and Discussion

This study sought to test, within a theoretical causal model, the influence of an intensive two-day student orientation program on voluntary freshman year persistence/withdrawal decisions. Precollege student orientation was conceptualized as an experience that might function to positively influence anticipatory socialization. Thus, the primary hypothesis of the study was that students attending the two-day orientation would develop higher levels of initial social integration during college and subsequent commitment to the institution than students not attending orientation. Since these latter two variables were conceptualized by the model as directly influencing institutional persistence/withdrawal decisions, it was expected that they would transmit much of the total influence of orientation on persistence.

The results of the study tend to support the notion of an institutionally sponsored student orientation experience as a potential facilitator of successful anticipatory socialization by incoming freshmen. Statistically controlling for differences in student background characteristics and initial commitments (including level of student secondary school social integration and initial commitment to the institution), exposure to orientation had the third largest total effect (0.123) on freshman year persistence of all fourteen variables operationalizing the constructs of Tinto's [24] model.

The important part of this total effect, however, was indirect (0.094, $p < 0.01$). Orientation had only a small direct influence on persistence (0.029), but as hypothesized, had relatively substantial and significant positive effects on both social integration during college (0.192) and subsequent commitment to the institution attended (0.139). These latter two variables, in turn, had the largest direct effects on freshman year persistence of all variables in the model. Thus, the major positive influence of exposure to orientation on freshman persistence was transmitted primarily through its influence on freshman year social integra-

tion and, to a somewhat lesser extent, through its influence on subsequent commitment to the institution.

In this sense the results tend to confirm theoretical expectations. It appears that the orientation experience impacted on freshman persistence largely by facilitating a student's initial ability to cope with a new set of social challenges in an unfamiliar environment. The process of applying this knowledge and developing initially successful integration into the social system of the institution was the factor which most directly influenced commitment to the institution and persistence.

An additional analysis suggested that the influence of orientation was not the same for all dimensions of social integration. By far the largest partial associations were with extent of extracurricular involvement and informal contact with faculty during the freshman year. The partial associations with measures of the quality and impact of interaction with peers and faculty were substantially smaller in magnitude. Such evidence suggests that the influence of orientation on students' initial integration into the campus social system is manifest more in extent of involvement than in quality or impact of involvement.[3]

One obvious policy implication of the findings is that the student orientation experience may provide institutions with a potentially important vehicle through which effective programming can have a positive impact on student persistence. The fact that the major part of this impact was transmitted through the influence of orientation on causally subsequent variables, which had major direct effects on persistence, should not detract from its potential significance. Indirect effects are no less important as an index of impact than are direct effects [2, 18]. Moreover, portraying the nature of the indirect effect of orienta-

[3]Although the argument is somewhat speculative, this evidence also suggests the two specific aspects of orientation which were most salient in influencing initial social involvement. Based on relative levels of involvement, it appears that orientation may have been more effective than other campus sources of information available to all students (e.g., the campus newspaper) in informing students about, and interesting them in, the social and extracurricular opportunities available on campus. Second, the findings underscore the importance of involving faculty in orientation programming. Those students attending orientation tend to have their first interactions with the institution's professoriate in non-classroom settings (e.g., advising, small group discussions, informal presentations about various academic programs and opportunities) where status differences may not be so clear-cut as in the classroom. Moreover, faculty who participate in the student orientation program are likely to be those most interested in students to begin with. As suggested by Wilson, Gaff, Dienst, Wood and Bavry [25], faculty behaviors give students rather clear cues as to their (faculty) social-psychological approachability. Because of these factors, students attending orientation may perceive the institution's faculty as being somewhat more approachable than students who do not attend orientation.

tion on persistence (i.e., being transmitted through important intervening variables in a causal system) provides a more complete explanation of the actual process by which such influence occurs than is provided by direct effects. Understanding the process by which an intervention exerts its influence can be an important asset in program development and revision.

In this sense the study may also have implications for the ways in which the impact of complex programmatic interventions on student retention are evaluated. A distinct advantage of estimating the influence of orientation within a causal model was that it permitted an assessment of its total influence on persistence, disaggregated into direct and indirect effects. Since most of this influence was indirect, a more conventional approach (which considered only direct effects) would have seriously underestimated the true impact of orientation on persistence. Investigating the effects of institutional policy interventions within a causal structure may be an important direction for future research on the impact of college on students. Such an approach not only affords a better understanding of the process by which an intervention has impact, but it also provides a more accurate estimate of the intervention's total impact on the outcome.

Although the results of the study suggest that (compared with other constructs in Tinto's model) orientation had a relatively substantial total effect on freshman persistence, it is interesting to consider why so little of the total effect was direct. One obvious reason is that it is perhaps unduly optimistic to expect that a preenrollment experience of two or three days (however well conceived and implemented) will have a meaningful direct influence on a complex decision which may come to fruition several months later. The relationship between a precollege orientation experience and freshman year persistence/withdrawal decisions may simply be too remote for much direct impact. Moreover, the causal linkages are perhaps determined more by administrative belief than by a sound theoretical structure. It seems much more likely, and indeed is suggested both by theory and by the findings of this study, that any substantial direct impact of a precollege orientation will be on more chronologically proximal factors in the student's experience of college (e.g., extent of initial involvement in the campus social system). In short, given orientation as a one-time, preenrollment experience it should be expected that its major impact on student persistence will be indirect.

Increasing the direct impact of orientation on student persistence would in all likelihood require fundamental changes in the structure

and duration of the orientation experience. Rather than a one-time experience of limited duration preceding enrollment, orientation to college might be more effectively conceived as an institution's ongoing attempt to enhance students' successful integration into the campus academic and social systems throughout the freshman year. This would mean extending orientation activities beyond the typical two- or three-day program so that they would continue at regular times during the academic year. Such an ongoing program might function to both extend and reinforce the impact of initial orientation experiences.

Of course, an "extended orientation" would entail a greater expenditure of human resources over a longer period of time. It would also require increasingly sophisticated program development and coordination, particularly if major agents of socialization on campus (e.g., upper-classmen and faculty) were to play an important role in ongoing orientation activities.

Obviously, the cost-benefits of such a program cannot be ignored. Nevertheless, the findings of this study suggest the possibility that even a short-term orientation experience may positively influence student persistence. It seems reasonable to hypothesize that extending the duration of a carefully conceived orientation experience would both reinforce and magnify its influence. Clearly the structuring of orientation experiences as a means for enhancing college impact is an effort worthy of further development and evaluation.

Limitations

This study is limited by the single institution sample and by the rather short period of time (one academic year) over which the sample was followed. The fact that orientation may have had a significant, positive indirect effect on persistence at the institution studied, does not necessarily mean that the results are generalizable to other institutional settings. Clearly, replication in another institutional setting would be desirable.

The second limitation speaks to the length of time over which the orientation experience might have a discernible influence on such factors as social integration and institutional commitment. The results of this study suggest that there may be statistically reliable effects on these two variables after about seven months of college. This is a relatively short period of time, however, and it may be that the influence of orientation is essentially realized only during the student's initial college experience (i.e., during the early part of the freshman year).

Whether the orientation experience has longer term impacts, however, awaits further study.

Finally, and perhaps most importantly, the study also has the obvious internal validity problems inherent in correlational data. Students in the sample self-selected themselves into the orientation and non-orientation groups. This necessitated statistical controls within a theoretical causal model. While such analytical models are useful in portraying what the patterns of causal influence might look like, they do not provide the same order of control as that achieved by a randomized experiment. Clearly, there may be some interaction of choosing to attend orientation and the collegiate experience which was not controlled by the analyses. At the same time, however, orientation did have significant unique associations with social integration and subsequent institutional commitment that were not attributable to differences in precollege measures of these two variables nor to precollege differences in other constructs in the model. Nevertheless, the estimation of the effects of orientation experiences on student social integration, institutional commitment, and persistence under more controlled experimental conditions is a fruitful area for future inquiry.

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