



Caveat Emptor: Is There a Relationship between Part-Time Faculty Utilization and Student Learning Outcomes and Retention?

Timothy Schibik
Director of the Center for Teaching and Learning
Excellence and Professor of Economics
University of Southern Indiana

Charles Harrington
Assistant Vice President for Academic Affairs
and Associate Professor of Management
University of Southern Indiana

Abstract

One important factor neglected in the literature involves an investigation into whether the increased utilization of part-time faculty impacts student retention. Are part-time faculty, who are employed primarily to teach introductory courses, having an adverse affect on student retention? Are universities recognizing and studying the potential issues that might arise when a substantial portion of incoming freshmen receive the majority of their instruction from part-time faculty? This paper presents the results of an ongoing study of the relationship between faculty status and student retention at a comprehensive Midwestern university. Of particular interest is the degree to which first-time full-time freshmen are exposed to part-time faculty and whether there are ways to determine if faculty status, defined here as part-time versus full-time, has a discernable and direct impact on student retention.

Introduction

The growing number of part-time personnel used as teaching faculty in the academy is an issue of increasing concern. Recent data (NCES, 1999), suggest that in 1997 42.5 percent of the professorate were employed part-time. In 1970, just under 22 percent of the instructional corps in higher education were employed in a part-time capacity. Clearly, the utilization of part-time faculty is increasing at an alarming rate, and this 25-year trend has serious implications for faculty work and institutional vitality.

Does the mere change in these proportions cause major concern? Should greater attention be focused simply on the number of part-time versus full-time faculty?

Or, should we be concerned with the broader issues surrounding the use of part-time faculty?

An important factor neglected in the literature involves an investigation into whether the increased utilization of part-time faculty impacts student retention. Are part-time faculty, who are employed primarily to teach introductory courses, having an adverse affect on student retention? Are universities recognizing the potential issues that might arise when a substantial portion of first-time full-time freshmen receive the majority of their instruction from part-time faculty?

This paper presents the results of an ongoing study of the relationship between faculty status and student retention at a comprehensive public Midwestern university. Of particular interest is the degree to which first-time freshmen are exposed to part-time faculty and whether faculty status, defined here as part-time versus full-time, has a discernable impact on student learning outcomes and student retention.

The authors chose to focus on student retention as the principle outcome over other academic outcomes, such as course grades, course success, or time-to-degree for a number of important reasons. Namely, based upon a preliminary analysis of faculty instructional assignments, it was determined that part-time faculty taught disproportionately larger numbers of freshmen-level survey courses. Furthermore, a number of previous studies alluded to the possible impact of part-time faculty instruction on student retention (Johnson, 1996; Iadevaia, 1991; Pisani and Scott, 1996; Lowther et. al, 1990). However, none were successful in substantiating such claims.

Current Knowledge

The starting point for understanding issues involving part-time faculty is the 1993 study The Invisible Faculty, by Judith Gappa and David Leslie. Subtitled, "improving the status of part-timers in higher education," the authors based their analysis on data from the 1988 National Study of Post-Secondary Faculty (NSOPF) and personal interviews conducted at 18 campuses across the country during the 1990-91 academic year. As the subtitle indicates, this study represented a call for change; to more fully understand and improve the plight of those described as "unrecognized, unrewarded, and invisible."

Major changes have taken place since Gappa and Leslie's initial call to action, not all of which may be viewed by academe as positive. First, the use of part-time faculty has continued to increase at a pace surpassing the employment growth among full-time tenure track faculty (NCES, 1999). Furthermore, institutions are finding more and varied ways to justify the reliance on part-timers. The roles and responsibilities once the sole purview of the full-time faculty, including academic advising, remedial instruction, committee assignments, and curriculum development are increasingly being assigned to part-time and temporary faculty.

Concerns about the usage level of part-time faculty in September, 1997, led 10 academic associations to hold perhaps the first major joint conference on the Growing Use of Part-Time and Adjunct Faculty (AAUP, 1997). The resulting joint policy statement called for limitations on the usage of part-time faculty and issued an appeal for dramatic increases in the number of new tenure-track openings.

That same year, the Alfred P. Sloan Foundation supported a conference on the increasing use of part-time and adjunct faculty. David Leslie, in writing the conference report, coined a new phrase when he posited that part-time and adjunct faculty constituted "a new majority" on America's college campuses (Leslie, 1998). To reach this conclusion, Leslie grouped full-time but temporary faculty members with part-timers. By adding individuals not eligible for tenure with part-time and adjunct faculty, Leslie arrives at a combined total of 57 percent. The heavy use of graduate teaching assistants pushes this percentage even higher.

The vast majority of the existing research on the subject has concentrated on the number of part-time faculty, their qualifications, and their job market goals and motivations. In considering the principle findings of these various studies and reports, it is clear that, regardless of how one measures or defines part-time faculty, higher education is using more part-time and temporary faculty than full-time faculty to educate students. Yet, little has been done to explore the impact of the use of part-time faculty in higher education on student learning outcomes and retention.

There is a void in the literature relative to the relationship between part-time faculty utilization and student learning

outcomes, namely student retention. In a national study conducted by the authors, issues of where part-time faculty are being utilized was studied. We found that institutions most frequently use part-time and adjunct faculty in lower level undergraduate courses, particularly survey courses. Especially heavy part-time utilization was found in the disciplines of English Literature and Writing, and Mathematics (Reid, et. al, 1999). Furthermore we asserted that because of the transitory nature of their academic appointments, part-time faculty are not readily available to provide much needed faculty-student contact outside of the classroom. This contact is especially important for new college freshmen as well as the adult student returning to college. Faculty who teach freshmen must also be able to properly identify at-risk student behavior, but most often part-time faculty do not possess the skills necessary to identify such students. Furthermore, part-time faculty are usually not sufficiently knowledgeable with reference to available institutional services when referrals are warranted. Once on campus, large numbers of at-risk students are increasingly being educated by part-time faculty, a group who historically have few if any formal ties to the institution, and for all intents and purposes teach their courses and then leave campus— no office hours, no contact with students outside of the classroom, no consultation with those teaching remedial courses (be they full-time or part-time), and little if any opportunity for the much-needed professional development requisite to handle the multifaceted and complex challenges that faculty face when remediating students.

Data Analysis

In order to study the relationship between faculty status and student retention, a data set was constructed containing both faculty and student characteristics. The data set included all first-time, freshmen entering a midsized public comprehensive Midwestern university in each fall semester from the fall of 1997 to the fall of 2000 (a total of 7,174 students). For each entering student, information was gathered on their cohort membership (age, race, gender, and ethnicity), baseline ability or human capital measures (SAT composite, SAT math, SAT verbal, ACT comp., and course grades), and academic profile (school of their declared major, hours attempted in each semester, hours completed in each semester, course instructor, and the student's residency status (on or off-campus)). The student information was then matched with instructor characteristics (department of residence, and status (full-versus part-time) on a course by course basis.

For the purposes of our work, part-time faculty were defined as all non-tenure eligible faculty teaching nine or fewer semester credit hours (three courses) per academic term. Anyone teaching remedial or non-academic credit courses were excluded from the analysis.

The first step in analyzing whether faculty status might

have an affect on student retention is to determine the degree to which incoming freshmen were exposed to full- and part-time faculty and then to compare that information to student retention information. Table 1 shows the extent to which the incoming freshmen were exposed to part-time faculty in their first semesters (fall of 1997 through fall of 2000). Preliminary descriptive analysis of the data reveals several interesting results.

Table 1
Exposure of First-time Freshmen to Part-Time Faculty in their First Semester

Percent of Courses Taught by Part-time Faculty	Cum. %			
	Fall 97 Cohort n=1818	Fall 98 Cohort n=1661	Fall 99 Cohort n=1810	Fall 00 Cohort n=1885
0% (none)	4.7%	3.6%	4.5%	6.3%
25% or less	22.5%	16.4%	19.6%	24.3%
50% or less	55.0%	44.3%	53.3%	59.7%
75% or less	80.9%	73.1%	81.5%	84.5%
100% (all)	7.5%	12.9%	7.2%	6.9%

First, as Table 1 reveals, between 73% and 81% of all first-time freshmen had at least 75% of their first semester coursework taught by part-time faculty. More surprisingly, between 7% and 13% had their entire course load taught by part-time faculty during their first semester on campus while only 4% to 6% of the freshman class encountered no part-time faculty instruction. Overall, first-time freshmen at the institution took an average of 48% of their first semester coursework with part-time instructors. Campus-wide, an average of 40% of undergraduate courses were taught by part-time instructors during the four-year period.

Table 2 reveals that of the 1,818 first-time, full-time freshmen on campus in the fall of 1997, 275 did not return for their second semester (85% fall to spring retention rate). Similar retention figures are presented for each fall cohort of first-time freshmen. Of major interest is whether or not retained and non-retained students faced different proportions of part-time to full-time faculty.

Table 2
One Semester Retention of First-Time Freshmen

Retained in the Spring Semester	Fall 97	Fall 98	Fall 99	Fall 2000
No	275	285	308	348
Yes	1543	1376	1502	1537
Retention Rate	84.9%	82.8%	83.0%	81.5%

The data in Table 3 reveals an inverse relationship between one-semester retention rates and exposure to part-time faculty. Students who were retained into the spring semester took a lower proportion of their previous fall semester coursework from part-time faculty.

Table 3
One-semester Retention Rates for First-time Freshmen by Quartile Exposure to Part-Time Faculty

Percent of Courses Taught by Part-time Faculty	Retention Rates			
	Fall 97 Cohort n=1818	Fall 98 Cohort n=1661	Fall 99 Cohort n=1810	Fall 00 Cohort n=1885
0% (none)	87.2%	81.4%	86.4%	83.1%
25% or less	87.8%	87.9%	86.5%	84.1%
50% or less	88.9%	86.1%	85.1%	83.4%
75% or less	80.0%	84.2%	82.2%	80.7%
100% (all)	80.9%	74.9%	76.7%	74.7%
Overall Retention Rate	84.9%	82.8%	83.0%	81.5%

Figure 1 illustrates the various quartiles of first semester exposure to part-time faculty. In three of the four years under consideration, second quartile (26 – 50% exposure) was the largest. Of particular interest was the increase, following a drop in the second year of the study, in the numbers of students falling into the first quartile and the decrease in the size of the fourth quartile. Apparently, the exposure to part-time faculty, as measured by proportion of courses taught, is diminishing in relative terms at the study institution.

Figure 1
First Semester Exposure to Part-Time Faculty--Quartiles

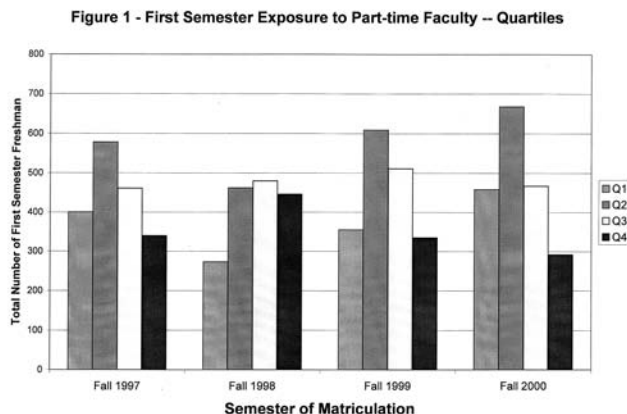


Table 4 presents the results of cross tabulations between the quartiles of first semester exposure to part-time faculty and whether a student was retained in their second (spring) semester. The null hypothesis for these tests was that there was no relationship between the exposure of students

Table 4
First Semester Exposure in Quartiles to Spring Semester Retention

	Fall 97 Cohort n=1818	Fall 98 Cohort n=1661	Fall 99 Cohort n=1810	Fall 00 Cohort n=1885
Pearson Chi-Sq.	22.51	28.93	14.47	12.83
d.f.	3	3	3	3
p-value	.000	.000	.002	.005
Pearson's R	-.091	-.120	-.085	-.075
Appr. T	-3.87	-4.92	-3.65	-3.29
p-value	.000	.000	.000	.001

to part-time faculty in their first semester in college (represented in quartile form) and their retention into their second semester.

The results presented in Table 4 show that the null hypothesis of no relationship was rejected for each of the cohorts at the 0.01 level of significance. Furthermore, the Pearson Correlation coefficients reveal that there is a linear, negative and significant relationship between exposure and retention. Higher levels of exposure to part-time faculty in a student's first semester in college lower the retention rate in the student's second semester.

Another consideration was to what extent students' themselves influenced their quartile membership. How were students who fell into the first quartile of low exposure to part-time faculty different from those who were members of the fourth quartile? Table 5 shows several basic descriptive statistics for the quartiles taken from the data on students entering in the fall of 2000 (fall 1997 through fall 1999 showed exactly the same characteristics).

Table 5 reveals that students who take a higher proportion of courses from part-time faculty in their first semester of college are more likely to be male, have lower SAT or ACT scores and have lower GPAs following the completion of the semester.

Finally, in order to discern the true impact of exposure to part-time faculty on student retention accounting for academic preparation, a logistic regression was developed using the entire four-year database. Logistical regression was employed because of the presence of a dichotomous dependent variable for student retention. The utilization of

Table 5
Quartile Demographics for the Fall 2000 Cohort (n = 1885)

	Q1 n=458	Q2 n=668	Q3 n=467	Q4 n=292
Gender (0=female, 1=male)	0.40	0.37	0.43	0.49
SAT Comp	1013	975	920	855
ACT Comp	22.4	20.7	18.9	18.4
F00 Attempted Hours	13	13	13	11
F00 Earned Hours	10	10	8	6
F00 GPA	2.39	2.46	2.23	1.36

this technique in higher education and social science research is widely accepted and is typically used as an alternative to ordinary least squares with dichotomous dependent variables (Menard, 1995; Dey & Astin, 1993; DesJardins, 2001). Table 6 presents the results of the logistic regression model of one-semester retention during the four years.

The Hosmer and Lemeshow's goodness of fit test (which yields a test statistic significance level above 0.05) leads to a failure to reject a null hypothesis for the model that there is no difference between the observed and model predicted values of the dependent variable. Thus, the model's estimates are acceptable (Menard, 1995).

Table 6 reveals that both SAT Math and a student's attempted hours have a positive and significant impact on one-semester retention. A 100 point increase in a student's SAT Math score increases the odds of that student being retained by 1.22 (the odds ratio associated with a 100 point change is $e^{(0.002 \times 100)}$ times. A student who attempts

Table 6
Logistic Regression Model of One-semester Student Retention (n = 7174)

Variable	Parameter Estimate	Standard Error	Wald Chi - Sq	Pr > Chi - Sq	Odds Ratio	Inverse Odds Ratio
Intercept	-0.547	0.325	2.821	0.093*		
SAT Verbal	0.000	0.001	0.238	0.626	1.00	
SAT Math	0.002	0.001	11.377	0.001**	1.002	
Hours Attempted	0.122	0.011	119.700	0.000**	1.13	
Gender (1=male)	-0.285	0.086	10.860	0.001**	0.752	1.33
Exposure (2nd)	-0.185	0.128	2.090	0.148	0.831	1.20
Exposure (3rd)	-0.255	0.133	3.707	0.054*	0.775	1.29
Exposure (4th)	-0.382	0.141	7.318	0.007**	0.683	1.47

Hosmer / Lemeshow Chi-sq. = 9.722 with 8 df (sig. = 0.285)

-2 Log Likelihood = 3830.8

Nagelkerke R2 = 0.075

**significant at the 0.01 level, *significant at the 0.10 level.

an additional hour has 1.13 higher odds of being retained than a student taking one fewer hour.

In order to interpret the odds ratios when the logistic regression coefficients are negative, the inverse odds ratio suggested by DesJardins (2001) is utilized. The inverse odds ratio allows for a simplification of the interpretation of negative coefficients through a simple change of the base reference group. In this case the reference group for the inverse coefficients becomes students not retained.

Table 6 reveals that being male has a statistically significant negative impact on student retention in our sample. The inverse odds ratio suggests that being male increases a student's odds of not being retained by 1.33 times.

The exposure variables represent dummy variables for the 2nd through 4th quartiles of exposure to part-time faculty. Table 6 reveals that a student who is exposed to between 50% and 75% part-time faculty in their first semester has 1.29 times higher odds of not being retained than students whose exposure is between 0 and 25% (the reference group). Additionally, students whose exposure is between 75% and 100% part-time faculty in their first semester have 1.47 times higher odds of not being retained than the reference group. Clearly, holding academic preparation constant, exposure to part-time faculty at levels above 50% during their first semester on campus has a direct and significant negative impact on student retention into the second semester.

Suggestions

The implications of these preliminary research findings indicate that institutions should give more thoughtful consideration to where part-time faculty are utilized on their respective campuses, and the potential effects of such usage on students during the freshman year experience. Institutions would be wise to focus on the professional development of their part-time and adjunct teaching faculty, paying particular attention to the development of part-timers teaching first-semester introductory courses.

Each academic year, institutions spend millions of dollars on research, restructuring, and professional development of staff, all in the name of student retention. Academic conferences are flush with papers, panels, and other various presentations discussing, in detail, how institutions engineer new student retention programs in student development, residence life, multicultural, learning communities, honors programs, freshmen year initiatives, adult learners, and the sundry milieu of college student characteristics. Great pronouncements are made about the anticipated levels of success of these programs; however, true project effect has been more difficult to identify. Very few retention programs, if any, concern themselves with part-time faculty.

Retention research on part-time faculty may, in fact,

be the least expensive and most revealing research that an institution can undertake. The most elementary analysis of part-time faculty on student learning and retention can be completed in a matter of a few short days and with little to no cost.

During their collegiate lifetime, many if not the majority of undergraduate students are exposed to instruction delivered by part-time and adjunct faculty. This exposure to part-timers is particularly acute for first-year freshmen, who encounter a higher proportion of part-time instruction in the survey courses in which virtually all freshmen enroll. As is well documented in the literature, the freshman year yields the single greatest impact on individual academic success, as defined by student retention and eventual graduation.

One problem is that part-time faculty may not typically provide the first year student with the academic integration opportunities necessary to permit students to feel connected to faculty. Part-timers usually do not have office hours (or even an office), conduct research with students, meet with students on an informal basis on campus, advise student organizations and groups, or participate in the academic life of the campus. Because of their transient professional lifestyles, part-time faculty can pose a significant challenge to the at-risk student.

For institutions that profess an earnest desire to critically analyze student learning on their campus with an eye toward improved retention rates, a small investment in evaluating the affect of part-time faculty on student retention, particularly during the freshman year, could yield significant dividends. Greater attention to how institutions use and support part-time and adjunct faculty should have a direct, and positive effect on retention and student learning outcomes.

References

American Association of University Professors. (1998). Working for Academic Renewal: A Kit for Organizing on the Issues of Part-time and Non-tenure track faculty. AAUP.

American Association of University Professors. (1997). Statement from the Conference on the Growing Use of Part-time and Adjunct Faculty. AAUP.

DesJardins, Stephen L. (2001) A Comment on Interpreting Odd-Ratios When Logistic Regression Coefficients are Negative, AIR Professional File, Number 81, Fall 2001.

Dey, E.L. and Astin A.W. (1993). Statistical Alternatives for Studying College Student Retention: A Comparative Analysis of Logit, Probit, and Linear Regression. Research in Higher Education, 42 (6).

Gappa, Judith and Leslie, David W. (1993). The Invisible Faculty: Improving the Status of Part-Timers in Higher Education. Jossey-Bass Publishers: San Francisco.

Ladevaia, David. (1991). A comparison of full-time to part-time faculty and full-time to part-time science faculty in terms of student success at Pima Community College. Doctoral dissertation, Nova University.

Leslie, D.W. (ed) (Winter 1998). The Growing Use of Part-Time Faculty: Understanding Causes and Effects. New Directions for Higher Education. Jossey-Bass Publishers: San Francisco.

Leslie, D. (ed) (1998). Part-Time, Adjunct, and Temporary Faculty: The New Majority? Report of the Sloan Foundation on Part-Time and Adjunct Faculty. Alfred P. Sloan Foundation.

Lowther, M., Stark, J., Genthon, M. and Bentley, R. (1990). Comparing Introductory Course Planning Among Full-Time and Part-Time Faculty. Research in Higher Education, 31, 6.

Menard, S. (1995) Applied Logistic Regression Analysis, Sage University Papers: Quantitative Applications in the Social Sciences, 07-106. Newbury Park, CA: Sage Publications

Pisani, A. and Stott, N. (1996). An investigation of part-time faculty commitment to student development. Paper presented at the annual meeting of the Association for the Study of Higher Education, Memphis.

Reid, R., Harrington, C. and Schibik, T. (1999). The Use and Misuse of Part-time Faculty. Paper presented at the Seventh AAHE Conference on Faculty Roles and Rewards, San Diego, CA.

THE AIR PROFESSIONAL FILE—1978-2004

A list of titles for the issues printed to date follows. Most issues are "out of print," but microfiche or photocopies are available through ERIC. Photocopies are also available from the AIR Executive Office, 222 Stone Building, Florida State University, Tallahassee, FL 32306-4462, \$3.00 each, prepaid, which covers the costs of postage and handling. Please do not contact the editor for reprints of previously published Professional File issues.

- Organizing for Institutional Research* (J.W. Ridge; 6 pp; No. 1)
Dealing with Information Systems: The Institutional Researcher's Problems and Prospects (L.E. Saunders; 4 pp; No. 2)
Formula Budgeting and the Financing of Public Higher Education: Panacea or Nemesis for the 1980s? (F.M. Gross; 6 pp; No. 3)
Methodology and Limitations of Ohio Enrollment Projections (G.A. Kraetsch; 8 pp; No. 4)
Conducting Data Exchange Programs (A.M. Bloom & J.A. Montgomery; 4 pp; No. 5)
Choosing a Computer Language for Institutional Research (D. Strenglein; 4 pp; No. 6)
Cost Studies in Higher Education (S.R. Hample; 4 pp; No. 7)
Institutional Research and External Agency Reporting Responsibility (G. Davis; 4 pp; No. 8)
Coping with Curricular Change in Academe (G.S. Melchiori; 4 pp; No. 9)
Computing and Office Automation—Changing Variables (E.M. Staman; 6 pp; No. 10)
Resource Allocation in U.K. Universities (B.J.R. Taylor; 8 pp; No. 11)
Career Development in Institutional Research (M.D. Johnson; 5 pp; No. 12)
The Institutional Research Director: Professional Development and Career Path (W.P. Fenstermacher; 6pp; No. 13)
A Methodological Approach to Selective Cutbacks (C.A. Belanger & L. Tremblay; 7 pp; No. 14)
Effective Use of Models in the Decision Process: Theory Grounded in Three Case Studies (M. Mayo & R.E. Kallio; 8 pp; No. 15)
Triage and the Art of Institutional Research (D.M. Norris; 6 pp; No. 16)
The Use of Computational Diagrams and Nomograms in Higher Education (R.K. Brandenburg & W.A. Simpson; 8 pp; No. 17)
Decision Support Systems for Academic Administration (L.J. Moore & A.G. Greenwood; 9 pp; No. 18)
The Cost Basis for Resource Allocation for Sandwich Courses (B.J.R. Taylor; 7 pp; No. 19)
Assessing Faculty Salary Equity (C.A. Allard; 7 pp; No. 20)
Effective Writing: Go Tell It on the Mountain (C.W. Ruggiero, C.F. Elton, C.J. Mullins & J.G. Smoot; 7 pp; No. 21)
Preparing for Self-Study (F.C. Johnson & M.E. Christal; 7 pp; No. 22)
Concepts of Cost and Cost Analysis for Higher Education (P.T. Brinkman & R.H. Allen; 8 pp; No. 23)
The Calculation and Presentation of Management Information from Comparative Budget Analysis (B.J.R. Taylor; 10 pp; No. 24)
The Anatomy of an Academic Program Review (R.L. Harpel; 6 pp; No. 25)
The Role of Program Review in Strategic Planning (R.J. Barak; 7 pp; No. 26)
The Adult Learner: Four Aspects (Ed. J.A. Lucas; 7 pp; No. 27)
Building a Student Flow Model (W.A. Simpson; 7 pp; No. 28)
Evaluating Remedial Education Programs (T.H. Bers; 8 pp; No. 29)
Developing a Faculty Information System at Carnegie Mellon University (D.L. Gibson & C. Golden; 7 pp; No. 30)
Designing an Information Center: An Analysis of Markets and Delivery Systems (R. Matross; 7 pp; No. 31)
Linking Learning Style Theory with Retention Research: The TRAILS Project (D.H. Kalsbeek; 7 pp; No. 32)
Data Integrity: Why Aren't the Data Accurate? (F.J. Gose; 7 pp; No. 33)
Electronic Mail and Networks: New Tools for Institutional Research and University Planning (D.A. Updegrave, J.A. Muffo & J.A. Dunn, Jr.; 7pp; No. 34)
Case Studies as a Supplement to Quantitative Research: Evaluation of an Intervention Program for High Risk Students (M. Peglow-Hoch & R.D. Walleri; 8 pp; No. 35)
Interpreting and Presenting Data to Management (C.A. Clagett; 5 pp; No. 36)
The Role of Institutional Research in Implementing Institutional Effectiveness or Outcomes Assessment (J.O. Nichols; 6 pp; No. 37)
Phenomenological Interviewing in the Conduct of Institutional Research: An Argument and an Illustration (L.C. Attinasi, Jr.; 8pp; No. 38)
Beginning to Understand Why Older Students Drop Out of College (C. Farabaugh-Dorkins; 12 pp; No. 39)
A Responsive High School Feedback System (P.B. Duby; 8 pp; No. 40)
Listening to Your Alumni: One Way to Assess Academic Outcomes (J. Pettit; 12 pp; No. 41)
Accountability in Continuing Education Measuring Noncredit Student Outcomes (C.A. Clagett & D.D. McConochie; 6pp; No. 42)
Focus Group Interviews: Applications for Institutional Research (D.L. Brodigan; 6 pp; No. 43)
An Interactive Model for Studying Student Retention (R.H. Glover & J. Wilcox; 12 pp; No. 44)
Increasing Admitted Student Yield Using a Political Targeting Model and Discriminant Analysis: An Institutional Research Admissions Partnership (R.F. Urban; 6 pp; No. 45)
Using Total Quality to Better Manage an Institutional Research Office (M.A. Heverly; 6 pp; No. 46)
Critique of a Method For Surveying Employers (T. Banta, R.H. Phillippi & W. Lyons; 8 pp; No. 47)
Plan-Do-Check-Act and the Management of Institutional Research (G.W. McLaughlin & J.K. Snyder; 10 pp; No. 48)
Strategic Planning and Organizational Change: Implications for Institutional Researchers (K.A. Corak & D.P. Wharton; 10 pp; No. 49)
Academic and Librarian Faculty: Birds of a Different Feather in Compensation Policy? (M.E. Zeglen & E.J. Schmidt; 10 pp; No. 50)
Setting Up a Key Success Index Report: A How-To Manual (M.M. Sapp; 8 pp; No. 51)
Involving Faculty in the Assessment of General Education: A Case Study (D.G. Underwood & R.H. Nowaczyk; 6 pp; No. 52)

THE AIR PROFESSIONAL FILE—1978-2003

- Using a Total Quality Management Team to Improve Student Information Publications* (J.L. Frost & G.L. Beach; 8 pp; No. 53)
- Evaluating the College Mission through Assessing Institutional Outcomes* (C.J. Myers & P.J. Silvers; 9 pp; No. 54)
- Community College Students' Persistence and Goal Attainment: A Five-year Longitudinal Study* (K.A. Conklin; 9 pp; No. 55)
- What Does an Academic Department Chairperson Need to Know Anyway?* (M.K. Kinnick; 11 pp; No. 56)
- Cost of Living and Taxation Adjustments in Salary Comparisons* (M.E. Zeglen & G. Tesfagiorgis; 14 pp; No. 57)
- The Virtual Office: An Organizational Paradigm for Institutional Research in the 90's* (R. Matross; 8 pp; No. 58)
- Student Satisfaction Surveys: Measurement and Utilization Issues* (L. Sanders & S. Chan; 9 pp; No. 59)
- The Error Of Our Ways; Using TQM Tactics to Combat Institutional Issues Research Bloopers* (M.E. Zeglin; 18 pp; No. 60)
- How Enrollment Ends; Analyzing the Correlates of Student Graduation, Transfer, and Dropout with a Competing Risks Model* (S.L. Ronco; 14 pp; No. 61)
- Setting a Census Date to Optimize Enrollment, Retention, and Tuition Revenue Projects* (V. Borden, K. Burton, S. Keucher, F. Vossburg-Conaway; 12 pp; No. 62)
- Alternative Methods For Validating Admissions and Course Placement Criteria* (J. Noble & R. Sawyer; 12 pp; No. 63)
- Admissions Standards for Undergraduate Transfer Students: A Policy Analysis* (J. Saupe & S. Long; 12 pp; No. 64)
- IR for IR—Indispensable Resources for Institutional Researchers: An Analysis of AIR Publications Topics Since 1974* (J. Volkwein & V. Volkwein; 12 pp; No. 65)
- Progress Made on a Plan to Integrate Planning, Budgeting, Assessment and Quality Principles to Achieve Institutional Improvement* (S. Griffith, S. Day, J. Scott, R. Smallwood; 12 pp; No. 66)
- The Local Economic Impact of Higher Education: An Overview of Methods and Practice* (K. Stokes & P. Coomes; 16 pp; No. 67)
- Developmental Education Outcomes at Minnesota Community Colleges* (C. Schoenecker, J. Evens & L. Bollman; 16 pp; No. 68)
- Studying Faculty Flows Using an Interactive Spreadsheet Model* (W. Kelly; 16 pp; No. 69)
- Using the National Datasets for Faculty Studies* (J. Milam; 20 pp; No. 70)
- Tracking Institutional leavers: An Application* (S. DesJardins, H. Pontiff; 14 pp; No. 71)
- Predicting Freshman Success Based on High School Record and Other Measures* (D. Eno, G. W. McLaughlin, P. Sheldon & P. Brozovsky; 12 pp; No. 72)
- A New Focus for Institutional Researchers: Developing and Using a Student Decision Support System* (J. Frost, M. Wang & M. Dalrymple; 12 pp; No. 73)
- The Role of Academic Process in Student Achievement: An Application of Structural Equations Modeling and Cluster Analysis to Community College Longitudinal Data* (K. Boughan; 21 pp; No. 74)
- A Collaborative Role for Industry Assessing Student Learning* (F. McMartin; 12 pp; No. 75)
- Efficiency and Effectiveness in Graduate Education: A Case Analysis* (M. Kehrhahn, N.L. Travers & B.G. Sheckley; No.76)
- ABCs of Higher Education-Getting Back to the Basics: An Activity-Based Costing Approach to Planning and Financial Decision Making* (K. S. Cox, L. G. Smith & R.G. Downey; 12 pp; No. 77)
- Using Predictive Modeling to Target Student Recruitment: Theory and Practice* (E. Thomas, G. Reznik & W. Dawes; 12 pp; No. 78)
- Assessing the Impact of Curricular and Instructional Reform - A Model for Examining Gateway Courses* (S.J. Andrade; 16 pp; No. 79)
- Surviving and Benefitting from an Institutional Research Program Review* (W.E. Knight; 7 pp; No. 80)
- A Comment on Interpreting Odds-Ratios when Logistic Regression Coefficients are Negative* (S.L. DesJardins; 7 pp; No. 81)
- Including Transfer-Out Behavior in Retention Models: Using NSC EnrollmentSearch Data* (S.R. Porter; 16 pp; No. 82)
- Assessing the Performance of Public Research Universities Using NSF/NCES Data and Data Envelopment Analysis Technique* (H. Zheng & A. Stewart; 24 pp; No. 83)
- Finding the 'Start Line' with an Institutional Effectiveness Inventory* (S. Ronco & S. Brown; 12 pp; No. 84)
- Toward a Comprehensive Model of Influences Upon Time to Bachelor's Degree Attainment* (W. Knight; 18 pp; No. 85)
- Using Logistic Regression to Guide Enrollment Management at a Public Regional University* (D. Berge & D. Hendel; 14 pp; No. 86)
- A Micro Economic Model to Assess the Economic Impact of Universities: A Case Example* (R. Parsons & A. Griffiths; 24 pp; No. 87)
- Methodology for Developing an Institutional Data Warehouse* (D. Wierschem, R. McBroom & J. McMillen; 12 pp; No. 88)
- The Role of Institutional Research in Space Planning* (C.E. Watt, B.A. Johnston, R.E. Chrestman & T.B. Higerd; 10 pp; No. 89)
- What Works Best? Collecting Alumni Data with Multiple Technologies* (S. R. Porter & P.D. Umback; 10 pp; No. 90)

The AIR Professional File is intended as a presentation of papers which synthesize and interpret issues, operations, and research of interest in the field of institutional research. Authors are responsible for material presented. The File is published by the Association for Institutional Research.

Editor:
Gerald W. McLaughlin
Director of Planning and Institutional Research
DePaul University
1 East Jackson, Suite 1501
Chicago, IL 60604-2216
Phone: 312/362-8403
Fax: 312/362-5918
gmclaugh@depaul.edu

Associate Editor:
Dr. Jessica S. Korn
Director of Institutional Research
Eckerd College
4200 54th Avenue North
Saint Petersburg, FL 33711
Phone: 727/864-7677
Fax: 727/964-1877
kornjs@eckerd.edu

Managing Editor:
Dr. Terrence R. Russell
Executive Director
Association for Institutional Research
222 Stone Building
Florida State University
Tallahassee, FL 32306-4462
Phone: 850/644-4470
Fax: 850/644-8824
air@mailr.fsu.edu

AIR Professional File Editorial Board

Dr. Anne Marie Delaney
Director
Institutional Research
Babson College
Babson Park, MA

Dr. Marie Richman
Assistant Director
Analytical Studies
University of California-Irvine
Irvine, CA

Dr. Glenn W. James
Director
Institutional Research
Tennessee Technological University
Cookeville, TN

Dr. Gerald H. Gaither
Director
Institutional Research
Prairie View A&M University
Prairie View, TX

Dr. Jeffrey A. Seybert
Director
Institutional Research
Johnson County Community College
Overland Park, KS

Dr. William E. Knight
Director
Planning and Institutional Research
Bowling Green State University
Bowling Green, OH

Dr. David Jamieson-Drake
Director
Institutional Research
Duke University
Durham, NC

Dr. Bruce Szelest
Associate Director
Institutional Research
SUNY-Albany
Albany, NY

Dr. Trudy H. Bers
Senior Director
Research, Curriculum
and Planning
Oakton Community College
Des Plaines, IL

Dr. Anne Machung
Principal Policy Analyst
Policy and Analysis
University of California
Oakland, CA

Dr. Stephen L. Chambers
Director
Institutional Research
University of Colorado at Colorado Springs
Colorado Springs, CO

Dr. Marsha Hirano-Nakanishi
Senior Director
Analytic Studies
California State University
Long Beach, CA

Authors interested in having their manuscripts considered for the *Professional File* are encouraged to send four copies of each manuscript to the editor, Dr. Gerald McLaughlin. Manuscripts are accepted any time of the year as long as they are not under consideration at another journal or similar publication. The suggested maximum length of a manuscript is 5,000 words (approximately 20 double-spaced pages), including tables, charts and references. Please follow the style guidelines of the *Publications Manual of the American Psychological Association, 4th Edition*.
