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The Association for Institutional Research

TRIAGE AND THE ART OF INSTITUTIONAL RESEARCH

Donald M. Norris Director, Office of Policy Analysis University of Houston-University Park

There is an overwhelming tide in the affairs of humankind toward increasing complexity and information overload. Simple ideas are rendered complex, and complex ideas become obscured by too much information, jargon, and professional mumbo jumbo. This tide has become a tidal wave in the academic world. Institutional researchers are often preoccupied with the more complex and arcane aspects of research design, ever-growing management information systems, and the configuration of sophisticated "decision-support systems." Yet, the finest work of analysis imaginable can be rendered ineffective if it is not presented thoughtfully and in a manner congruent with the needs and preferences of decision makers. Indeed, the single most precious gift that an analyst can give is the clear and thoughtful presentation of the bare minimum of information necessary for the task. This is what separates successful institutional researchers from those who toil in the vineyards with little achievement or recognition.

Unfortunately, this is not a lesson that is easily learned. Through personal experience, from those brief and scintillating thrills of victory punctuated by the all too common agonies of defeat, one comes to appreciate the importance of this issue. Colleagues have shared with me, at my request, their "war stories" of similar disappointments—sorrowful tales of elegant works of analysis which were blissfully ignored or, even worse, reviled. No one is immune; in fact, the more experienced institutional researcher, having survived many an analytical campaign, may be even more prone than the newcomer to overlook the basics of successful presentation. In any case, my receipt of the commisserations of colleagues has made me the caretaker of a precious piece of oral history and has moved me to share the following maxims with the readers of the AIR Professional File. My purpose is to help others avoid certain peril if the maxims are ignored.

Before revealing these tenets, however, it is important to consider the "target" of much of an institutional researcher's work. The mission of an institutional researcher is to attempt to influence the decision making of the Academic Administrator. Consider such persons for a moment; study carefully their characteristics. Their body language often tells the story: brows ridged and deeply furrowed from considering a host of issues; eyes weary from scrutinizing too many words and figures; minds assaulted by too many facts, many of them contradictory; and shoulders bent from attempting to apportion time between many conflicting activities. Their decision-making style is personalized, even idiosyncratic, and they like it that way. Even if they are moderately rational and "numerate" in their approach to problems, they like the figures their way. Like most decision makers in academia, they are bright, but they may be naive about some aspects of administration or possess a perspective that has been shaped irrevocably ("distorted" may be a more appropriate term in a few extreme cases) by specialized training in a particular academic discipline. Moreover, even the most facile mind among them seldom utilizes more than six or seven relevant pieces of information in making a decision, and the chances are that they have already received at least a dozen.

If you try to influence these persons with a thirty-page report, supported by three technical appendices, all that this author can do is wish you good luck in your new job-whatever or wherever it might be.

However, you need not fall into the trap which has devoured so many hapless souls-if you abide by the following tenets:

Adhere to the KISS Principle

This is the first and greatest commandment, and it supercedes all others. The KISS Principle, roughly defined, means Keep It Sweet and Simple, with its corollaries, Keep It Short and Keep It Succinct. Few decision makers are interested in background, elegant analysis, or anything that would interest your standard, garden-variety professor of operations research. Indeed, we could probably achieve ninety percent of the goals of effective institutional research if we would simply abide by the KISS Principle. However, that is too easy for most of us-which proves my point. Since such a classic principle cannot be accepted at face value in such pristine form, the following additional rules are offered.

Avoid the Safety Patrol Syndrome

The fact that you were Captain of the Safety Patrol when you were in grammar school undoubtedly affected your personal development and the position you hold today, but that doesn't mean you should cite this experience on your curriculum vita. The same reasoning will help you to understand that because your analysis is supported by pages and pages of tables, graphs, and other figures is no reason for you to include them in your report. You may be proud of the many tables, but the decision maker will not usually share your enthusiasm. If you have an uncontrollable urge to have them "in print," bind and donate them to the campus library archives. But do not, under any circumstances, include them in any document which you expect to create an impact based on the power, not the weight, of its message.

This is where the concept of Triage applies: You should forward only those pieces of analysis which will make your case. Others must be discarded. If you don't practice Triage in your presentation, your superior may practice it on you. Take your choice.

Answer the Question, but First, Define the Question

How often have you received requests which go something like, "Pull together some data on this," or "What can you tell me about that?"-or questions which are even more vague or downright misleading? Few who request information and few decision makers looking for policy analysis have a precise idea of the question they want answered, let alone what they want in the way of analysis. Even if they do, their initial notion may require substantial modification as analysis becomes available and the problem unfolds. Consequently, it falls to the institutional researcher to take creative license in defining or redefining the question and then answering it with the greatest economy of words and figures.

It should be obvious that even a fine work of analysis, sagely presented, can fall short of the mark if the problem is defined improperly or if the basic question is not answered. Too much of this and you will be answering the wrong question, however brilliantly, for someone else.

Provide Information According to Its Purpose

Clearly, regular collections of statistical information, such as factbooks and simple information requests, require neither the quantity of synthesis nor the combination of words and figures which are required by policy analysis. A general rule is that, whenever possible, one should provide the minimum of information required to fulfill a particular request, uncluttered with excess verbiage and unnecessary analysis. However, if information is being provided to support policy analysis, some interpretation or accompanying narrative should usually be given to put the figures in perspective. One must evaluate the purpose and prospective application of the information while deciding how to cast it.

Match Your Information with Its Recipients

The issue of recipients is as important as purpose and content. The question of who is to be excluded from the distribution list is as important as that of who should be included. All administrators seem to have preferences for particular types of data: some like data presented in straight tabular form; others prefer charts and graphs; many prefer an executive summary where the figures have been translated into simple. expository English; while others have made up their minds already and merely want a comfortable pile of data (in some cases the more the better) which makes them feel secure about their prejudgments. A small but increasing number want the basic information maintain on line so that they can analyze it themselves. Clearly, one cannot design a different piece of analysis for everyone. The design must fit the conditions and purpose of the proposed analysis. It does make sense, however, to be aware of the preferences for analytical style and presentation of one's chief executive officers and to attempt to match the preferences—which include the extent to which data is to be supported by analyses and interpretation. It is helpful to know how strong these preferences are, for there is no advantage in providing interpretation to a president who wants just the figures.

THE UNIVERSITY OF TEXAS AT AUSTIN OFFICE OF INSTITUTIONAL STUDIES

INDUCED COURSE LOAD MATRIX (ICLM)

FALL 1976

SCHOOL OF COMMUNICATIONS DEPARTMENT OF ADVERTISING

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L.D. = LOWER DIVISION
U.D. = UPPER DIVISION
U'GRAD = UNDERGRADUATE

Figure 1: Induced Course Load Matrix (ICLM) which is distributed at the University of Texas at Austin to the department chairs and deans who have responsibility for the units involved. Reprinted by permission.

A corollary commandment to that of selective distribution is to design the layout of your printouts to suit the likely public, not your system analysts. A poorly designed and labeled layout, even if accompanied by appropriate documentation, will create a negative impression. For example, we have all seen Induced Course Load Matrix (ICLM) layouts where each page has far too many figures. Few are as clearly designed as the one in Figure 1, which is distributed at the University of Texas at Austin to the department chairs and deans who have responsibility for the units involved. In this case, an economy of information. clearly presented and explained, makes a most effective presentation.

Beware the Perils of Printout Worship

Seldom can any report extracted from the computer, no matter how wisely designed, be considered to be "analysis" without some additional work. The information needs to be interpreted, explained, and presented in some other form. A three-inch stack of printouts may be a thing of exquisite beauty to you and the life's work of your systems analyst, but to many potential users it is an unspeakable horror to be avoided at all costs. Never, under any circumstance, send such a printout to a group of executive officers or to the deans unless it is accompanied by an explanation and interpretation! The size of the printout may be reduced by eliminating data or analyses of those academic and/or administrative units for which the particular dean or executive officer is not directly responsible.

A corollary rule is not to trust second and third parties to extract information from your printouts which you could do yourself before distribution. You do not know how your figures might be misinterpreted or how critical distinctions might be missed-perhaps resulting in your information being blamed for poor decisions. If you are to be maligned, it is best to have nobody to blame but yourself.

A second corollary, which seems too basic to mention but which is regularly ignored, is that one should never be in too great a hurry to distribute that latest output "hot off the press." Time should be taken to check it thoroughly and to provide the necessary accompanying documentation or narrative. Despite the protestations of those who wanted the figures last week, it is better to present the right information in proper form-even if it takes a little longer.

Be the Winner of the Scavenger Hunt Award

It is not without reason that successful institutional researchers develop the reputation as the most consummate pack rats on campus. While some may not appreciate this approach to analysis, it is clear that a successful institutional researcher must be able to draw information from a host of sources to address a legion of needs, some of which can be anticipated but others of which are purely serendipitous. Successful institutional researchers do not generally win renown by being able to provide a single, particular type of data better than anyone on campus, but

τ	NIVERSITY		N CENTRAI	L CAMPUS			
		TISTICAL	HANDBOOK				Actual
	Actual			T	or Decrease		Value
	Value		1000 00		1980-81	1981-82	1981-82
	<u> 1976–77</u>	<u> 1977-78</u>	1978-79	1979-80	1900-01	1301-02	, 201 - 511
Fall Headcount Enrollment	29,812		+	_	+	-	28,295
Undergraduate	21,026	_	_	-	•	-	18,581
Postbaccalaureate	2,559		+	-	+	-	2,696
Special Professional	1,437	+	+	+	+	+	1,577
Graduate	4,790	+	+	_	+	+	5,441
Fall SCH	318,163	_	+	_	+	-	299,000
Undergraduate	265,539		-	_	+	-	234,427
Masters	26,025	+	+	_	+	+	31,789
Doctoral	6,710	+	+	_	+		9,570
Special Professional	19,889	+	+	+	+	+	23,214
	10.7	NC	-		-	+	10.6
Average SCH Load	11.6	NC	NC	+	-	+	11.7
Undergraduate	6.2	NC	NC	_	NC	+	6.2
Postbaccalaureate	7.4	+		_	-	+	7.2
Masters	7.6	+	+	_	+	+	9.7
Doctoral	13.7	+	-	+	•	+	14.4
Special Professional	13-1	*	_	•	•		
Degrees Awarded, Academic Year	3,280		_	+	_	2,713 (80-81)	NA
Bachelors	3,200		+	+		1,009 (80-81)	NA
Masters		+		+		113 (80-81)	NA
Doctoral	117	+	+	+	+	456 (80-81)	NA
Special Professional	419	-	-	•	•	130 ()	
Instructional Staff FTE	***	000				+	1,023
Ranked Faculty	NA	983	+	+	T		457
Other Instructional Staff	NA	485	+	-	-	_	2,153
Headcount Instructional Staff	NA	2,150	+	+	•		974
Ranked Faculty	NA	972	+	+	*	_	1,179
Other Instructional Staff	NA	1,178	+	+	+	NA.	NA.
Investment in Physical Plant (millions)	\$ 201	+	+	+	236 (79-80)	NA NA	1,179
Investment/FTE Student	\$ 7,716	+	+	-	8,915 (79-80)	NA	2,300
Educational & general Space (thousands ft2)	1,906	+	+	+	+	-	2,300
E&G Space/FTE Student (ft2/FTE)	72	+	+	+	+	+ + + + + + + + + + + + + + + + + + +	NA 92
Research Awards in Force (millions)	\$ 12.05	+	-	-	+	\$14.17 (80-81)	MA

NA = Not Available NC = No Change = Increase

Figure 2: An example of an executive summary page utilized in the factbook of the University of Houston-University Park to summarize some major institutional trends. Reprinted by permission.

by being able to provide a wide range of information on different areas and to combine this information in an effective manner.

The key to all of this is synthesis. The institutional researcher, in marshalling a host of sources for qualitative and quantitative information, is positioned uniquely to select the half dozen or so pieces of information which can truly illuminate the decision under consideration. Sorting the spoils of the scavenger hunt into those which are valuable and those which are worthless is the mark of a successful institutional researcher.

Take Time to Summarize

Almost no analytical report or piece of interpretation is so complex that it cannot be summarized in some manner. For most reports, it pays to take time to prepare an executive summary (or, if you have a lot of time, a one-page summary) to ensure that the report will be considered by decision makers. Within particular collections of information or policy analyses, there are generally one or two synthesizing tables which capture the essence of the information. These should be brought to the decision maker's attention, with the understanding that detailed backup is available but that these tables "tell the tale."

Figure 2 is an example of an executive summary page utilized in the factbook of the University of Houston-University Park to summarize some of the major institutional trends. It appears at the beginning of the factbook, serving not only as a summary but also as notice to the reader that what follows is probably designed with the needs of a busy decision maker in mind.

Some collections of information, such as departmental budget comparisons, factbooks, or other resource allocation documents, are by their nature comprehensive and intended to provide a large amount of data for consideration of a variety of problems. It makes sense, in such cases, to design the data layout carefully to use a single page for each unit of analysis, whenever possible. This makes it possible for the reader to easily synthesize and interpret the information. A page from the departmental budget book at the University of Texas at Austin provides a good example (Figure 3).

Figure 4 presents an example of the analysis of the peer data exchange conducted by the University of Houston. The key performance indicators derived from raw data are summarized on one page for this particular department; only the most important derived indicators are included. It is not terribly simple, but it contains on one page selected information needed to analyze this department.

Another tactic is to prepare a book of abstracts, such as the sample portrayed in Figure 5 from Georgia State University. This collection summarizes the major findings of research efforts and places the summaries in one location. It also cites the distribution of the report. A similar volume is being compiled at the University of Houston, where the major findings of each research and policy analysis effort are summarized on one page. The reports are separated into topical segments where a single page will not suffice. The book will be kept in loose-leaf form and updated and will also be maintained on line for access by campus executives.

The University of Texas at Austin Office of Institutional Studies DEPARTMENTAL BUDGET INFORMATION TABLE

Department	Archite	cture							College Architecture & Planning					
		76-77 Actual	76-77 Index	75-76 Index	74-75 Index	73-7 ⁴ Index			76-77 Actual	76-77 Index	75-76 Index	74-75 Index	73-74 Index	
FTE Faculty (Budgeted)	p C U	36.64 1,732.59	112 117	114 111	113 109	111 100	Resident* Instruction Budget	D C U	905,394 60,997,030	156 156	149 142	133 123	124 125 116	
Fall Term Headcount Majors	. C	623 709 41,387	95 101 104	90 97 107	100 103 105	109 110 102	Consumer Price Index (1971-2=100)				135.4	127.0	114.8	
Fall Term Undergrad. SCH	C D	7,600 7,600 446,769	101 101 97	98 98 100	108 108 100	113 113 101	Teaching Staff Salaries	D U	694,457 44,817,224	141 152	138 139	124 120	117 114	
Fall Term Graduate SCH	D C U	462 1,242 80,613	342 272 111	347 311 116	173 201 108	271 203 81	Other Personnel Costs	D C U	175,883 10,084,030	254 203	220 180	191 151	166 171 147	
Fall Term FTE Students	D C U	545.17 610.17 36,773.09	106 113 100	103 113 105	109 114 102	116 119 99	Maintenance Operation & Equipment	D C U	24,840 2,983,080	168 167	146 141	116 117	103 116 120	
Resident Instruction Budget/FTE Students	מ ט ט	1,484 1,659	139 156	132 138	117 121	10 4 117	Wholesale Price Index (1971-2=100)				153.1	144.3	122.5	
Fall Term Student/ Faculty Ratio	n C D	16.65 21.22	16.38 23.07	16.60 23.17	17.80 22.84		Avg. FAculty Salaries as \$ of Univ. Averages	P AP aP I	86 96 92 99	82 93 95 88	84 97 98 91	85 96 95 102		
Fall Term Student/ Teaching Staff Ratio	C U	15.44 16.36	13.21 17.54	15.42 17.64	16.50 17.40		≸ Faculty Tenure	D C U	44.0 56.2	46.5 56.5	40.4 54.8			

The Departments of Architecture and Community and Regional Planning were budgeted separately prior to 1974-75.

Office of Policy Analysis Vice Chancellor for Administration

Figure 3: A page from the departmental budget book at the University of Texas at Austin. Reprinted by permission.

		SEM CREDI	T HRS/ ULTY FTE	FACULTY SALARIES/ SEM CREDIT HRS		MAINT & SEM CRED	MAINT & OPER/ SEM CREDIT HRS		UNDS/ IY HRS	% GRAD SCH. Tot sch		/ % TA FTE/ TOT FAC FTE	
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1 ACCOUNTING	73	50.700	158.2% 1	27.69	74.1% 1	1.59	28.4% I	30.96 [7]	60.5% [i I t	5.3% 91	1 32.2X I 1 (4) I 1I	
ACC DUNTING	78		[4] [[9]	[103]	[3]	1 (2)	(93	[(9)	i (1 25.8% I 1 (6) I 11	
13 ACCOUNTING	78	1 779.52 I C 91	141_5%	38.87	71.8% [2.43	50.1% [44.10 [2]	61.3% 1	ī 1	8.0% 2)	1 18.8% I 1 (8) I	
18 ACCOUNTING	78	1 1656.64 1 C 13	0 10 1	((10)	[11] 1	[[1]	[4] [[5]	[11] [1 [[[3]]	
ACC OUNTING	7.8	I 605.36	129.6%	41.23	64.8% 1	0.40	11.5% 1	41.62 [4]	62°0% 1			1	
19 ACC OUNT ING	78		117.6%	38.67 1 1 41	86-6% 1	()	1 2 1	41.71 (3)	74.7% I	ī 1 I (4.8% 4]		
7 ACCOUNTABLEY	73	1 1006.38	169.0% [5]	28.46	70.2% 1	1.20	34.7% 1	30.96 [8]	58.4% I [8]]	i	9.9% 6]	1 40.7% 1	
ACC DUNT ING	78	1 1291.05	177.5%	[20.39 [[12]	66.3%	0.36	21.3% I	21.47 [12]	60,4% [i (7)	1 38.6% I 1 [2] 1	
14 ACCOUNTING	7 B	1 820.53 1 C 71	160.9%	27.56	69.1%	0.87	1 10.95	31.53	1 \$8.92	Î 1 (1	4.6% 03		
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PEER DATA ANALYSIS BY INSTRUCTIONAL GROUP

Figure 4: An example of the peer data exchange conducted by the University of Houston. Reprinted by permission.

Don't Forget the Old Saying about a Picture Being Worth 1,000 Words

While some decision makers like data in tabular form, others prefer a pictorial or graphic presentation. Regardless of preference, however, the advances in graphic display capabilities and other means of pictorial depiction have opened new possibilities to the institutional researcher. Many members of boards of regents have experience in the corporate world where they are richly supplied with both numerical and visual portrayal of information. The successful institutional researcher will provide a mix of presentations, not only to match the preferences of those being served but to provide the sort of balance that catches attention.

While the KISS Principle, its corollaries, and companion rules make good sense, they do exact a price. They require an extra investment of effort and consideration throughout the analytical process. This extra effort, which can only be made by the director or key staff, may delay the presentation of findings. It cannot be left to technicians or to those without the necessary synthesizing and communication skills or those who lack comprehensive knowledge of the entire problem.

Given the conflicting demands on institutional research offices, one must ask the question, "Who has the time?" The answer is just as simple:

You Must Make Time

The fact is that you can ill afford not to make time to do the

FEEDER COLLEGE ANALYSIS: AN UPDATE

Ьv

Robert E. Cannon

This study examined the types and geographic locations of institutions attended by the faculty of Georgia State University.

The purpose of this study was to investigate the faculty recruitment patterns and provide a feeder college analysis to serve several objectives: a source of information for academic planning and to meet the requirements of the Seltudy, as well as <u>Higher Education Quidelines</u> with regard to the Affirmative Action Plan. This study is an update to Feeder College Analysis for the 1972-

The highest earned degrees of the 1975-76 full-time faculty members were analyzed by number from institutions and states and were presented by total, schools, and organizational areas of Georgia State University.

- 190 different institutions in the United States and Europe have granted highest earned degrees to the faculty.
- Institutions located in 43 states are represented on the faculty. Georgia, North Carolina, New York, and Florida were the states with the largest numbers.
- The twelve southern states account for 53% of the highest earned degrees of the total faculty.
- These institutions conferred the highest degree to fifteen or more of the full-time teaching faculty: Duke University, Emory University, University of Plorida, Georgia State University, University of Georgia, University of Towa, University of North Carolina, Ohio State University, and Purdue University.

Distribution: Provost, Vice President for Academic Affairs, Academic Deans, Department Heads and appropriate Self-Study Chairmen.

July, 1976

Report No. 77-1

Figure 5: Sample page from a book of abstracts prepared at Georgia State University. Reprinted by permission.

job right. Many outstanding pieces of analysis have been ineffective because these lessons were not learned. Given scarce resources, no institutional research, policy analysis, or planning office can afford to have its work ignored or to create less than its maximum impact. Moreover, the growth of distributed data systems and more decentralized analysis is likely to increase, not diminish, the need for effective presentation. While institutional researchers at all levels must be aware of these problems, it is the special responsibility of the director to continually consider ways to maximize the impact of analysis—guided by the tenets which are suggested here. Only the director has the experience, perspective, and "clout" to apply the techniques of Triage to the art of institutional research.

Take another look at the earlier "portrait" of our academic administrator. If you follow the maxims outlined here, you might just see a smile of approval show on that otherwise troubled face.

The AIR Professional File is published by the Association for Institutional Research, 314 Stone Building, Florida State University, Tallahassee, FL 32306 up to four times per year. The 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 editor for the first sixteen issues has been Richard R. Perry, Associate Vice President for Academic Affairs. The University of Toledo, 2801 W. Bancroft, Toledo, OH 43606. Effective with issue No. 17, the editor will be Gerald W. McLaughlin, Associate Director of Institutional Research, Virginia Polytechnic Institute and State University, 128 Smyth Hall, Blacksburg, VA 24061.

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