

## Perspectives of the Editor

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### ATTRIBUTES OF EXEMPLARY RESEARCH MANUSCRIPTS EMPLOYING QUANTITATIVE ANALYSES

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Seven attributes that I think distinguish exemplary from other manuscripts that use quantitative research methods are discussed in this article. The attributes have evolved in unknown ways as a result of my experiences as a doctoral student, contributor to the literature, and service as an editor of scholarly publications. My hope is that the suggestions provided herein will be of use to graduate students and junior scholars as they prepare manuscripts for publication consideration.

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**KEY WORDS:** theory; methodology; measurement; effect size; applied research; scholarly research.

What follows represents my thoughts that have been formed over the past three decades of contributing to the higher education research literature and approximately two decades of experience as editor of *The Review of Higher Education* (1980–1986), *Research in Higher Education* (1990 to present), and *Higher Education: Handbook of Theory and Research* (1985 to present). It is impossible to discern the origins of my thoughts. Many of them come from my experiences as a graduate student and the invaluable opportunity to work under the guidance of Dr. Charles F. “Chuck” Elton. No one has contributed more to my professional career than Chuck. He, more than anyone, influenced me in terms of my present fondness for theory-based research. In addition, he shaped my appreciation for scholarship and changed me from an aspiring administrator who feared numbers into a “numbers cruncher.” My experiences as an active scholar no doubt have contributed to the thoughts that follow. One cannot read and write research articles for 30

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plus years without being influenced by what you read (and appreciate) and what you write (and take pride in). Finally, my experiences as an editor have exposed me to the writings of literally hundreds (maybe thousands) of scholars. I have made judgments about the publication merits of submitted manuscripts for over two decades. My judgments have been informed by the distinguished individuals who have served as Consulting Editors of the two journals and as Associate Editors of the *Handbook*. The thoughts that follow have been influenced heavily by these individuals and by my interactions with contributing authors of these three publications. While indebted to these many individuals, the frailties of what follows are solely my responsibility.

### EXEMPLARY MANUSCRIPTS EXHIBIT BALANCE AMONG SECTIONS OF THE MANUSCRIPT

I recall Chuck Elton telling me that a manuscript should be approximately one-third introduction and literature review, one-third research procedures and findings, and one-third discussion and implications. Such guidance seems absurdly simplistic on the surface. Yet, I commonly receive manuscripts where such balance is not evident, and they almost uniformly are examples of weak research. The most common examples of this take either of two forms. The first includes manuscripts that have a weak grounding in the germane research literature. The origins of such manuscripts appear to be the availability of an interesting, sometimes even exciting, dataset and the authors rush to the analyses of their data and far reaching conclusions without being informed of extant knowledge on the topic. The second form of such “unbalanced” manuscripts are those that have substantial grounding in the germane literature and a plethora of analyses and findings, but very little in terms of discussion and implications. It is not uncommon to receive manuscripts that have 12–15 pages of introduction and literature review, a similar number of pages describing research procedures and findings, and only two to three pages of discussion and implications. I am led to conclude that such manuscripts have little to offer in terms of advancing the development of knowledge or informing institutional policy given the paucity of discussion of their implications for scholars or policy makers.

Why is such balance among the sections of a manuscript important, and what does this seemingly simplistic advice I was given mean in terms of the knowledge and skills necessary to conduct exemplary research? Such balance is important because of the inter-related nature of the essential components of exemplary research. Authors must establish the importance of their topics and their knowledge of prior

research on the topics in the introductory and literature review section. This is essential to capture the interest of readers and to establish the credibility of the author's knowledge in those domains. Furthermore, one cannot evaluate the research procedures to be employed devoid of knowledge of the fundamental theoretical and methodological paradigms that have guided previous research on the topics. Similarly, one cannot evaluate the meaningfulness or importance of the research findings without having first developed confidence that the research procedures employed are proper manifestations of the fundamental theoretical and methodological paradigms that have guided previous research on the topics. And finally, authors cannot discuss the implications of their findings for either future research or for practice without having fully set forth the importance and fundamental nature of the topic being investigated in the introductory portion of the manuscript and the state of our knowledge in the literature review section.

These multiple sections of a typical manuscript require a diverse array of scholarly talents that prospective authors must possess in order to conduct exemplary research. This notion reminds me of the three "forms of organizational intelligence" proposed by Pat Terenzini (1993) for institutional researchers: issues intelligence, technical/analytical intelligence, and contextual intelligence. In the context of scholarly studies, I equate issues intelligence with the ability to select and describe the complexity of important topics facing scholars and policy makers and the state of current knowledge about those topics (i.e., the introduction and literature review). Technical/analytical intelligence represents skills associated with sampling design, research design, measurement, statistics, and the proper reporting of research evidence obtained (i.e., research procedures and results). Finally, contextual intelligence encompasses familiarity with and the ability to synthesis and to integrate the findings obtained from the present investigation within the context of existing knowledge (i.e., discussion and implications).

What is of importance here is the need for scholars to possess all of these multiple competencies. Terenzini (1993) notes, for example, that issue intelligence by itself "is content without processes and questions without the tools to answer them" and technical/analytical intelligence by itself "consists of process without content and answers without questions" (p. 5). Among the three forms of intelligence, Terenzini suggests that contextual intelligence (familiarity with and the ability to synthesis and integrate extant knowledge of the topic) is the most important in that "it is the crowning form of organizational intelligence" and "it is the form of intelligence that earns . . . researchers legitimacy,

trust, and respect” (p. 6). Exemplary manuscripts earn our trust and respect by their balanced attention to these three fundamental components of research manuscripts.

## EXEMPLARY MANUSCRIPTS ARE THOROUGHLY GROUNDED IN THE APPROPRIATE RESEARCH LITERATURE

Perhaps the central feature that distinguishes between exemplary and ordinary research manuscripts is that the former is thoroughly grounded in the appropriate research literature. The first thing I look at when I receive a manuscript for publication consideration is the reference list. The importance of this grounding in the extant literature is due simply to the fact that the cited literature represents the intellectual heritage or foundation of the current study. The importance of the cited literature is at least twofold in that it informs the present study in terms of both substance and methodology (Light, Singer, and Willett, 1990). The substance includes commonly used theoretical frameworks, the constructs included in them, and the accumulated knowledge that has been acquired from previous studies. Methodological guidance is provided in terms of the measurement of constructs included in the study and the analytical procedures most commonly used in previous studies. Studies that are not fully grounded in the appropriate research literature lack this substantive and methodological guidance, and are much less likely to be of high quality. In the current vernacular, “you can’t make a silk purse out of a sow’s ear.”

The central importance of full grounding in the appropriate research literature is also predicated on one’s philosophy about how systematic, accumulative knowledge is acquired. My perspective about this is that no single study proves anything. Rather, the findings from individual studies simply provide additional evidence about the topic under investigation. Systematic, accumulative knowledge emerges over time based on the collective evidence provided by literally hundreds of studies. The purpose of undertaking research is fundamentally to contribute to the accumulation of systematic knowledge of a topic. Given this perspective, it is absolutely essential that a study be grounded in and contributes to the best examples of previous research on the topic.

The central importance of grounding a study in the best examples of previous research on the topic requires comprehensive and thorough knowledge of that literature. This is not especially difficult in the higher education research literature given the relatively small size of higher education as a field of scholarly inquiry. What I find to be particularly attractive in a manuscript are references to germane studies in other

academic disciplines. Scholars from other disciplines created higher education as a field of study and our literature was initially comprised predominantly of contributions that attempted to inform discussions of perplexing problems facing the academic community based on the theoretical and methodological paradigms of other disciplines. Even today there is a strong recognition of the advantages of interdisciplinary teaching and scholarship. Furthermore, higher education *per se* has few if any inherent theories or conceptual frameworks. All this leads to my enthusiasm about manuscripts that seek to bring the best examples of theoretical and methodological paradigms of other disciplines to important topics on the higher education research agenda.

## Two Cautions

### *Substantive Caution*

While I find the use of theories and conceptual frameworks from other disciplines to be an attractive feature of manuscripts, there are numerous instances in which authors seem to use them in inappropriate or incomplete ways. This is often evident in what I would characterize as the superficial application of those theories and conceptual frameworks. It sometimes appears that authors are trying to “dress up,” justify, or rationalize the legitimacy of common constructs in the conventional higher education literature by equating them with “more lofty” constructs in theories from other academic disciplines. For example, several authors have attempted to use Pierre Bourdieu’s theory of social and cultural reproduction (see Bieber, 1999 for a full discussion of the theory) to examine the extent to which colleges and universities contribute to the social mobility and learning of students. His theory postulates that education serves as a mechanism to perpetuate existing social class distinctions and the inequitable distribution of economic, cultural, and symbolic capital existing in a society. This seems to be an exciting possibility on the surface, given the stature of his theory and its conceptual appropriateness in addressing the complex issue of whether colleges and universities contribute to the social mobility and learning of students. Yet, all too often his theory is used to justify the inclusion of customary components of socioeconomic status in studies (e.g., family income, parental educational levels, etc.). Surely, Bourdieu’s theory is more intellectually rich in terms of the depth of meaning of economic, cultural, and symbolic capital, the interrelationships among these components of his theory, and their individual and collective influences on students’ social mobility and learning. Authors who use theories from other academic

disciplines in such a trite and superficial manner damage their credibility with knowledgeable readers.

### *Methodological Caution*

The principal theme here is that use of the most recent and sophisticated analytical procedures is not necessarily the best approach. Oftentimes I think manuscripts are too heavily into methodology and too weakly into substance. The method must be appropriate for the question(s) of the study and the author(s) must have full and complete knowledge of the assumptions and complexity of the analytical procedures used. The rush to utilize the most recent analytical procedure is often premature in that the author does not have full command of the fundamental nature and assumptions of the procedure. This again will diminish the credibility of the author.

The rush to use the most recent analytical innovation seems predicated on the assumption that such procedures might well yield substantively different findings from the consensus in the extant research literature. With the possible exception of the growing use of path analysis or causal modeling procedures to explore the indirect and total effects of variables, I am not aware of where the use of new analytical procedures has resulted in substantially different results. Many scholars embraced LISREL (Joreskog and Sorbom, 1984) in the 1980s and the literature soon became replete with its application to issues before the academic community for many years. The consequences are at least twofold. First, there are numerous instances in the literature where these procedures have been misused. The rush to use LISREL preceded authors' full and complete knowledge of the complexity and assumptions that underlie the use of these procedures. Second, the collective findings from such studies have certainly not reshaped the previous findings using more conventional analytical procedures. Now the rush is to use hierarchical linear modeling procedures (HLM) (Ethington, 1997). Again, we find many examples of the misuse of HLM, and, though it is much too early to reach anything approaching a definitive conclusion, the results obtained thus far from the use of HLM have not suggested any dramatically different conclusions from those based on the use of more conventional analytical procedures.

My concern is not with the appropriateness of new methodological advances such as LISREL or HLM, for when applied appropriately they have much potential to strengthen our knowledge base. They need not produce radically different findings. Our knowledge base is strengthened if the proper application of such procedures simply confirms existing finding. My concern is with the "user friendliness" of many of the computer

programs for these new innovations that enable under-prepared users to employ them. Very substantial mathematical and statistical training is essential in order to properly utilize the newer genre of methodological advances, and I fear that our rush to be current precedes our training and preparation. Unless fully prepared, authors would be best advised to utilize traditional analytical procedures.

## EXEMPLARY MANUSCRIPTS ARE BASED ON THEORY

The benefits of theory-based research are derived from the essential nature of sound theories. Kerlinger (1986), for example, defines a theory as “a set of interrelated constructs (concepts), definitions, and propositions that present a systematic view of phenomena by specifying relations among variables, with the purpose of explaining and predicting the phenomena” (p. 9). Walsh (1973) suggests that sound theories possess five common characteristics: (1) comprehensiveness—they make predictions about a diverse array of behaviors; (2) clarity and explicitness—their assumptions and concepts are clearly, precisely, and explicitly stated; (3) inclusion of known findings—they incorporate extant empirical findings within a logical and consistent framework; (4) parsimony—they are communicable and understandable, and do not over explain phenomena; and (5) generate empirical research—they have a developmental effect on relevant areas of research.

Many benefits can be derived from the salient characteristics of sound theories suggested by Walsh (1973) and Kerlinger’s, (1986) definition. Let me suggest but three benefits of theories. First, they bring order to our quest to understand a phenomenon by identifying the important constructs to be used in our inquiries and the hypothesized relationships among those constructs. They essentially provide a roadmap for prospective researchers by identifying the important variables to be included in studies and the hypothesized relationships among those variables. Second, they contribute to the accumulation of systematic knowledge about a phenomenon because they incorporate extant empirical findings within a logical and consistent framework. Related to this is the fact that theory-based research facilitates literature syntheses because it fosters greater consistency in the research designs of studies and thus contributes to a more coherent line of inquiry. Finally, sound theories have a developmental function in that they generate empirical research on the phenomenon because of the coherence they bring to inquiries. Scholarly interest in the phenomenon is enhanced by the simple fact that they offer a coherent potential answer to important issues facing the academic community.

Reliance on sound theories is a rare attribute of higher education research manuscripts. The infrequency of theory-based research in higher education is perhaps a function of the dearth of “higher education” theories and the reluctance among some of us to draw upon theories of other disciplines. A possible exception to my perspective that there are few if any higher education theories is Tinto’s theory of voluntary college student departure. I consider it to be one of the most valuable contributions to our literature during my career that now spans some three decades. The benefits of theory-based research are clearly evident in the literally hundreds of studies that examine factors contributing to students’ voluntary decisions to persist or dropout of college based on that theory. It has clearly brought order to our efforts by focusing attention on important constructs, contributed to the accumulation of systematic knowledge about the phenomenon (see, for example, Braxton, Sullivan, and Johnson, 1997), and generated extensive empirical research on the factors influencing students’ voluntary decisions to persist or withdraw from college.

I also notice reluctance among some of my colleagues to draw upon theories from other academic disciplines in their efforts to understand important higher education phenomena. This is an especially troubling development if there is any validity to my perspective given the history of higher education as a field of study. Our field was founded by and prospered as a result of the invaluable contributions of scholars whose academic preparation was in the basic academic disciplines. Among our distinguished forebears are Howard Bowen (economics), Bob Pace and Bill McKeachie (psychology), and Bob Clark (sociology). These individuals are but a few of the many examples of scholars from the basic disciplines that were instrumental in the founding and early advancement of the field of higher education.

But times have changed, and we currently have our own doctoral programs populated to a large extent by faculty members whose academic preparation has been in these very same higher education doctoral programs. The focus seems to be more toward the development of our own distinct intellectual heritage and less toward reliance on the intellectual traditions of the more mature and advanced academic disciplines. I often hear comments that not only are colleges and universities a unique type of organization (and thus what works in other organizational entities—corporate, public sectors—is not germane), but that different types of colleges and universities (e.g., research universities, community colleges) and different types of students (e.g., majority, minority) are also unique and need their own distinctive forms of inquiry. These are examples that lead me to be concerned about a growing intellectual insularity in the study of higher education.



There are, fortunately, a number of excellent exceptions to this trend. For example, the contributors to Braxton's (2000) edited volume on student departure rely on theories and empirical research findings from economics, psychology, sociology, and other disciplines to guide their suggestions for the revision of Tinto's theory. The collective works of Kim Cameron (see, for example, Cameron, 1986; Cameron and Ettington, 1988; Cameron and Whetten, 1996) illustrate how important theories and constructs from the organizational theory and behavior literature can contribute to our understanding of the factors that influence the organizational effectiveness and quality of colleges and universities.

Walsh (1973) noted that a common element in most definitions of theory is seeing theory as "a device that enables us to recognize the relationships among facts" (p. 5), and thus theory development grows from our need to make sense out of life. The field of higher education clearly needs assistance in making sense of the empirical findings in our growing and disjointed literature. Exemplary manuscripts help us to make sense of the phenomena they explore through their genuine reliance on theory.

## EXEMPLARY MANUSCRIPTS ARE ATTENTIVE TO MEASUREMENT ISSUES

One of my primary concerns about the higher education research literature is the virtual absence of measures of salient constructs that have demonstrated psychometric merit, most notably their validity. The literature is replete with instances where authors expound on the value of selected constructs in terms of their potential to address salient issues facing higher education. Let me give a couple examples of this concern. First, Tinto's (1975, 1993) theory proposes that students' "integration" into the academic and social systems of their institutions is an important factor associated with their voluntary decisions to persist or dropout of higher education. His theory has been the basis for literally hundreds of studies of student persistence. Yet there has never been a serious effort to develop psychologically reliable and valid measures of students' academic and social integration, with one possible exception (Pascarella and Terenzini, 1980). It is little wonder that literature reviews of empirical studies grounded in Tinto's theory report relatively weak support for the hypothesized effects of these salient constructs (see, for example, Braxton et al., 1997). Why should there be consistency in empirical findings when they are based on measures that lack established validity? In fact, there are no psychometrically valid measures of any constructs included in Tinto's theoretical model! Astin's (1984) "theory

of involvement” is another example where a potentially important construct is lacking in terms of reliable and valid measures. This deficiency, however, has not inhibited its widespread use in studies of college student development.

My concern here is certainly not with either Tinto or Astin for they have proposed intuitively appealing constructs and models to guide researchers in their quest to understand the factors that influence student development during the college years. There is no compelling reason to assume that those who develop intuitively appealing theoretical models have an obligation to develop psychometrically sound measures of constructs in their models. Theoretical insight and measurement skills are decidedly different forms of talent that rarely reside in a single individual.

Such examples are the basis for my contention that the lack of attention to measurement issues is one of the major deficiencies in the higher education research literature. We know most of the important problems that beset American higher education and have a genuine desire to address those issues. But in the rush to provide “evidence” to advance knowledge and to respond to the needs of policy makers, we often ignore critical issues associated with the quality of the data we bring to bear on those issues. This is a serious problem in that it impedes progress in our efforts to develop consistency of findings in our accumulative knowledge base, and such lack of progress diminishes the credibility of our collective efforts in the eyes of scholars in more developed academic disciplines and policy makers who need assistance in addressing important policy issues.

Exemplary manuscripts are exceptions to this common practice in that they use measures that have established psychometric merit, and they provide evidence of the reliability and validity of those measures. Such attributes are rarely evident in the higher education research literature.

A rare example of where a single individual possesses both theoretical insight and strong measurement skills is C. Robert Pace and his efforts concerning the quality of student effort as a central construct in understanding college student development. Pace has set forth both a model (1979) to guide researchers in their efforts to explore student development and research instruments (*College Student Experiences Questionnaire, Community College Students Experiences Questionnaire*) with psychometrically sound measures of multiple dimensions of the quality of student effort (Ethington and Polizzi, 1996; Friedlander, Pace, and Lehman, 1990; Pace, 1987). I regard the efforts of Pace as among the most distinctive and outstanding of any contributions to our literature because they manifest both theoretical insight and exemplary measures of salient constructs.

## EXEMPLARY MANUSCRIPTS REPORT COMPLETE RESULTS OF STATISTICAL ANALYSES

It is an accepted practice that research manuscripts should report evidence that permits others to reproduce their results. This accepted tradition requires the reporting of certain essential information commonly included in the Results section of a manuscript. At a minimum, this requires authors to report the means and standard deviations of all variables included in their analyses, as well as the correlations among those variables. This may seem like a rather mundane stipulation, but there have been occasions in the manuscript review process where highly competent and conscientious reviewers have been unable to reproduce the results presented in submitted manuscripts, and these laudable efforts of reviewers have surfaced both substantive (i.e., blatant mistakes) and typographical (i.e., typos in the correlation matrix or actual results) errors in manuscripts. Exemplary manuscripts not only report such obligatory information, but also fully report information about the overall quality of their data. By this I mean that they probe for outliers (i.e., influential data points) and make certain that their data satisfy the basic assumptions of whatever statistical procedures they use. Such attention to the quality of data contributes to the credibility of the authors by assuring readers that they have been attentive to fundamental analytical requirements.

The growing use of large multipurpose and multi-institutional datasets has also permitted researchers to incorporate a large number of variables in their studies. We seem to have an aversion to “throwing away data,” whether it is individuals or variables. The prevailing wisdom seems to be to throw as much data as possible at the topic under investigation. Adherence to this prevailing wisdom reveals one definite theoretical or conceptual weakness in manuscripts and introduces a second serious methodological concern.

*Parsimony* is an attribute of sound theories (Walsh, 1973) and, I think, of exemplary research manuscripts. It is not at all uncommon to see manuscripts that report results derived from the use of 30 or more predictor variables in a regression analysis. The presence of such a large number of variables is clearly evidence that the study is not guided by a sound theory given Walsh’s definition. Furthermore, it is indicative of the authors’ failure to distinguish between the clearly important and the less meaningful variables that have been found to be statistically significant explanatory variables in the existing research literature, and to build a conceptual framework for their study that incorporates the important known predictors of the phenomenon under investigation. Exemplary manuscripts avoid such problems by being grounded in the premises of

either a sound theory or a conceptual framework that includes only the major explanatory variables derived from a review of extant empirical evidence. Parsimony is an attribute of exemplary research manuscripts.

The presence of acute *multicollinearity* among independent variables in regression analyses precludes any meaningful interpretation of results since the regression coefficients are highly unstable in the presence of this condition (Ethington, Thomas, and Pike, 2002). The inclusion of 30 (or more) predictors in such analyses presumes that they are conceptually and statistically independent. Can you think of 30 (or more) characteristics of people or institutions that are conceptually independent? Exemplary manuscripts, as noted above, do not include an unreasonable number of predictor variables because they are grounded in the premises of either a sound theory or conceptual framework. Furthermore, they provide evidence (e.g., tolerance and VIF diagnostic statistics) that their results are not contaminated by a presence of serious multicollinearity among whatever number of independent variables are included in their design.

### EXEMPLARY MANUSCRIPTS DISTINGUISH BETWEEN THE STATISTICAL AND THE PRACTICAL SIGNIFICANCE OF THEIR FINDINGS

Quantitative research in higher education is increasingly based on large multipurpose and multi-institutional datasets. The size of the sample *per se* is not a problem. In fact, the increasing size of datasets is a great benefit because it permits more probing and fine-grained analyses. An example of this is that they permit investigators to explore the possibilities of conditional effects and, if present, to conduct analyses for different kinds of students (e.g., males, females) or institutions (e.g., public, private). It is not uncommon today to receive manuscripts based on sample sizes of 5000–50,000 students. There are even occasional submissions based on samples that exceed 100,000.

The potential problem in instances of very large samples is the simple fact that statistical significance is in large part a function of sample size. It is very possible, for example, for a variable to be highly significant, in statistical terms, when a study is based on 2500 students, but to be statistically non-significant if the sample were 250. The challenge to the researcher is to intelligently discern between statistical significance on the one hand and practical significance on the other. By practical significance I mean the substantive importance of findings. Exemplary manuscripts exhibit this trait.

This is not a new phenomenon or problem. Pedhazur (1982), for example, recognized this distinction two decades ago and suggested that

variables in regression studies with beta weights of 0.05 or less, regardless of their level of statistical significance, have little substantive meaning in terms of practice and policy. Contemporary evidence of the need to be sensitive to the distinction between statistical and practical significance is evident in the growing movement of social science journals to require authors to report and interpret effect size indices which, in studies using ANOVA designs, reflect how much, on average, groups differ in terms of some type of standardized unit of variability (e.g., standard deviation units). Effect size indices are by no means new. The early works of Fisher (1925) to develop eta squared and Kelley (1935) to develop epsilon squared are but two examples that the need of researchers to distinguish between statistical and practical significance has a long history.

Contemporary sensitivity to the need to go beyond the reporting of customary tests of statistical significance is clearly evident in the most recent edition of the *Publication Manual of the American Psychological Association* (APA) (2001) which emphasizes that “it is *almost always* necessary to include some index of effect size or strength of relationship in your Results section” (pp. 25–26, emphasis added) and the APA Task Force on Statistical Inference (TFSI) which urges researchers to “*Always* provide some effect-size estimate when reporting a *p*-value” (Wilkinson and APA Task Force on Statistical Inference, 1999, p. 599, emphasis added). This sensitivity is also evident in the fact that over two dozen reputable social science journals have recently adopted editorial policies requiring authors of manuscripts to report and interpret their findings in terms of an effect size index. The contributions of Kirk (1996), Olejnik and Algina (2000), Snyder and Lawson (1993), and Thompson (2002) provide excellent guidance to authors in terms of computing and reporting effect sizes in their manuscripts.

Exemplary manuscripts reflect this awareness that statistical and practical significance are often very different. They do so in both statistical and substantive ways. Statistically, they commonly report effect size estimates and interpret the importance of their findings in light of these estimates. In a more substantive manner, authors of exemplary manuscripts demonstrate awareness that not every instance of statistical significance has important practical or policy implications. This awareness is clearly evident in a number of ways. For example, they might overtly acknowledge and then dismiss some statistically significant findings as having little or no practical value or they make clear and meaningful distinctions in terms of the practical or substantive importance of those variables found to be statistically significant. Unfortunately, such practices are too rare, and most of us proceed to make a mountain out of a molehill by overly emphasizing the substantive importance of variables in

our studies that have satisfied some “marginal” level of statistical significance.

## EXEMPLARY MANUSCRIPTS HAVE IMPORTANT IMPLICATIONS FOR BOTH FUTURE RESEARCH *AND* CURRENT PRACTICE AND POLICY

I have never accepted the notion that there are fundamental differences between pure and applied forms of research. Good research is good research, irrespective of whether the intended audience is the scholarly community, institutional administrators, or policy analysts. My career began in an institutional research office and subsequently as an administrator in a Graduate School and a Provost's Office. My perspective during those early years was that I would not want to make a multi-million dollar decision on the basis of results that were not worthy of publication in a respectable academic journal. The editorial review process is intended to assure the adequacy of studies in terms of whether they bring the best evidence to bear on important topics and whether their findings are properly derived from the use of appropriate analytical methods. Why would one want to make a multi-million dollar decision based on data that do not contain adequate measures (e.g., lacking important predictors based on extant knowledge or poorly measured) or that are improperly analyzed? I could never answer that question in a satisfactory manner then, nor can I now.

This perspective is the basis of my belief that exemplary manuscripts are equally attentive to their joint responsibility to contribute to (1) the improvement of institutional practices and policy formulation and (2) the advancement of knowledge. Both of these objectives are satisfied by the attributes of exemplary manuscripts discussed above. First and foremost is the necessity to select a topic of importance to both the academic community and to institutional administrators. The justification of the importance of the problem may be established using both the customary scholarly literature (i.e., academic journals) as well as more contemporary and policy oriented publications (i.e., *The Chronicle of Higher Education*). Bringing the best evidence to bear on an important topic of mutual interest to the academic community and to institutional administrators requires a thorough review of the research literature to discern the important explanatory constructs and expertise in measurement to assure that measures of these constructs have sufficient psychometric merit. The proper analysis and reporting of data requires technical knowledge in the areas of research design and statistical analyses. Exemplary manuscripts exhibit these attributes and fully discuss how

their findings contribute to our current knowledge base and the implications of those findings in terms of guidance for future research on the topic and to the improvement of prevailing institutional practices and policies.

## A PERSONAL CONFESSION AND CONCLUDING THOUGHTS

I trust that there are some merits to the preceding thoughts and that they do not appear to be too pompous. Reflecting on the preceding comments has induced considerable humility since few of my own contributions to the literature satisfy the lofty attributes presented above. Nonetheless, I fully believe that these attributes reflect what we should try to achieve in our contributions, recognizing, of course, that we will seldom satisfy all of them.

My primary concluding thought from all of the above is that we need to “slow down” in terms of generating more studies of the current genre, and to focus our attention more fully on producing manuscripts that truly manifest the attributes of exemplary scholarship. Most especially, I think, our field needs greater attention to theory development and to the development of psychometrically sound measurement instruments. I regard the lack of attention to theory, whether from higher education or other academic disciplines, and reliance on psychometrically unproven measures of important constructs as two of the major impediments to the maturation of higher education as a respected field of scholarly inquiry. Our credibility with our academic colleagues and with institutional and governmental officials is contingent on the quality of our ideas and our data.

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