The Validity and Limitations of College Student Self-Report Data

New Directions for Institutional Research
Serge Herzog and Nicholas A. Bowman, Issue Editors

Editors’ Notes

Serge Herzog and Nicholas A. Bowman

We briefly introduce the state of research on the validity and biases in college student self-report data. We argue that this topic is of critical importance for institutional researchers and other higher education constituents: Almost all research on college student learning and development relies upon student self-reports, yet surprisingly few studies have explored the extent to which this data is accurate. To help fill this gap in the literature, our proposed volume contains seven empirical studies, the majority of which examine aspects of college student self-reported gains. Chapters 1 and 2 compare the self-reported gains of college students and recent alumni with objective data on corresponding constructs. In contrast with the expected findings from the first two chapters, Chapter 3 illustrates some patterns in college student self-reported gains that are consistent with theoretical predictions (and thus appear to accurately convey group differences). Chapter 4 explores the relationship between college self-reported gains and high school self-reported gains to determine whether controlling for perceived high school gains may reduce or eliminate certain biases. Chapter 5 further explores potential biases in college self-reported gains (particularly those associated with social desirability and high school self-reported gains), along with how these biases might vary depending upon students' year in college. Chapter 6 proposes a conceptualization of the meaning of college student self-reported gains and offers empirical support for this assertion. Chapter 7 addresses another understudied issue in self-report data by assessing the validity of a common form of college student engagement. Finally, Chapter 8 synthesizes these findings, provides recommendations for institutional researchers, and offers directions for future research.

Chapter 1: Construct Validity and Systematic Errors in College Student Self-Reported Gains

Nicholas A. Bowman, University of Notre Dame

A growing body of research has questioned the validity of college student self-reported gains and identified several biases in these measures. The current study builds upon this literature by analyzing a longitudinal dataset of more than 8,600 first-year students at 49 colleges and universities. First, the correspondence between self-reported gains in several non-cognitive and cognitive domains (e.g., critical thinking) and longitudinal changes on well-established measures of the corresponding constructs (e.g., critical thinking exams) will be examined. Second, hierarchical linear modeling analyses will be conducted to determine whether the use of self-reported gains leads to biased conclusions across a diverse set of outcomes; for example, self-report measures may
generally overestimate liberal arts students’ gains relative to those of students at other institutions. These findings will have important implications for the use of self-reported gains for examining college student growth within and across institutions.

Chapter 2: Gauging Academic Growth of Bachelor Degree Recipients Using Alumni Survey Data

Serge Herzog, University of Nevada-Reno

Colleges typically rely on student self-reported data from large-scale surveys to determine the extent of learning and skill development that has occurred. But how well does the subjective assessment of students correspond with longitudinal changes on standardized tests and classroom grades? To answer this question, this chapter examines the correlation between student ratings on an alumni survey of how college impacted their abilities and skills (across specific academic domains), and longitudinal changes in test scores and grades. Secondly, the influence of covariates capturing student background and undergraduate experience (e.g., field of study, study abroad, internships, time-to-degree, sociodemographics) is measured via regression models to determine if the relationship between self-reported and longitudinal indicators remains constant net of the other variables. The study uses data on over 10,000 bachelor degree recipients at a moderately selective public university and examines the academic experience of students at the beginning of college and after degree completion.

Chapter 3: Using Self-Report Data in Scholarly Research

Gary Pike, Indiana University-Purdue University Indianapolis

There has been growing concern regarding the validity of students’ self-reports about their college experiences. As both Messick (1989) and Kane (2006) observed, questions of validity should focus on the accuracy and appropriateness of self-report data for a particular use. In this chapter, I examine the accuracy and appropriateness of using student self-report data in scholarly research. I argue that one of the limitations of previous studies concerning the accuracy and appropriateness of self-report data is that these studies have generally relied on correlations with other measures (e.g., test scores) and have not examined self-report data using well-established theoretical constructs. My research examines the structure of and relationships among student self-reports using Holland’s (1973, 1985, 1997) person-environment fit theory of vocational and educational behavior. The theory sets explicit expectations about gains in learning across disciplinary types, and the results of my research closely match the expectations derived from Holland’s theory.

Chapter 4: The Tie that Binds: The Role of Self-Reported High School Gains in Self-Reported College Gains

Tricia A. Seifert, University of Toronto, and Ashley Asel, University of Iowa
Little research has examined students’ disposition for identifying educational influences on student learning and development. Within college impact research, isolating the effect of a particular college experience or set of experiences from students’ disposition to report educational influences on educational outcomes is critical, particularly in cross-sectional research where a pretest of the outcome measure is not available. This chapter uses data from the Research on the Iowa Student Experience study to examine the extent to which students’ retrospective self-reported gains from high school correlate with college self-reported gains. Based on previous research on self-reported gains, we hypothesize a significant correlation between these measures. We then investigate to what extent estimates of the relationship between college experiences and self-reported college gains differ when parallel retrospective high school self-reported gains are accounted for in the regression model. We conclude with recommendations for institutional researchers conducting college impact research.

Chapter 5: Measuring How College Affects Students: Exploring Potential Biases in College Student Self-Reported Gains

Nicholas A. Bowman, University of Notre Dame, and Patrick L. Hill, University of Illinois

Although many colleges and universities use student self-reported gains to gauge learning and development, the evidence that supports the validity of these measures is limited. The current study examined whether several potential forms of bias (e.g., social desirability bias) are present. Consistent with predictions, multiple biases in perceived college gains are apparent, and these patterns vary substantially depending upon students’ year in school. Among first-year students, self-reported gains are at least moderately correlated with a social desirability index, college satisfaction, life satisfaction, high school self-reported gains, and even a form of narcissism. Most of these relationships are also evident in regression analyses that controlled for potential confounding variables. In contrast, biases are generally weaker or non-existent among more advanced undergraduates. Implications regarding the use of college student self-reported gains and methods to reduce or eliminate bias are discussed.

Chapter 6: Reconceptualizing the Use of Self-Reported Gains in Institutional Assessment

Robert M. Gonyea and Angie Miller, Indiana University

This paper will examine the uses of self-reported gains for assessment of institutional effectiveness, and offer a reconceptualization of such items as measures of perceived learning and growth. Recent studies on the validity of self-reported gains have pointed out correctly that they poorly predict “actual learning,” as measured by standardized tests in related areas. This paper will argue that the validity of the gains items, if results bear this out, should not be viewed as a proxy for learning outcomes measured by standardized or accepted tests, but rather as source of information on student perceptions about – or we might say “satisfaction with” – their own learning experiences in these areas. This paper will draw upon several data sources including the National
Survey of Student Engagement (NSSE), a recent NSSE study on social desirability, cognitive interview data, and data from the Wabash National Study. The chapter will conclude with a summary of the valid uses of self-reported gains in institutional assessment and a caution about invalid uses and interpretations.

Chapter 7: Validity of Student Engagement Survey Questions: Can We Accurately Measure Academic Challenge?

Steven Porter, Iowa State University

Survey data are widely used in higher education for purposes such as assessment and strategic planning. While there is a large literature devoted to response rates, little research has been conducted on the validity of college student survey questions. This chapter describes the results of a validity study looking at questions about academic challenge. We surveyed college students at a large public research university and asked them several questions about academic challenge taken from the National Survey of Student Engagement. We then collected course syllabi from faculty. Comparison of responses from students about the number of books assigned to their courses with the same data taken from the syllabi reveals little relationship between the two. These results, as well as coding problems encountered during the project, suggest that students probably do not understand what is being asked of them in the area of academic challenge.

Chapter 8: Reconciling (Seemingly) Discrepant Findings: Suggestions for IR Practice and Future Research

Nicholas A. Bowman and Serge Herzog

This final chapter synthesizes the chapters within this volume, offering a single theoretical explanation that can account for the apparent divergence of studies on college student self-reported data. Recommendations for the practice of institutional research and for future research on this topic are provided.

Strategy

Plan: Chapters 1-7 will be approximately 20 pages each (or about 5,500 words); the final chapter will be considerably shorter. Timing: January 31, 2011 is the tentative deadline for all chapters except for the Editors' Notes and Conclusion, which will be delivered by February 28, 2011.