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A Researcher's Dilemma: A Comparison of Estimated versus Actual College G.P.A.

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Abstract

This study compared college student reported grade point averages (GPA) with actual GPA as recorded at the Registrar's Office to determine the accuracy of student reported GPA. Results indicated that, on average, students reported slightly higher GPA than their actual GPA.

Additionally, females were virtually as accurate as males and students with high GPA's were more accurate than students with lower GPA's. Since 17% of unexplained variance in actual GPA was found based upon student GPA estimates, the findings support the recommendation that researchers employ the actual GPA recorded in the Registrar's Office whenever possible and feasible.

A Researcher's Dilemma: A Comparison of Estimated versus Actual College GPA

Many researchers have a vested interest in using college/university Grade Point Average (GPA) as a dependent variable in research such as in explorations of program evaluations, admissions decisions, and academic learning studies. Unfortunately, many researchers have consciously chosen to employ student estimations of their own current GPA as a variable in research studies rather than gaining permission from each student to extract actual GPA from the official college records. We wish to ask the following research question: How accurately can college students recall their current GPA?

First and foremost, asking students for self-reported GPA is very easy and expedient during the data collection process. The drawbacks of self-reported GPA lie considerably deeper in the process and retrieval realms. When we consider the fact that students when self-reporting their current GPA must retrieve such information from long-term memory (LTM) and that such a retrieval target as a mathematical value is changing at least somewhat each semester (more so for freshman or sophomores than juniors or seniors), this is obviously an imperfect method of data collection. Asking students for permission to examine the official academic record constitutes new issues of confidentiality and the laborious task of enlisting a third party to collect such information and report the findings to the researcher. The researcher's dilemma essentially lies in deciding whether or not the extra effort is worthwhile in terms of more accurately predicting and measuring outcomes.

Previous research has operationalized college/university GPA in terms of self-reported GPA in some studies and official GPA as recorded in the academic records in other studies.

Research practice is a poor guide to researchers, since there seems to be disagreement regarding how much risk and inaccuracy are assumed when employing self-reported GPA. Although this might seem like a trivial matter to some, oftentimes the important findings in educational research frequently rest upon small measureable differences due to so many intervening variables. Benjamin, McKeachie, Lin, and Holinger (1981) knowingly or unknowingly promoted the use of self report measures when they reported that: “In previous studies we have found that students know and report accurately their grade point average” (p. 818). Even this recommendation forces us to ask questions like: Are there exceptions to this circumstance?

Method

Participants

The current study was designed to shed light on this topic with a relatively large student sample (n=508). The sample constituted approximately 15% of the entire student population on campus that semester at this state-supported liberal arts institution in the northern reaches of New York State.

The data collection procedure for estimated and actual GPA was embedded in a much larger on-line research study that explored student attitudes toward and usage of electronic communication such as instant and text messaging. Respondents (students) completed all survey and demographic information at an Internet site during the Spring Semester of 2008.

A total of 422 participants answered the question related to GPA, but only 334 subjects (66% of the total original sample) provided traceable identification information for their actual GPA values to be confirmed at the Registrar’s Office. Such lack of confirmation was due to missing or incorrect student identification numbers necessary for the retrieval of actual GPA in the college records.

The sample of 344 participants where such confirmation of actual GPA was possible reflected a non-representative gender sample of the actual campus population. The research sample was composed of 28% males and 72% females. The primarily female student portion of the sample (72% of the total sample) failed to match the gender balance of the institutional profile that was 44% males/56% females that semester.

The majority of the participants categorized themselves as Caucasian (89%) which was very similar to the ethnic profile of the institution. Participant age ranged from 18 to 25 with the majority ranging from 19-22 (91%). A total of 67% of the respondents were in their junior or senior year at the time of the survey and 31% were freshmen or sophomores. Graduate students were also a part of the sample.

Measures

Respondents were asked to place their estimated GPA in a box and given the limits of 0.00 and 4.00. They also gave permission for their actual GPA to be collected from the Registrar's Office. All aspects of this study were approved by the Institutional Review Board. The survey format asked students to report their current cumulative GPA without considering transfer GPA, if this was applicable. No more than 3 digits and a decimal point were allowed to be entered in the box. Data entered was saved "as text," that is the digits were not rounded up or down by the computer or the researchers.

Results

The results showed that average estimated GPA (3.17) was found to be slightly higher than average actual GPA. (3.14). This difference was very small, but statistically significant ($t(343)=2.28, p=.023$). A similar trend was found for both males and females in terms of

estimated GPA being slightly higher than actual GPA, but these differences were not found to be statistically significant.

Self-reported (estimated) GPA was positively correlated to actual GPA ($r=.91^{**}$, $p<.01$, $n=344$, 83% of variance explained). Although this relationship was found to be robust and statistically significant, approximately 17% of the variance was still unexplained. The actual GPA variable was split into quartile groups and the higher GPA students were found to be generally more accurate in their estimates than the lower GPA students. For example, the lowest Actual GPA quartile ($r=.57$) and highest Actual GPA quartile ($r=.82$) differed in their ability to accurately estimate their actual GPA. Such results were found to be non-significant based upon the Analysis of Covariance used to test differences of slopes.

Correlational analyses were also conducted separately by gender. The correlation between estimated and actual GPA was found to be nearly identical for females ($r=.91$) and males ($r=.90$). This difference was not found to be statistically significant. Difference scores were calculated (actual GPA – estimated GPA). The question explored was: “Do males and females estimate more or less accurately in the lowest and highest quartile groups of actual GPA?” The quartile split analysis showed an inability to reject the H_0 .

Discussion

Limitations

One major limitation of the study is related to the participant pool of on-line respondents. First, the sample failed to match the gender ratio of the student population from which the sample was drawn. Second, the sample was also not representative of the student population because 34% (roughly one-third of the original on-line sample) were unable to recall or quickly find accurate personal identification information (student ID number) so that the accurate records in the

Registrar's Office could be checked. It seems logical to assume that students who remembered their institutional identification numbers might also be more likely to recall their current GPA.

The data set is skewed in relation to gender with 72% of the respondents being female (16% higher than the actual student population during the study). Past studies include participant pools with more evenly split gender (Brown, Uebelacker & Heatherington, 1998; Crockett, Schulenberg & Petersen, 1987; Gramzow, Elliot, Asher & McGregor, 2002) and with much larger female pools (Cassady, 2001; Herman, 2003; Johnson-Green et al, 1997; Kuncel, Credé & Thomas, 2005). All studies yielded similar results in regards to females being better predictors of GPA. In the current study the majority of respondents were newer students who are known to be statistically the worst predictors of GPA, which also skews the results. Other studies in the literature failed to discuss the class level of participants as a factor in GPA accuracy.

This snapshot study would be strengthened by a follow up study of the same students to increase both validity and reliability. Further research should include racial background, which was gathered here but not examined due to small numbers of respondents participating from diverse racial backgrounds (89% of the participants were Caucasian). Since the sample is dissimilar to the student population of the university campus from which the sample was drawn, it does not easily allow the results to be extended to the university where the data set was collected or to other university populations.

The findings of this study add to the accumulated knowledge in the literature which shows considerable variation in the ability of students to report their personal and current GPA. A previous study (Herman, 2003) that explored this same research question at the same institution employed a paper and pencil format to mark a continuous GPA number line yielded inferior results to the current study ($r=.81^{**}$, $p<.01$, $n=113$, 66% of variance explained). This

study employed a sample of intact student groups in classes. Perhaps the on-line format of the current study being reported had a positive influence on the results.

GPA is a variable frequently gathered by researchers working with in the arena of educational research. While it is still common to simply ask the participant to estimate his or her GPA, this study's findings show that there can be a considerable discrepancy between the actual GPA and the GPA estimated by the student. Therefore the authors advocate the use of actual GPA recorded by the university based upon precision in measurement arguments when time and resources allow. It is rare that researchers have access to a virtually error-free variable such as actual GPA that happens to exist in the Registrar's Office. Using the GPA on the official record through the student's transcript would ensure accurate measurement for at least this variable within a researcher's project. The practice of asking students to provide their institutional identification numbers as employed in this study would seem flawed. A better method of linking respondents to the official records is needed.

The accumulated research findings on this topic suggest considerable volatility in terms of the accuracy of GPA reporting. Some potential intervening variables that seem to interfere with such accuracy are 1) Transfer status, whereby students include GPA from previous institutions; 2) Level of actual current GPA where lower GPA students tend to inflate results based upon social desirability; 3) Gender in which females are shown to be more accurate reporters; and 4) Level in school, which more advanced class status is often, but is not necessarily positively correlated to more accurate reporting.

The larger study from which these data were retrieved examined the academic and social effects of instant communication on college students. The concepts of texting and instant messenger (IM) are specifically studied. Based on the data regarding GPA, several hypothesis

stand out regarding the larger study. Newer students, which make up one third of the participants, grossly overestimate their GPA. As stated in Prohaska (1994), students with lower GPAs are less accurate at self-assessment in relation to academic behaviors.

Conclusion

The authors acknowledge that it is not always possible to confirm GPA due to confidentiality and access to records. This study shows how gender and GPA level of respondents all affect estimated GPA. With so much variation it is advisable for researchers to use confirmed GPA for their studies whenever feasible and possible.

References

- Bahrick, H. P., Hall, L. K., & Berger, S. A. (1996). Accuracy and distortion in memory for high school grades. *Psychological Science*, 7, 265-271.
- Benjamin, M., McKeachie, W. J., Lin, Y. G., & Holinger, D. P. (1981). Test anxiety: Deficits in information processing. *Journal of Educational Psychology*, 73, 816-824.
- Brown, L. B., Uebelacker, L., Heatherington, L. (1998). Men, women, and the self-presentation of achievement. *Sex Roles*, 38, 253-264.
- Cassady, Jerrell C. (2001). Self-reported GPA and SAT: A methodological note. *Practical Assessment, Research & Evaluation*, 7(12),
<http://www.pareonline.net/getvn.asp?v=7&n=12>.
- Crockett, L. J., Schulenberg, J. E., Petersen, A. C. (1987). Congruence between objective and self-report data in a sample of young adolescents. *Journal of Adolescent Research*, 2, 383-392.
- Farnum, N. & Devore, J. (2004). *Applied statistics for engineers and scientists*. Pacific Grove, CA: Brooks/Cole.
- Freeberg, N. E. (1988). *Analysis of the Revised Student Descriptive Questionnaire, Phase I: Accuracy of student reported information*. (College Board Report No. 88-5). New York: College Board Publications.
- Freeberg, N. E., Rock, D. A., & Pollack, J. (1989). *Analysis of the revised Student Descriptive Questionnaire: Phase II predictive validity of academic self-report*. New York: College Entrance Examination Board.
- Gramzow, R. H., Elliot, A. J., Asher, E., & McGregorb, H. A. (2003). Self-evaluation bias and academic performance: Some ways and some reasons why. *Journal of Research in*

Personality, 37, 41–61.

Herman, W. E. (2003, August). *College student awareness of current GPA*. Paper presented at the Annual Convention of the American Psychological Association, Toronto, Ontario, Canada.

Johnson-Greene, D., Dehring, M., Adams, K. M., Miller, T., Arora, S., Beylin, A., et al. (1997). Accuracy of self-reported educational attainment among diverse patient populations: A preliminary investigation. *Archives of Clinical Neuropsychology*, 12, 635-643.

Kuncel, N. R., Credé, M., & Thomas, L. L. (2005). The validity of self-reported grade point averages, class ranks, and test scores: A meta-analysis and review of the literature. *Review of Educational Research*, 75, 63-77.

Miles, J., & Shevlin, M. (2001). *Applying regression and correlation*. London: Sage.

Prohaska, V. (1994). I know I'll get an A: Confident overestimation of final course grades. *Teaching of Psychology*, 21, 141-143.