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What Does GPA in an Urban High School Actually Mean?

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What Does GPA in an Urban High School Actually Mean?

Robbie J. Steward, Martin F. Hill, Douglas M. Neil, Tiffany Pritchett, and Ah-Sha-Ni Wabaunsee

Introduction
The purpose of this researcher-school collaborative study was to examine factors which might be intervenable by urban high school counselors in assisting at-risk students. There were two primary objectives. The first was to examine the degree to which urban adolescents’ academic competence predicts cumulative GPA. The second objective was to examine the relationship between academic preparedness and teacher perceptions of student honorability, where student honorability referred to positive vs. negative classroom behavior. Because of the potential influence of teacher perceptions, high student attrition rates associated with academic failure, the limited population of college bound students within urban settings, and the subsequent potential loss of human capital to general society, this study was specifically limited to an urban high school setting. The authors hope that this study will add to the current body of literature on current grading practices and assist teachers and school counselors in identifying effective interventions.

Background and Rationale
Although mainstream media attention has recently turned to education issues such as grade inflation, researchers in higher education have long acknowledged the importance of examining the construct of K-12 grade point averages (GPA). For example, Gutman, Sameorff, and Cole found that a student’s GPA is significantly and positively affected by mental health interventions. Demoulin and Walsh found GPA was related to students’ personal development and associated positive behaviors, while Stumpf and Stanley found it was also related to college graduation. In addition to these studies of general high school populations, studies of academic performance have included urban high school student populations, which are characterized by heightened exposure to poverty and crime; limited access to positive role models for academic and life success; lower GPAs; and higher absenteeism. For these students, Linnehan found GPA to be significantly and positively correlated with involvement in work-based mentoring programs. Williams and colleagues found GPA correlated with student gender, church attendance, and percentage of relatives completing high school. Powell and Arriola concluded that GPA was related to urban high school students’ methods of handling unfair treatment, while the research of Brown and Jones showed the importance of students having and future orientation.

Although there are a few differences in foci in the most recent study of this population, e.g., church participation, family composition, etc., the commonalities in conclusions drawn from the empirical findings of research examining the general and urban student populations appear to be consistent. Findings can be summarized in the following points: GPA may be positively affected through interventions not directly related to academic competence, e.g., mental health interventions; students who have higher GPAs tend to pursue and graduate from college more so than those who do not; and, students who behave in a socially acceptable manner, e.g., positive behaviors associated with personal development, methods of handling unfair treatment, and a future orientation, are more likely to have higher GPAs than those who do not. This latter association of GPA with student behavior is the primary focus of this article.

Teacher Perceptions of Student Behavior and Academic Success
The powerful influence of teachers’ beliefs about students’ academic propensity is well-supported in the literature. Teachers’ perceptions have not only been associated with students’ current success, but with future success as well. In Alvidrez and Weinstein’s study, children with higher socioeconomic status were judged by teachers to be more academically competent than their actual academic ability based on standardized test scores; and, conversely, lower socioeconomic status (SES) was associated with more negative teacher judgments than standardized test scores indicated. The longitudinal results indicated that preschool teachers’ ratings of student academic aptitude significantly predicted GPA and Scholastic Aptitude Test (SAT) scores 14 years later.

In a study of urban high school students, Hopmeyer-Gorman, Kim, and Schimmelbusch found that low GPA, low submissiveness, and high rates of absenteeism were associated with low teacher preference. DeMoulin and Walsh concluded from their research that GPA was based on teacher perceptions of students’ positive personal development, while Zimmerman and colleagues found a significant relationship between GPA and teachers’ perceptions of student engagement in problem at-risk behaviors.

In Gumora and Arsenic’s study of middle school students, teachers assessed students’ positive and negative moods; and schools provided achievement test results and student grades as measures of cognitive ability/achievement and school performance. Students’ emotion regulation, general affective dispositions, and academic affect were found to be related to each other, and each of these variables made a significant contribution to GPA, over and above the influence of other cognitive contributors. Consequently, grades received were enhanced by student behaviors in the school setting.

Results from these studies suggest that student demographic variables, e.g., family of origin SES, and classroom behavior affect not only teachers’ perceptions, but GPA as well. How teachers define appropriate behaviors may have a significant influence on differential perceptions of students in both general and urban high school populations. However, these perceptions may have even greater negative

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influence within urban communities given teachers’ tendency to report more negative impressions of students from lower SES families.  

**Methods**

**Participants**

Forty-four African American, regular-education freshmen newly enrolled in an urban high school, who had been identified as students most at-risk during middle school, were selected to participate in this study, with parental consent. These students shared the same teachers for four core required courses: English; science; mathematics; and history. The sample was made up of 24 (54%) males and 20 (46%) females, and the mean age was 14.2 years. The high school’s student population of 1,100 is predominantly African American, and the surrounding community, also predominantly African American, has high levels of poverty, unemployment, and crime. Over a five year period, the attrition rate for ninth grade students has ranged from 60% to 75%.17

**Variables and Definitions**

**Grade Point Average (GPA).** GPA was defined as the participants’ cumulative grade point average for the first six weeks of the academic year in core courses: History, English, mathematics, and science. GPA was calculated based on participants’ teacher records.

**Academic Competence.** Academic competence was defined as and measured by reading, spelling, and mathematics scores on an individually administered achievement test, the Wide Range Achievement Test- Revised (WRAT-R). According to Jastak, Wilkinson, and Jastak, the WRAT-R was designed to “measure the codes which are needed to learn the basic skills of reading, spelling, and arithmetic” for populations ages 3-0 (3 years, 0 months) to 11-11 (11 years, 11 months), and 12 to 75 years.18 The overall assessment includes three subscales with individual scores: Reading (recognizing and naming letters and words); spelling (writing symbols, name, and words); and arithmetic (solving oral problems and written computations).19

Students were administered the WRAT-R individually over a three week period.20 This specific measure was selected and the individual mode of assessment was used so that researchers could work with students with whom a relationship had been established and a rapport had been developed. The researchers had found in earlier attempts at small group administration of data collection that students tended not to complete measures or tended to respond randomly without reading items. Also, the authors became aware through anecdotal reports from teachers and staff that many students’ reading levels were below that required of the measures researchers distributed while some students failed to complete research packets because of limited investment in the process or lack of commitment to the researchers. Therefore, to circumvent some of these issues so that valid results might be acquired, an individual mode of assessment was used only after researchers had spent time in day-to-day contact with students and teachers in the school setting.21

**Academic Preparedness.** Academic preparedness was difficult to assess for this sample because it is typically associated with grade level knowledge. However, very few students in this sample were found to have WRAT-R subscale scores reflecting ninth grade level knowledge in all three domains. Therefore, the researchers developed an alternative definition of academic preparedness more reflective of the mean scores. Students whose WRAT-R subscale scores indicated knowledge at least the sixth grade level in two out of three WRAT-R academic areas were labeled academically prepared. This adjustment was made to accommodate the academic norm within this setting and sample. For the purposes of the statistical analysis, academically unprepared students were coded as 1 while academically prepared students were coded as 2.

**Honorability.** Honorability was defined as teacher perceptions of the degree to which students engaged in behaviors that were conducive to instruction and learning in the classroom, such as arriving to class on time; arriving prepared to work; and submitting homework products consistently.22

After the administration of the WRAT-R, students were categorized based upon teachers’ observations of their behaviors in the classroom over a three week period at the beginning of the fall semester. Teachers were first asked to independently assign all participating students to either the behaviorally honorable group or behaviorally dishonorable group. Once group assignments had been made by teachers independently, teachers came together to discuss each of their decisions. Honorable students were those who attended to course content in questions and discussions; consistently turned in homework; brought required materials to class (e.g., notebooks, paper, pencils, pens); followed teacher directions; and arrived to class in a timely manner.

Teacher criteria for student assignment to the dishonorable group were based on behaviors such as verbal outbursts during classroom activities that were directed toward other students and teachers and were not related to learning content; consistent absence of homework; coming to class unprepared for reading and writing; inattentiveness to teachers’ directions; frequent absenteeism; and consistent tardiness. Students perceived as dishonorable were coded a 1 for the statistical analysis, and those perceived as honorable were coded 2.

Of the 50 students selected for participation, independent group assignments were consistent across all participating teachers for 44 students (88% agreement).23 Those six students for whom agreement did not occur were categorized as “mixed honorable” and were not included in the study. This category described students whose teacher-perceived problem behaviors were not apparent across all teachers and were a topic of ongoing, teacher-university faculty, and work team discussions.

Demographic variables, such as family SES, parental education, parental employment status, and family constellation were not used as variables in the study because there exists mixed support for their inclusion in the literature. Some recent studies have noted a significant relationship between demographic information and academic persistence and academic success, whereas others note weak or no relationship at all.25 Second, these typically noteworthy variables were very sensitive issues within the community and school setting.

Third, their limited variance within the sample would have limited utility with multiple regression analysis. Fourth, the researchers chose only research variables that might be affected by either a behavioral or cognitive intervention, which would not include demographic variables. Consequently, student behaviors, teacher perceptions, academic competence, and academic preparedness were selected for inclusion in the study.

**Hypothesis and Statistical Analysis**

Given the current body of literature, the authors hypothesized that teacher perceptions of student honorability and preparedness would explain a significant amount of the variance found in GPA. Descriptive statistics were calculated for students’ GPA and WRAT-R scores.
Table 1

Descriptive Statistics: Student Grade Point Average and WRAT-R Scores

<table>
<thead>
<tr>
<th>Variable</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Dev.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grade Point Average (4.0 scale)</td>
<td>0.00</td>
<td>3.66</td>
<td>1.63</td>
<td>0.66</td>
</tr>
<tr>
<td>WRAT-R Arithmetic Score</td>
<td>4.00</td>
<td>13.00</td>
<td>6.33</td>
<td>1.66</td>
</tr>
<tr>
<td>WRAT-R Spelling Score</td>
<td>2.00</td>
<td>13.00</td>
<td>6.49</td>
<td>2.48</td>
</tr>
<tr>
<td>WRAT-R Reading Score</td>
<td>2.00</td>
<td>13.00</td>
<td>6.59</td>
<td>2.99</td>
</tr>
</tbody>
</table>

n = 44

Note: WRAT-R scores refer to grade levels, i.e., second grade (2.00) to college freshman (13.00).

To examine the degree to which students’ academic competence predicted their GPA, multiple regression analysis was used. Multiple regression analysis was also used to examine the influence of teacher perceptions of student honorability and academic preparedness on GPA.

Results of the Analysis

Means, standard deviations, and ranges for students’ grade point averages and WRAT-R subscores are presented in Table 1. The average cumulative GPA in the four core courses at the end of the first six week grading period was 1.63 on a 4.00 scale, ranging from zero to 3.66. The mean arithmetic grade level score for the WRAT-R was 6.33, ranging from 4.00 to 13.00. The mean spelling grade level was 6.49, ranging from 2.00 to 13.00; and the mean reading grade level was 6.59, ranging from 2.00 to 13.00. Arithmetic grade level scores ranged from the fourth grade to freshman college level. Spelling and reading skill levels ranged from the second grade to freshman college level.

Twenty-five students (60%) were identified by teachers as academically unprepared, and 19 (40%) were identified as academically prepared. Approximately 75% (n = 33) were identified as honorable and 25% (n = 11) were identified as dishonorable. No significant correlation was found between students’ GPA and the WRAT-R subscale scores: Arithmetic (r = .16; p = .24); Reading (r = -.06; p = .65); and Spelling (r = -.01; p = .93). These results indicate that student GPA and knowledge base, as measured by standardized test scores, were not related.

Table 2 presents the results of the multiple regression analysis that examined the degree to which student academic competence accounted for the variance in student GPA. Academic competence was found not to be a statistically significant predictor of GPA (R2 = .04; p = .55).

Table 3 presents the results of the multiple regression analysis that examined the degree to which academic preparedness and teacher perceptions of student honorability accounted for the variance within GPA. Approximately 16% (R2 = .164; p = .03) of the variance in students’ cumulative GPA could be predicted by this set of independent variables. Student honorability was found to be a statistically significant and positive predictor of GPA (Beta = 0.36, p = .02) while academic preparedness was not. Therefore, students whose teachers perceived them as honorable were more likely to have higher GPAs than those who were perceived as dishonorable. However, it should be remembered that overall teacher perceptions explained a small percentage of the variation in GPA.25

Table 2

<table>
<thead>
<tr>
<th>Academic Competence</th>
<th>B</th>
<th>Std. Error</th>
<th>Beta</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arithmetic</td>
<td>0.14</td>
<td>0.11</td>
<td>0.19</td>
</tr>
<tr>
<td>Spelling</td>
<td>0.01</td>
<td>0.07</td>
<td>0.03</td>
</tr>
<tr>
<td>Reading</td>
<td>-0.05</td>
<td>0.06</td>
<td>-0.15</td>
</tr>
<tr>
<td>Constant</td>
<td>0.93</td>
<td>0.62</td>
<td></td>
</tr>
</tbody>
</table>

R2 = 0.04
F = 0.70
p = .55

Table 3

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>B</th>
<th>Std. Error</th>
<th>Beta</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academic Preparedness</td>
<td>0.22</td>
<td>0.25</td>
<td>0.13</td>
</tr>
<tr>
<td>Teacher Perception of Honorability*</td>
<td>0.60</td>
<td>0.25</td>
<td>0.36</td>
</tr>
<tr>
<td>Constant</td>
<td>1.08</td>
<td>0.19</td>
<td></td>
</tr>
</tbody>
</table>

* Statistically significant (p = .02)

Note: Academic preparedness refers to academic competence at or above the sixth grade level on at least two of the three WRAT-R test subjects.

R2 = 0.16
F = 3.53
p = 0.03
Conclusions and Recommendations

In this study of a sample of 44 urban high school freshmen, neither academic competence nor preparedness was found to be a statistically significant predictor of cumulative GPAs for the first six week grading period. However, teacher perception of student honorability was—although it accounted for only a small portion of variance in GPA. These findings raise concerns about the emphasis often placed on GPA as the sole reflection of academic competence and preparedness. Below key findings of the study are highlighted with recommendations for counselors who work with urban, at-risk high school students.

- Descriptive statistics revealed that there was a great deal of variation in students’ academic competence, preparedness, and honorability. The existing within-group diversity may suggest the need for more sensitive use of assessments to procure a more accurate understanding of at-risk urban high school students in order to develop and implement the most effective guidance and counseling interventions.
- The statistical independence of GPA and academic competence in this sample of a population perceived to be most at risk within an urban community may begin to explain negative outcomes in traditional interventions within this setting. Identity development and the facilitation of a future orientation, which have been found to be associated with African American students’ perceptions of education usefulness, valuing of academic work, and GPA, are the most important points of intervention in all high school populations.27
- A small, but statistically significant, portion of GPA was explained by the variation in students’ honorability or adherence to the “rules of school” as defined by teachers, while academic preparedness did not. Academic competence, as measured by standardized test scores in reading, spelling and arithmetic were not related to GPA either. These results reinforce the need for counselors to individualize assistance to and support for academically at-risk students. For example, a student with a high GPA, but low standardized test scores, requires a different intervention than one with a low GPA and high standardized test scores, and so forth.28 Still other students may need interventions regarding classroom behavior. Interventions need to be designed to address the point of deficit. Current literature supports this recommendation, particularly in the case of in-school misbehavior.29
- The findings highlight the importance of considering academic performance norms in studies of urban, at-risk students. In this sample, students were performing on average almost three grade levels below their assigned grades, and the classroom behavior of 25% of the sample was perceived by teachers as dishonorable. Under these circumstances, teachers would be challenged to find a level of instruction that would be suitable across a wide range of academic knowledge. In addition, teachers and school counselors likely would spend a significant amount of time responding to in-class disruptions and disciplinary activity.30

In summary, findings from this study support the notion that grading practices are multidimensional, influenced by a number of variables, and in some settings may not accurately reflect actual academic competence. In such settings, administrators, teachers, and school counselors must be appropriately prepared to attend to all of the previously mentioned negative implications associated with the disconnect between the two variables. However, the noteworthy good news is twofold. First, in spite of the absence of such a relationship, GPA, even in such settings, remains as a meaningful and important construct in assessing, understanding, and responding to students’ unique experiences within their school environment. Second, other means of assessing academic competence, such as the WRAT-R, do exist and can serve as viable alternatives for inclusion in assessment of academic competence, program development, and interventions within certain student populations. Nevertheless, in the current climate wherein teachers, administrators, and politicians alike are raising questions about the utility of GPA as a predictor of academic competence, future research that continues to add clarity to our understanding of grading practices across school settings and student populations would continue to add to the literature in a meaningful way and is very much needed.31

Endnotes

1 See, for example, Larry Brody and Jerry Rimbach, “At Many Schools, ‘A’ Stand for ‘Average’,” Lansing State Journal, May 2, 2005, Section D.
5 Gutman et al., “Academic Growth Curve Trajectories.”
10 Jennifer Alvidrez and Rhonda S. Weinstein, “Early Teachers’
Perceptions and Later Student Academic Achievement,” Journal of Educational Psychology 91 (December 1999): 731-746.

11 Ibid.


13 DeMoulin and Walsh, “Comparing the Personal Development Test Scores.”


16 Alvidrez and Weinstein, “Early Teachers’ Perceptions.”

17 This high school is a Professional Development School with a well-established, long-term relationship with Michigan State University.


19 The administration time for the WRAT-R is 15-30 minutes. The test is designed to measure basic school codes rather than comprehension, reasoning, and judgement processes. See Jastak et al. (1995) for further information on its recommended uses, internal consistency, test-retest reliability, construct validity, and standardization.

20 Due to sporadic student attendance, a common problem among students in general and particularly within this sample, a three week period of administration was necessary. Although most students had completed the assessment process by the second week of classes (n = 34), the final ten completed the testing during the third week.

21 In exchange for teacher participation, researchers engaged classes in mini-workshops addressing the development of problem-solving skills and coping styles after the collection of packets.

22 Readers must be cautioned to recognize the limitation of addressing only teachers’ perceptions of students in an equation to understand the influence of students’ behaviors on GPA, which may also be influenced by teacher variables beyond students’ control. Oates found that the impact of teachers’ perceptions of test performance may show signs of being pronounced in racially dissonant white teacher/black student context where teacher perceptions seem likely to be unfavorable. (See, Gregg L. Oates, “Teacher-Student Racial Congruence, Teacher Perceptions, and Test Performance,” Social Science Quarterly 84 (September 2003): 508-525.) In addition, Ferguson provided evidence for the proposition that teachers’ perceptions, expectations, and behaviors interact with students’ beliefs, behaviors, and work habits in ways that help to perpetuate differences in Black-White academic performance. (See, Robert F. Ferguson, “Teachers’ Perceptions and Expectations and the Black-White Test Score Gap,” Urban Education 38 (July 2003): 460-507.)

23 Although much care was taken in this study to control for inter-rater reliability given that three of the four teacher participants were white and one was African American, other means of assessing inter-rater reliability are available. For example, future research might include students’ perceptions and evaluations of other students’ in-class behaviors. Although some believe that the most valid strategy is to include students’ self-evaluations, Morgan and Mehta found that African American students’ self-evaluations were more weakly associated with their measured academic performance. (See, Stephen L. Morgan and John D. Mehta, “Beyond the Laboratory: Evaluating the Survey Evidence for the Misidentification Explanation of Black-White Differences in Achievement.” Sociology of Education 77 (January 2004): 82-101.)


26 Because only 16% of the variance within GPA was explained by student Honors, future researchers may want to consider using a measure which assesses a broader range of academic knowledge or learning, e.g., critical thinking, reading comprehension, etc. than the WRAT-R.

27 Brown and Jones, “The Substance of Things Hoped for.”

28 Focusing on GPA alone as the best predictor of future academic success in college and academic persistence of urban high school students while ignoring standardized test scores (and vice versa) may result in increased probability of academic and/or life failure. Two possible errors could be made by school staff, parents, and students. For the purpose of discussion, the authors will borrow from statistics and use Type I and Type II errors for explanatory purposes. A Type I error in counseling and program development would be made when academically prepared students are directed toward post-graduation educational options, careers, or jobs that have lower status than their ability or intellectual capacity warrants because of a relatively low GPA. A Type II error in counseling and program development would be made when academically underprepared students are directed toward post-graduation educational options, careers, or jobs that exceed their ability and/or level of intellectual capacity because of a relatively high GPA. In either case, the probability for academic dissatisfaction, boredom, and failure would likely increase.


30 At the same time, researchers must be aware that the effects of “stereotype threat” may be a major influence on academic success. There is support in the literature for remediating this environmental influence in program development as a means for increasing positive academic adjustment and higher standardized test scores within urban, at-risk communities. (See, Claude M. Steele and Joshua Aronson,
“Stereotype Threat and the Intellectual Test Performance of African Americans,” *Journal of Personality and Social Psychology* 69 (November 1995): 797-811.) However, even within schools that overtly express a strong commitment to creating a positive and self-affirming learning environment for African American students, studies have identified co-existing practices that impede academic affirmation. (See, Karolyn Tyson, “Notes from the Back of the Room: Problems and Paradoxes in the Schooling of Young Black Students,” *Sociology of Education* 76 (October 2003): 326-343.)

Although not addressed in this study, given the well-documented gender differences in patterns of academic performance and persistence among African American youth, the authors recommend attention to gender in the future study of this construct with larger sample sizes. (See, Jeanne Saunders, Larry Davis, Trina Williams, and James H. Williams, “Gender Differences in Self-Perceptions and Academic Outcomes: A Study of African American High School Students,” *Journal of Youth and Adolescence* 33 (February 2004): 81-90.) The authors also recommend replication of this study with students in different community settings, e.g., general urban high school student population, suburban high school population, rural high school population. Such studies could add clarity to our understanding of the construct of GPA and how to develop the most effective programming addressing high school student academic success and persistence.