

# Acceleration and Economically Vulnerable Children<sup>1</sup>

*Jonathan A. Plucker, University of Connecticut, Storrs, Connecticut*  
*Bryn Harris, University of Colorado Denver, Denver, Colorado*

## Abstract

A large number of talented students live in poverty, and an even larger number live in families that are economically vulnerable. National academic achievement data provide evidence that high-ability, economically vulnerable students achieve considerably less academic success than their more economically secure peers, a trend that has developed over at least the past few decades. In this chapter, we review research on the effectiveness of various acceleration strategies when used with economically vulnerable students. Our conclusion provides recommendations on future directions.

## INTRODUCTION

One of the paradoxes of the United States in the 21st century is that the country is among the richest in the world yet is also one of the poorest. Data from the U.S. Census provide evidence that over 45 million Americans live in poverty<sup>2</sup>, representing 14.5 percent of the population. Although this poverty rate is not exceptional (similar rates were experienced in the early 1980s and 1990s, and rates were historically much higher prior to the implementation of Social Security and Great Society social programs in the 1950s and 1960s), population growth has led to more Americans living in poverty today than at least since the 1950s (DeNavas-Walt & Proctor, 2014).

Childhood poverty rates (i.e., for children 18-years-old or younger) have dropped during the current economic recovery, currently standing at 19.5 percent, down from a peak of 21.3 percent in 2012 (DeNavas-Walt, Proctor, & Smith, 2011; DeNavas-Walt & Proctor, 2014). However, this rate still represents over 14 million children (DeNavas-Walt & Proctor, 2014), and the rate itself is one of the highest in the developed world (UNICEF Innocenti Research Centre, 2012). Nearly 10% of households (3.8 million households) experience some degree of food insecurity, defined as “access to adequate food is limited by a lack of money and other resources” (Coleman-Jensen, Gregory, & Singh, 2014, p. v). The U.S. Department of Agriculture estimates that these household

data translate to over 8.5 million children experiencing some degree of food insecurity in 2013 (Coleman-Jensen, Gregory, & Singh, 2014).

At the same time, the percentage of K-12 students qualifying for free or reduced-price lunch programs has substantially increased. For the 2011-2012 school year, 49.6% of students qualified for these programs, meaning nearly half of our students live in households whose income is 1.85 times the poverty level or less. In 18 states (plus the District of Columbia), over half of the student population qualifies for lunch assistance, with over 60% qualifying in five of those states and the District of Columbia<sup>3</sup>.

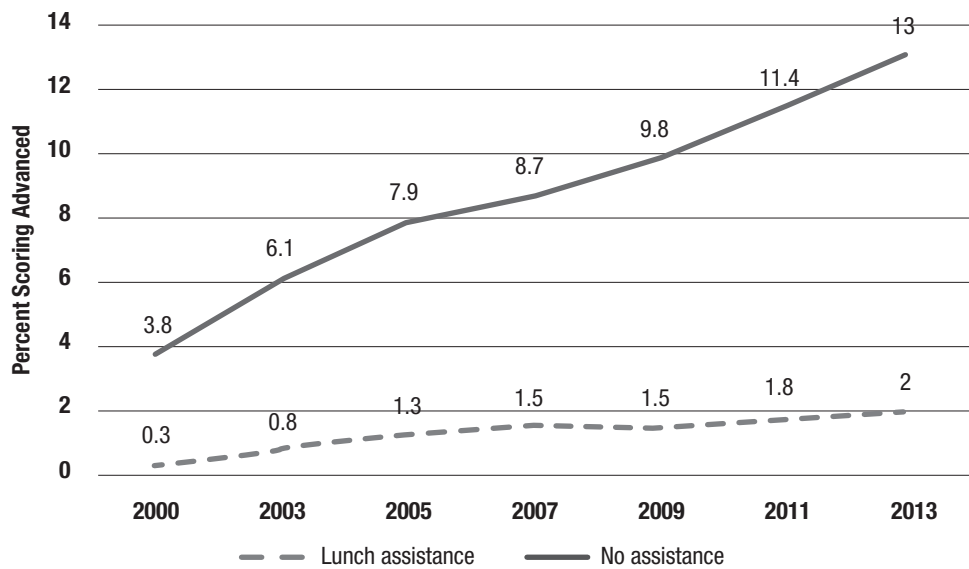
However, these statistics mask a number of important complexities related to measuring poverty and, as a result, determining its impact upon children and families. Poverty is not easy to define, and measuring it is not without considerable controversy (see an excellent discussion of these issues in UNICEF Innocenti Research Centre, 2012). Some U.S. databases rely on whether students are qualified to participate in

<sup>1</sup> Some of the ideas presented in this paper were first prepared for a symposium on developing the talents of low-income students, co-sponsored by the Jack Kent Cooke Foundation and the National Association for Gifted Children, in Washington, DC, on May 31, 2012.

<sup>2</sup> All data, unless otherwise noted, are drawn from databases representing 2013 data.

<sup>3</sup> See [http://nces.ed.gov/programs/digest/d13/tables/dt13\\_204.10.asp](http://nces.ed.gov/programs/digest/d13/tables/dt13_204.10.asp).

**Figure 1: Percent Scoring Advanced, NAEP Grade Four Mathematics**



free- or reduced-price lunch programs, but the issues of using this data point as a measure of poverty are well-documented (Harwell & LeBeau, 2010). Other databases simply do not include indicators of family economic well-being, which further complicates matters.

For example, 25.2 percent of children living in households at or below the poverty line are estimated to experience food insecurity. In households with income-to-poverty ratios of 1.85 or lower, food insecurity rates are not terribly dissimilar at 21.5% (Coleman-Jensen et al., 2014). For these reasons, we use the term “economically vulnerable”<sup>4</sup> to describe students who deal with the myriad issues faced by individuals experiencing a lack of socioeconomic security in the United States. In the data provided below, we use lunch program qualification as a proxy for economic vulnerability, as it is the only relevant indicator available in the data sets of interest.

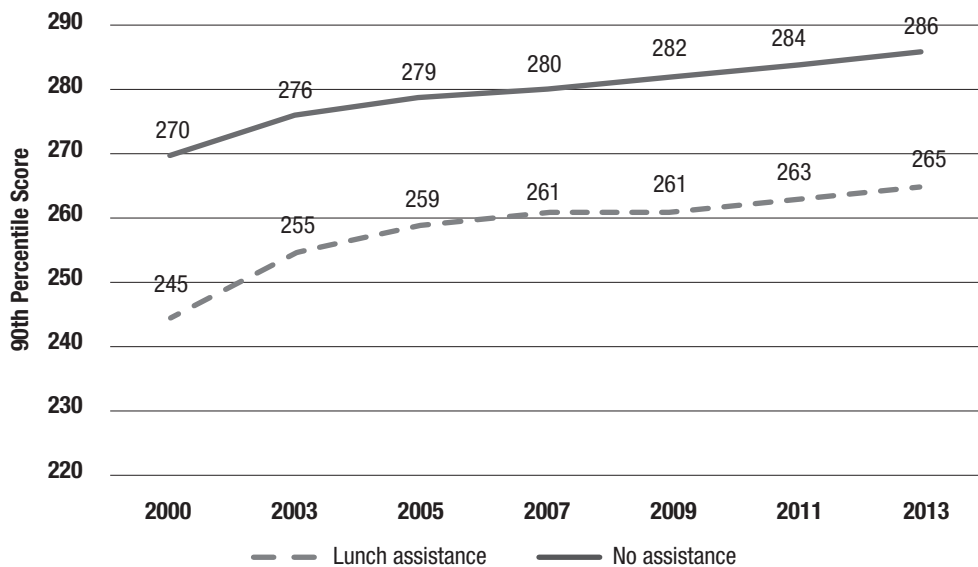
Another complication that is relevant to the current analysis is that much education policy – and many related policy debates - focuses primarily on race and ethnicity at the expense of economic vulnerability. This focus is understandable given the country’s long, troubled history of racial and ethnic discrimination, but we note that, although some racial and ethnic groups are more likely to experience poverty than others, economic vulnerability is experienced by all racial and ethnic groups in all communities throughout the United States (Kneebone, 2014). In other words, socioeconomic insecurity is often correlated with other demographic characteristics, but those correlations do not explain all of the variance, and correlation should not be inferred to represent causation.

### POVERTY-BASED EXCELLENCE GAPS

Excellence gaps are differences in educational outcomes for advanced students based on demographic characteristics (Plucker, Burroughs, & Song, 2010). These excellence gaps are an indicator of how communities balance equity and excellence in education and social services, as they represent differences in academic success between privileged and less privileged groups of students. Plucker, Hardesty, and Burroughs (2013), using data from the 2011 National Assessment of Educational Progress (NAEP), examined the correlation between minimum competency gaps (the traditional “achievement gaps” that drive American education policy) and excellence gaps and found negligible statistical relationships between the size of the two gaps. These results provide additional evidence that minimum competency gaps and excellence gaps are largely distinct phenomena, and that rising tides do not necessarily lift all ships.

Most countries have lower rates of academic excellence among poorer students than wealthier students, and gaps can be observed across countries based on immigrant status (this is the closest proxy possible in some international data sets; see Rutkowski, Rutkowski, & Plucker, 2012). Plucker et al. (2010) proposed two ways to assess excellence gaps. One method is to examine the percentage of students qualifying

<sup>4</sup> During work on another project, Prof. James Moore suggested the use of this term, and we appreciate this recommendation and use the term throughout this chapter. However, for stylistic reasons, we do occasionally use poverty and economic vulnerability interchangeably to avoid repetition of the longer term.

**Figure 2: 90th Percentile Scores, NAEP Grade Four Mathematics**

for free and reduced-price lunch programs that score “advanced” on NAEP tests compared to their peers who do not qualify for lunch assistance.

Figure 1 includes data by lunch status on the NAEP Grade 4 math assessment. Although the percentage of students scoring “advanced” on these tests has increased for both groups, students not qualifying for lunch assistance have seen sharply increased performance (3.8% scored Advanced in 2000; the percentage steadily increases and in 2013 the percentage scoring Advanced was 13). The increases for students who qualify for lunch assistance and scored Advanced increased incrementally (0.3% in 2000; 2% in 2013).

However, some researchers have noted that the “percent scoring advanced” measure may mask progress being made by the lowering performing groups (i.e., a group may be increasing performance, but the average performance level may not have reached the cut-off for the advanced achievement level.) As a result, researchers often use 90th percentile scores for subgroups. Figure 2 includes the NAEP Grade 4 math data using 90th percentile scores. From this perspective, the excellence gaps are at best stagnant. After 13 years of significant improvement in scores, assistance-eligible students’ 90th percentile scores in 2013 are still significantly below those of non-eligible students in 2000.<sup>5</sup>

These and related data led Plucker et al. (2013) to refer to the existence of a persistent, talent underclass in the United States. Available data suggest that poor American students are not performing at advanced levels and have not done so

for generations.<sup>6</sup> With increasing attention to income inequality in the United States, educators and policymakers are beginning to examine the underperformance of talented, economically vulnerable students. What does the research say about acceleration-based interventions for developing academic talents with these students?

## RESEARCH ON ACCELERATION AND POVERTY

Although the benefits of acceleration are well-documented (e.g., Colangelo, Assouline, & Gross, 2004; Gross, 2006; Kulik, 2004), very few studies examine youth from economically vulnerable backgrounds and acceleration practices. Students from economically vulnerable families are more likely to come from families who have not attended college or high school; thus these parents might be more likely to encourage vocational placements after school completion and be less likely to advocate for rigorous coursework or acceleration programs in school settings. Furthermore, gifted students from economically vulnerable households could appear to be underachieving and may be less likely to be identified as

<sup>5</sup> Although we restrict our examples to the Grade Four Mathematics test in this chapter, data trends on other content area tests are similar.

<sup>6</sup> One assumption underlying these excellence gap analyses is that comparable percentages of talented students exist across all subgroups of students. This assumption is historically controversial but is less contentious in current debates. But even if our assumption is incorrect, certainly we should still be finding much higher rates of academic excellence among economically vulnerable students.

gifted (Harris & Plucker, 2014; McCall, 1999). The following section provides a review of the research conducted on acceleration models among economically vulnerable students, using the framework of 18 acceleration types as described in *A Nation Deceived: How Schools Hold Back America's Brightest Students* (Colangelo et al., 2004).

## **ADVANCED PLACEMENT COURSES**

One of the most researched acceleration models is the Advanced Placement (AP) program. This program includes more than 700,000 students annually in more than 13,000 schools. Students who complete AP courses are better prepared for college course work and have the opportunity to earn college credit depending on their scores on AP exams. However, there are many barriers to success within AP programs (Hansen, 2005). For example, 43% of American high schools do not offer AP courses; this is particularly true of those that enroll a high percentage of economically vulnerable students (Iatarola, Conger, & Long, 2011). Furthermore, there continues to be a large discrepancy regarding the populations enrolled in AP courses. White and Asian students are more likely to be overrepresented, while Latino and African American students as well as those from urban, rural, and economically disadvantaged areas are underrepresented (Hansen, 2005; see also College Board, 2014).

Results from a recent large-scale study looking at gaps among AP course enrollment in Florida high schools shed additional light on this topic. The findings were most discrepant for students that were deemed “poor” and “non-poor.” Non-poor students were three times more likely than poor students to take AP or IB courses in each high school subject (Conger, Long, & Iatarola, 2009).

Adelman (2006) found that the greatest predictor of post-secondary success is the completion of mathematics courses beyond Algebra II as well as participation in rigorous academic content such as AP courses. Adelman also found that socioeconomic status (SES) was a less important predictor than rigorous academic preparation. However, the author was careful to mention that children from low SES backgrounds may have less opportunity and family support to demonstrate the characteristics associated with rigorous academic preparation (Adelman, 2006). Students from economically vulnerable backgrounds may begin high school less prepared due to neighborhood characteristics, school resources, and the education received before high school (Conger et al., 2009), and they may also encounter lower educational expectations or stereotype threat, which can be a barrier to gifted identification and placement.

There have been recent efforts to increase access to AP courses for economically vulnerable and minority students. Although the percentage of students taking these courses has increased over the past decade, other policies impacted non-poor and non-minority students during this same time frame spurring faster growth for these populations. Because of this, there is currently an even wider demographic gap between students from economically vulnerable backgrounds and those from higher socioeconomic status backgrounds than in decades past (Conger et al., 2009).

## **GRADE-SKIPPING**

Although the research on grade-skipping among students from economically vulnerable backgrounds is limited, there are a couple of studies that should be highlighted. First, Konstantopoulos, Modi, and Hedges's (2001) study of the National Education Longitudinal Study (NELS) data from 1988 demonstrated that students who skipped grades were more likely to come from higher SES households. Kuo and Lohman (2011) conducted a similar study with the second follow-up data set from NELS-1988, and they found that females, Whites, and students from high SES households were significantly more likely to skip grades earlier in their academic career. The authors concluded that those students who grade skipped early came from families who ensured that their children were highly academically prepared when entering school and may be more likely to advocate for grade-skipping (Kuo & Lohman, 2011).

## **DUAL ENROLLMENT**

Morrison (2008) completed a comprehensive study looking at dual enrollment students in high school and community college classes in the state of Iowa. Although the study did not specifically evaluate gifted students, his findings touch on several relevant issues. First, students enrolled in dual enrollment programs have significantly higher GPAs, and they are 1.6 times more likely to graduate from high school. The findings are even stronger for female students as their graduation probability is higher than non-dually enrolled females as well as non-dually enrolled males and dual enrollment males (Morrison, 2008). This study is especially relevant to the population at hand as children from low SES backgrounds are less likely to have parents who attended college and thus may benefit from early college experiences such as those provided by dual enrollment (Conger et al., 2009). In addition, finishing college credits early and having some of them paid for by their school district may reduce financial burden for postsecondary education for these students.

## MENTORSHIP

Extremely limited research has been conducted regarding mentorship programs with gifted students from economically vulnerable backgrounds, and almost none of the limited research addresses mentorship as used as an acceleration option. In one of the first studies of its kind, Torrance (1974) created a three-week creativity workshop for gifted youth both in poverty and from affluent families. He found that economically vulnerable children demonstrate as much gifted behavior as more affluent peers after receiving some supports, especially mentorship. In a more recent qualitative analysis of three case studies, Hébert (2010) identified a number of factors that influence success for gifted students from poverty, including receiving mentorship from school staff.

Specific populations are also more likely to benefit from mentorship (Burney & Beilke, 2008). For example, Burney and Cross (2006) found that gifted students in rural areas as well as those in low-income families benefit from mentorship for a variety of reasons. First, they state that these populations are more likely to have inadequate self-efficacy, low self-esteem, and low self-concept. The authors created Project Aspire to improve these constructs with strong results. Part of the Project Aspire model is providing substantial mentorship to these students (Burney & Cross, 2006).

On a positive note, Kitano and Lewis (2005) found that cognitive ability was a supporting factor in developing resiliency among students from poverty. This can be a powerful coping mechanism when faced with adversity. Readers are encouraged to review the work of Goff and Torrance (1999) who have provided a list of strategies to use when mentoring gifted students. However, the few available studies address mentorship of gifted students in general, not mentorship as an acceleration strategy per Colangelo et al. (2004).

## EXTRACURRICULAR ACTIVITIES

Only one research study was located that evaluated gifted students from economically vulnerable backgrounds and their participation in extracurricular activities. Hébert (2010) identified a number of factors that influence success for gifted students from poverty, including participation in extracurricular activities. Although numerous studies (e.g., Gerber, 1996) have found the impact of extracurricular activities on academic performance to be of large magnitude, more research is needed on gifted students from economically vulnerable backgrounds. Similar to the research on mentorships, the research on extracurricular activities does not specify how participation in extracurricular activities that are accelerative in nature has an impact on students from poverty.

## EARLY ENTRANCE TO KINDERGARTEN

Children from economically vulnerable backgrounds are more likely to start school with less academic preparation, leading to excellence gaps before schooling even begins. For example, Lee and Burkam (2002) found that children from low SES families begin school with lower mathematics abilities than children of higher SES families.

Regarding early entrance acceleration models, a study by Leuven, Lindahl, Hessel Oosterbeek, & Webbink (2010) points to the potential importance of early access to schooling. The authors did not focus on high-ability children, focusing instead on a large group of children from the Netherlands who came from “non-vulnerable” and “vulnerable” backgrounds. The authors defined “vulnerable” as children from families with low educational attainment of the mother or father. Increasing enrollment opportunities by one month earlier was found to increase language scores and math scores of four year-olds in the study. In contrast, the non-vulnerable students did not see any test-score benefit from early enrollment. The findings indicate that some achievement gaps may be closed by almost 10 percent if early and sufficient learning opportunities are provided to vulnerable populations. These findings are promising, but we also note that the researchers found the test-score benefits were not apparent two years later (Leuven et al., 2010), a common finding in early childhood research.

---

## MOVING FORWARD: IMPLICATIONS FOR RESEARCH AND PRACTICE

---

### RESEARCH IMPLICATIONS

As demonstrated above, little research has been conducted on economically vulnerable students and the 18 acceleration models described in *A Nation Deceived* (Colangelo et al., 2004). What little research exists focuses primarily on economically vulnerable students’ lack of access to acceleration strategies; the literature is almost completely silent on how these students perform in various acceleration strategies. Additionally, studies that conflate race and ethnicity with poverty make it difficult to determine the role of each of these complex constructs in the education of these students.

Some of these under-researched areas should soon produce helpful data. For example, dual enrollment programs are proliferating across the country, and increasing amounts of research should soon be available about the impact of dual enrollment programs on economically vulnerable students, and those students’ experiences with those programs.

At a 2006 leadership conference on low-income students sponsored by the National Association for Gifted Children (NAGC), panels of experts identified four areas of needed research: (1) identification of specific characteristics of various accelerative interventions that result in enhanced student success; (2) evaluation of various assessments to determine which assessments are best for this population; (3) determination of the trajectory of identified and unidentified high-ability students from economically vulnerable backgrounds; and (4) determine the “dose” (see Wai, this volume) of enrichment, both in and out of school, that is needed to effectively impact student retention in advanced academics (National Association for Gifted Children, 2006). With the four areas of needed research indicated, it is a tremendous understatement to conclude that substantially more research is still needed to fully understand the impact of acceleration (or the lack of it) on students from economically vulnerable backgrounds.

## IMPLICATIONS FOR PRACTICE

There is a stark discrepancy between the educational preparation of economically vulnerable children and those from more economically secure backgrounds. The excellence gaps among these groups of students begin early and are not easily remedied. In 2012, the Jack Kent Cooke Foundation and NAGC held a symposium on low-income, high ability students, accompanied by the publication of the report, *Unlocking Emergent Talent: Supporting High Achievement of Low-Income, High-Ability Students* (Olszewski-Kubilius & Clarenbach, 2012). Among the recommendations was providing a range of academic and social supports for low-income students, removing barriers to gifted education services, and conducting more extensive research on targeted interventions. A P-20 approach<sup>7</sup> to service delivery for talented, economically vulnerable students would appear to be a wise approach, given the potential for these students to get “lost in the cracks” during transitions between educational levels (Chamberlin & Plucker, 2008; Roberts, 2008).

We find the removal of barriers to be especially important, but we also caution that removing barriers to participation may be more difficult than expected. For example, some acceleration options may involve a need for transportation, yet economically vulnerable students may not have access to easy or reliable transportation beyond their neighborhood (Andersson, Haltiwanger, Kutzbach, Pollakowski, & Weinberg, 2014; Kain, 1992). An economically secure family may be able to jump in one of the family cars and make a quick, 15-minute trip to participate in a special program, but a student living in poverty may need to make a much longer, potentially un-

supervised trip via public transportation taking an hour or more each way (if public transportation is even available in their community; see Kneebone, 2014, on the increasing concentration of suburban poverty).

Others have suggested that internet-based programming is one way to avoid transportation issues, which on its surface makes sense. But given recent research about economically vulnerable students often not having the necessary media literacy skills to complete online instructional activities (e.g., Leu et al., 2014), the success of online interventions may also be limited. As McWilliams and Plucker (2014) noted, if large excellence gaps exist on skills and competencies addressed in most formal classroom settings, excellence gaps in areas such as new media literacy and other 21st century skills could be expected to be even larger (see also Hardesty, McWilliams, & Plucker, 2014). Skills necessary for future success could become the domain of already-privileged groups of students, exacerbating existing excellence gaps and further solidifying the persistent talent underclass.

---

## CONCLUSION

---

As described above, the United States is, paradoxically, an incredibly wealthy and very poor country: by some estimations, roughly half of American K-12 students are economically vulnerable. Many of these students are academically talented, yet excellence gap data suggest that economically vulnerable students lag far behind their economically secure peers in academic achievement.

On the one hand, interventions based on acceleration may be effective for promoting advanced achievement among high-ability, poor students. In particular, acceleration strategies involving distance education technology hold promise because they do not rely on resources in the students’ schools, which are often poorly resourced and provide little programming for high-ability students.

On the other hand, there are reasons to question whether certain acceleration strategies would be effective with this population of talented students. Recent research provides evidence that many students attending high poverty schools do not have many of the technological skills necessary to

---

<sup>7</sup>The P-16 educational initiative refers to the grades included, from preschool through the postsecondary undergraduate years. These efforts may be called P-20 to emphasize the importance of preparing highly skilled workers beyond an undergraduate education. Activities may include collaborations among state agencies, state legislatures, and businesses that link preschool, K-12, and higher education (Chamberlin & Plucker, 2008).

benefit from internet-delivered programs. However, much of this research has been conducted with mixed ability populations, making it difficult to determine the extent to which the many debilitating correlates of poverty (e.g., lack of access to reliable transportation, healthcare, well-resourced schools, and technology, among many other issues) impact the use of acceleration with economically vulnerable students.

Further complicating the issues, we find little empirical evidence that the efficacy of most acceleration strategies has been examined when used with poor students. A great deal of research is needed in this area, and given the number of economically vulnerable students in the United States, this may be among the most fruitful and beneficial areas for future acceleration research.

---

## REFERENCES

---

- Adelman, C. (2006). *The toolbox revisited: Paths to degree completion from high school through college*. Washington, D.C.: U.S. Department of Education. Retrieved from <http://www.ed.gov/rschstat/research/pubs/toolboxrevisit/index.html>
- Andersson, F., Haltiwanger, J. C., Kutzbach, M. J., Pollakowski, H. O., & Weinberg, D. H. (2014). *Job displacement and the duration of joblessness: The role of spatial mismatch* [NBER Working Paper No. 20066]. Cambridge, MA: National Bureau of Economic Research. Retrieved from <http://www.nber.org/papers/w20066>.
- Burney, V. H., & Beilke, J. R. (2008). The constraints of poverty on high achievement. *Journal for the Education of the Gifted*, 31(3), 171-197.
- Burney, V. H., & Cross, T. L. (2006). Impoverished students with academic promise in rural settings: 10 Lessons from Project Aspire. *Gifted Child Today*, 29(2), 14-21.
- Chamberlin, M., & Plucker, J. A. (2008). P-16 education: Where are we going? Where have we been? *Phi Delta Kappan*, 89, 472-479.
- Colangelo, N., Assouline, S. G., & Gross, M. U. M. (2004). *A Nation deceived: How schools hold back America's students* (V.I., and V.II.). Iowa City, IA: The Connie Belin & Jacqueline N. Blank International Center for Gifted Education and Talent Development.
- Coleman-Jensen, A., Gregory, C., & Singh, A. (2014). *Household food security in the United States in 2013* [Economic Research Report 173]. Washington, DC: U.S. Department of Agriculture, Economic Research Service.
- College Board. (2014). *The 10th annual AP report to the nation*. New York: College Board. Retrieved from <http://apreport.collegeboard.org>.
- Conger, D., Long, M. & Iatarola, P. (2009). Explaining race, poverty, and gender disparities in advanced course-taking. *Journal of Policy Analysis and Management*, 28(4), 555-576.
- DeNavas-Walt, C., Proctor, B. D., & Smith, J. C. (2011). *Income, poverty, and health insurance coverage in the United States: 2010* [U.S. Census Bureau, Current population reports, P60-239]. Washington, DC: U.S. Government Printing Office.
- DeNavas-Walt, C., & Proctor, B. D. (2014). *Income and Poverty in the United States: 2013* [U.S. Census Bureau, Current population reports, P60-249]. Washington, DC: U.S. Government Printing Office.
- Gerber, Susan B. (1996). Extracurricular activities and academic achievement. *Journal of Research & Development in Education*, 30(1), 42-50.
- Goff, K. & Torrance, P. (1999). Discovering and developing giftedness through mentoring. *Gifted Child Today*, 22(3), 14-16.
- Gross, M. (2006). Exceptionally gifted children: Long-term outcomes of academic acceleration and nonacceleration. *Journal for the Education of the Gifted*, 29(4), 404-429.
- Hansen, A. (2005). *Success in advanced placement courses*. Research Brief. Retrieved from ERIC database. (ED537916)
- Hardesty, J., McWilliams, J., & Plucker, J. (2014). Excellence gaps: What they are, why they are bad, and how smart contexts can address them ... or make them worse. *High Ability Studies*, 25, 71-80. Retrieved from <http://www.tandfonline.com/eprint/CxEN4szD3IFXscJ6xbNj/full>
- Harris, B., & Plucker, J. A. (2014). Achieving equity and excellence: The role of school mental health providers in shrinking excellence gaps. *Gifted Child Today*, 37(2), 110-116.
- Harwell, M., & LeBeau, B. (2010). Student eligibility for a free lunch as an SES measure in education research. *Educational Researcher*, 39(2), 120-131.
- Hébert, T. (2010). Educating gifted children from low socioeconomic backgrounds: Creating visions of a hopeful future. *Exceptionality*, 10(2), 127-138.
- Iatarola, P., Conger, D., & Long, M. (2011). Determinants of high schools' advanced course offerings. *Educational Evaluation and Policy Analysis*. doi: 10.3102/0162373711398124
- Kain, J. F. (1992). The spatial mismatch hypothesis: Three decades later. *Housing Policy Debate*, 3(2), 371-460.
- Kitano, M. K., & Lewis, R.B. (2005). Resilience and coping: Implications for gifted children and youth at risk. *Roeper Review*, 27, 200-205.
- Kneebone, E. (2014). *The growth and spread of concentrated poverty, 2000 to 2008-2012*. Washington, DC: Brookings Institution. Retrieved from <http://www.brookings.edu/research/interactives/2014/concentrated-poverty#/M10420>
- Konstantopoulos, S., Modi, M., & Hedges, L.V. (2001). Who are America's gifted? *American Journal of Education*, 109(3), 344-382.
- Kulik, J. A. (2004). Meta-analytic studies of acceleration. In N. Colangelo, S. G. Assouline, & M. U. M. Gross (Eds.), *A Nation deceived: How schools hold back America's brightest students* (V.I., pp. 13-22). Iowa City: The Connie Belin & Jacqueline N. Blank International Center for Gifted Education and Talent Development.
- Kuo, Y. & Lohman, D. (2011). The timing of grade skipping. *Journal for the Education of the Gifted*, 34(5), 731-741.
- Lee, V. E., & Burkam, D. T. (2002). *Inequality at the starting gate: Social socio-demographic differences in achievement as children begin school*. Retrieved from ERIC database. (ED470551)
- Leu, D. J., Forzani, E., Rhoads, C., Maykel, C., Kennedy, C., & Timbrell, N. (2014). The new literacies of online research and comprehension: Rethinking the reading achievement gap. *Reading Research Quarterly*. doi:10.1002/rrq.85
- Leuven, E., Lindahl, M., Hessel Oosterbeek, H. & Webbink, D. (2010). Expanding schooling opportunities for 4-year-olds. *Economics of Education Review*, 29, 310-328.
- McCall, A.L. (1999). Can feminist voices survive and transform the academy? In S. Steinberg (Ed.), *The edge: Critical studies in educational theory* (pp. 83-108). Boulder, CO: Westview Press.
- McWilliams, J., & Plucker, J. (2014). Brain cancer, meat glue, and shifting models of outstanding human behavior: Smart contexts for the 21st century. *Talent Development and Excellence*, 6(1), 47-55.

- Morrison, M. (2008). *The benefits of acceleration: Graduation advantages*. Retrieved from ERIC database. (ED505283).
- National Association for Gifted Children. (2006). *National leadership conference on low-income promising learners. Conference Summary*. Retrieved from [http://ektron.nagc.org/uploadedFiles/Conventions\\_and\\_Seminars/Overlooked%20Gems%20Summary%20\(final\).pdf](http://ektron.nagc.org/uploadedFiles/Conventions_and_Seminars/Overlooked%20Gems%20Summary%20(final).pdf)
- Olszewski-Kubilius, P., & Clarenbach, J. (2012). *Unlocking emergent talent: Supporting high achievement of low-income, high-ability students*. Washington, DC: NAGC. Retrieved from [http://www.jkcf.org/assets/1/7/Unlocking\\_Emergent\\_Talent.pdf](http://www.jkcf.org/assets/1/7/Unlocking_Emergent_Talent.pdf).
- Plucker, J.A., Burroughs, N., & Song, R. (2010). *Mind the (other) gap: The growing excellence gap in K-12 education*. Bloomington, IN: Center for Evaluation and Education Policy, Indiana University. Retrieved from <http://cepa.uconn.edu/mindthegap>.
- Plucker, J. A., Hardesty, J., & Burroughs, N. (2013). *Talent on the sidelines: Excellence gaps and America's persistent talent underclass*. Storrs, CT: Center for Education Policy Analysis, University of Connecticut. Retrieved from <http://cepa.uconn.edu/mindthegap>.
- Roberts, J. L. (2008). Talent development: A "must" for a promising future. *Phi Delta Kappan*, 89(7), 501-506.
- Rutkowski, D., Rutkowski, L., & Plucker, J. A. (2012). Trends in education excellence gaps: A 12-year international perspective via the multilevel model for change. *High Ability Studies*, 23, 143-166. doi: 10.1080/13598139.2012.735414.
- Torrance, E. F. (1974). Interscholastic brainstorming and creative problem solving competition for the creatively gifted. *Gifted Child Quarterly*, 18, 3-7.
- UNICEF Innocenti Research Centre. (2012). *Measuring child poverty: New league tables of child poverty in the world's rich countries* [Innocenti Report Card 10]. Florence, Italy: UNICEF Innocenti Research Centre.