WERA Washington Educational Research Association
Linking Research, Data, and Assessment to Impact Policy and Practice

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CONTENTS

About This Issue

This issue of The WERA Educational Journal (WEJ) has a special focus on topics related to highly capable students. WERA has a new special interest group (SIG) for HiCap issues, and six articles provide a cross section of insights and resources. The WEJ intends to continue printing additional papers on HiCap topics in future issues.

- Kristina Johnstone collaborated with others at OSPI to describe the evolution of highly capable programs in Washington over the past 55 years.
- Kathryn Picanco summarizes what differentiation looks like for highly capable students.
- LaWonda Smith provides a case study from the large school district on the under-representation of students of color in highly capable programs.
- Barbara Peterson writes about a process used in a rural district to determine why Hispanic students have not had access to more challenging high school courses and the steps taken to address this shortcoming.
- Rachel Chung and Nancy Hertzog provide short summaries of recent research conducted at University of Washington's Robinson Center for highly capable students.
- The series concludes with a list of resources that educators can access to learn more about this population.

Two other papers and a book review complete this issue.

- Now that we have Smarter Balanced assessment results, educators are interested in the relationship between these results and student results from other assessments used by schools and districts prior to the spring summative assessments. Jack Monpas-Huber looks at the correlation between Smarter Balanced results and those of the STAR Reading and Math assessments, two computer-adaptive assessments that are commonly used by districts around the country.
- Closing the achievement gap has been a long-term challenge. Andrew Parr looks at NAEP results over time and the performance gap between White students and Black and Hispanic students based on their economic status (low income and not low income).
- Pat Cummings completes the issue by reviewing The Prize, a new book that looks at recent school reform efforts.

Future issues of this journal are being planned. Papers for the Spring 2016 issue are due January 15. See page 55 for more information about how to submit papers for the journal.

I am pleased to announce that a new co-editor of the WEJ has been selected. Charalambos "Charlie" Cleanthous, Ph.D., an Associate Professor in the Department of Psychology at Eastern Washington University in Cheney, will join me to work on the WEJ Spring 2016 issue. WERA is expanding its membership among the higher education communities, and Charlie will take the lead in reaching out to these institutions to identify high-quality research that can be published in the WEJ. We welcome his willingness to take on this 2-year commitment.

Pete Bylsma, EdD, MPA
WEJ Editor

Washington State's Highly Capable Program: A Brief History

Kristina Johnstone, Office of Superintendent of Public Instruction

Recent changes in legislation incorporated highly capable services as part of Basic Education. This paper provides a brief history of the events, perspectives, and legislation during the past 55 years to help us understand how state requirements and definitions evolved over time.

The history of the Highly Capable Program (HCP) in Washington State contains interesting lessons for both educators and policymakers. As the supervisor for the program, I field many questions from a wide range of stakeholders – parents, grandparents, siblings, students, teachers, administrators, reporters, superintendents, board members, university staff, researchers, policymakers, graduate students – the list goes on. While many inquiries come from within Washington, some come from people across the country and abroad. Admittedly, most questions are about identification procedures, program requirements, and services for students. But many times the conversations turn to questions about the meaning of the term "Highly Capable" and how our program came to be what it is today.

Conversations generally focus on the 2009 legislation and what implementation means for both students and districts. However, there is a rich history of this program, and events over the course of several decades have shaped and reshaped the Highly Capable program, which districts must offer as a part of basic education today. Table 1 provides the key changes in the program. The details related to these changes are described in the table below.

Table 1: Key Events in Washington State's Highly Capable Program

1961	28A.16 Special Education – Division for Superior Students created
1984	28A.16 Repealed, Legislature authorizes a voluntary K-12 program for highly capable students
	28A.16 Special Service Program – Highly Capable Students enacted
1990	28A.16 Recodified as 28A.185, inclusion of program monitoring
2009	ESHB 2261 – Basic Education Reform expanded the definition of Basic Education to include the highly capable program
	28A.185 amended to reflect HCP included in Basic Education
	New funding formula established based on the Prototypical School model
2010	HCP Technical Working Group
2011	Advisory Committee drafted WAC amendment proposal
2012	Conducted Rules Change Process
2013	Continued Rules Change Process, amendment became permanent Year of Transition for districts to develop and start implementing program
2014	Districts implement HCPs as a part of Basic Education

1961

In 1961, the Division for Superior Students was created. This division was included as a special education provision in the *Education Code for Washington State Common Schools Title 28A Common School Provisions*. At that time, there were two other chapters for *Special Education: 28A.13—Division for handicapped children* and *28A.14—Division for Recreation. 28A.16—Division for Superior Students* was enacted as the third division.

The Division for Superior Students "established in the office of the state superintendent of public instruction a division of special education for students of superior capacity. Such students are those who consistently show remarkable performance in academic pursuits or demonstrate exceptional ability" *(28A.16.010 Division created—*

Superior students defined). The program scope and costs authorized OSPI to "administer a program to improve the education of students of superior capacity; such program shall include conducting, coordinating and aiding in research (including pilot programs), disseminating information to local school districts, and allocating supplementary funds for excess costs when appropriated for this purpose by the legislature." *Chapter 28A.16.030* authorized districts, either separately or jointly, to "(1) establish and operate special, seminar or augmented programs of education for superior students; and (2) employ and pay special instructors; and (3) establish and operate in conjunction with any institutions of higher learning joint programs of education for superior students" (Washington State Legislature, 1969, p. 1695).

1984

In 1984, *28A.16.010 Special Education—Division of Superior Students* was repealed. New legislation for the *Special Service Program—Highly capable students* was enacted by the legislature. *Chapter 28A.16.020 Program—Scope—Costs* of the prior provision was re-enacted as *28A.16.040 Program—Duties of superintendent of public instruction.* As a result, *Chapter 28A.16.030 Authority of school districts—Joint programs with institutions of higher education* was repealed and later re-enacted as *28A.16.060 Programs—Authority of local school districts—Selection of students.*

Key supporters helped shape the new legislation. In the early 1980s the Washington Coalition for Gifted Education (the Coalition) was formed to allow the organization to lobby for g*ifted education*. The Coalition is comprised of educators as well as parents, and its founding members included Joe Wheeler, founder of Centrum; Wendy Roedell of the University of Washington Early Childhood Gifted Project; Patt Riffle, parent in Bellevue with a keen understanding of politics; and Jaysari Ghosh of the Tacoma School District.

The Coalition actively engaged with legislators, resulting in significant contributions to the developing legislation for highly capable students. Legislators listened to the voices and wisdom of parents and educators and then crafted responsive legislation. Dr. Gail Hanninen, OSPI's Supervisor for the Highly Capable Program from 1985-1990, noted that "June Peck, Director of Support Services, was very much an advocate and had been an innovator of services for gifted students in Bellevue" (2015). The new legislation changed the name for this special service program from *superior students* to *highly capable* students. Discussion during the legislative session resulted in using a term that would be unique to Washington when "gifted" was commonly used by education experts. Concerns expressed by legislators and the Coalition that misinterpretation and misapplication of the term *gifted* would lead to a program that promoted elitism and a perception that serving these students' needs is a luxury, not a basic requirement. Legislation settled on the name *highly capable* students program. Hanninen recalls, "During the implementation of the RCW/WACs, we were always, as we still do, learning to speak about services to such students using a dual language – 'gifted/HiCap'."

The 1984 legislation included a funding provision for highly capable programs. The provision funded up to 3% of a district's full time enrollment. The actual budgeted amount in 1984 was set at 1.5%. Based on how the law was written, the funding was a *line item*. As with all categorical funding line items, the percentage as well as the actual dollar amount could vary from biennium to biennium.

In response to the legislature enacting the 1984 legislation, OSPI implemented the program in early 1985. The program fell under the Support Services division overseen by Director, June Peck. OSPI created the new position of program supervisor for the Highly Capable Program (HCP) in August 1985 and Hanninen was hired for the new position. Hanninen (2015) recalls that when she started that August, "forms were already in place and the initial application process had been started."

1990

In 1990, the Education Code Washington State Common Schools was recodified, and Title 28A.16 was recodified as *Chapter 28A.185 Revised Code of Washington (RCW) Highly Capable Students*.

2002

In 2002, the Legislature enacted a new section, *28A.185.050 Program review and monitoring—Reports to the legislature—rules*, which required OSPI to conduct district program reviews and provide a report to the Legislature on the programs offered by districts to highly capable students. Only those districts which chose to receive HCP funding were required to report on identification and services for highly capable students. OSPI then amended the WAC to align with these new requirements. The first report, based on data from those districts that participated in the program during the 2002-03 school year, was provided to the education committees of the House of Representatives and the Senate.

2009

Basic education reform was underway with the passage of Engrossed Substitute House Bill (ESHB) 2261 during the 2009 legislative session. This Basic Education Reform legislation expanded the definition of basic education to include the highly capable program. Additionally, "the bill specifies that funding allocations and expenditure reporting are done by a prototypical school model" (OSPI, no date). The Coalition actively worked with legislators to move the program from a categorical program to be included in basic education.

The Legislature included the program in basic education in Chapter 28A.185 Revised Code of Washington (RCW) Highly Capable Students[1] and amended the Basic Education Act—RCW 28A.150.220 (3)(g) to provide that "the instructional program of basic education provided by each school district shall include programs for highly capable students under RCW 28A.185.010 through 28A.185.030"[2] (Washington State Legislature).

Along with the expansion of basic education that included programs for highly capable learners, a new funding structure was established. Again, the Coalition actively advocated for a funding structure change so that the HCP would no longer be a line item susceptible to cuts in every budget cycle. As legislation was passed to include the HCP in basic education, the HCP funding moved from a categorical line item to formula funding based on the prototypical schools model.

2010

Legislators, under ESSB 6444, Section 501 (1)(q), required OSPI to form the Highly Capable Program Technical Working Group (HCPTWG). The working group was to establish recommendations to the Quality Education Council regarding what constitutes a basic education program for highly capable students. These recommendations were then forwarded to the Legislature. The working group also recommended an appropriate funding structure to support the state's HCP students. The working group members included researchers and academics with extensive background knowledge on the educational, emotional, and social needs of highly capable students. The group conducted the work and met four times between the months of August and November. The final report was issued in December (Pauley & Hess, 2010).[3]

[1] http://app.leg.wa.gov/rcw/default.aspx?cite=28A.185)
[2] http://app.leg.wa.gov/rcw/default.aspx?cite=28A.150.220
[3] http://www.k12.wa.us/HighlyCapable/Workgroup/pubdocs/HCPWorkgroupLegReport.pdf

2011

The State Advisory Committee for Gifted Education met in March, May, September and December of 2011 to draft the amendment proposal for Washington Administrative Code (WAC) 392-170 Special Service Program—Highly Capable Students to reflect the 2009 legislative action.

2012 – 2013

OSPI initiated the rules change process. The Preproposal Statement of Inquiry was filed in July with the Proposed Ruling Making filed in September. The public was provided an opportunity to comment through November 11 and a public hearing was held on November 28. On March 12, 2013, the Rule-Making Order was filed and the rule changes became permanent 31 days later.

Prior to the inclusion of the highly capable program in basic education, districts had the option to participate in the program. Roughly 100 districts had declined to participate and accept categorical funds. Since the rule change was finalized late in the 2012-13 school year and the changes and new requirements were significant and many districts had not previously operated the program, OSPI provided districts the 2013-14 school year as a year of transition to develop a program that complied with the new requirements.

2014

With the 2013-14 transition year complete, all districts were required to implement the basic education HCP services at the beginning of the 2014-15 school year. Students from across the state were, for the first time, provided the opportunity to be considered for highly capable services from kindergarten through Grade 12 in their local school district. For the first time, participation by districts in this program was no longer voluntary. Each district is now required to operate a program for highly capable learners, submit the HCP Annual Plan for OSPI review and approval, complete the End-of-Year Report, and participate in the Consolidated Program Review. Districts retain the option to return the HCP formula funds; however, districts are still required to provide the HCP and meet all requirements of the Basic Education Act Chapter RCW 28A.150.220 (3)(g), Highly Capable Students Chapter 28A.185, and Special Service Program–Highly Capable Students WAC 392-170.

2015

Districts continue to operate their HCP as a component of basic education and meet program requirements. It is likely that some districts will make changes to operations, procedures, and services based on what worked and what did not work during the 2014-15 school year.

Why "Highly Capable" Instead of "Gifted"?

When asked why Washington uses the term "highly capable" instead of "gifted", we must look at the history that shaped this program. Looking at the words themselves is helpful for understanding the different terms. The term used in the 1961 legislation, *superior students*, describe a student's performance and abilities, whereas *gifted* describes a state of being for a student. The term used in the 1984 legislation, *highly capable*, refers again to a student's demonstrated abilities and capabilities. While gifted is the term used in academic circles and by other entities across the nation, the state's 1984 term continued to describe the performance of students rather than the students themselves. The 2012 WAC changes again echo recognition of a student's ability rather than a condition of being, as the definition of a highly capable student opens the door to students who demonstrate potential.

Change

Over the years, the program has had numerous supporters, and with that support came the belief that the program has room for improvement. Improvements, by definition, require change, but they may not need to occur swiftly. The program has grown tremendously since its inception, which resulted in careful consideration of intent, possibilities, and ramifications by many dedicated individuals who consistently push to better serve highly capable students in Washington.

Hanninen (2015) made the following statement about the necessity and path of change for the state's Highly Capable Program.

> "Often we do not realize that it can take years to achieve some of the innovative ideas that we know should have happened sooner; however, for a variety of reasons they don't. So it has been with education for the gifted and talented or highly capable students in Washington State. For example, in the early 1980s, I recall at OSPI Gifted Advisory Board meetings we would informally and sometimes formally discuss the need for services for gifted students that should be included in special education. When that idea was tested with legislators, they pondered and ultimately said 'no, because we are starting to see what special education is going to cost the State.' Fortunately, some 30 years later we now have gifted in Basic Education and the funding is no longer a 'line item' issue. However, the level of funding continues to be an issue. Also during that period of time, we discussed the need for certification requirements for teachers who taught gifted students, and about 25 years later that idea became a reality. So change definitely takes time, and often many, many years. But I am reminded of a parent in a small district who was upset because her son was not going to benefit from the services of the highly capable program that was being started, but not serving his grade level. Another member in the audience pointed out that 'if our district had made the decision they are making now 5 years ago, your son would be benefiting. So, think to the future. If we do not start now, in another 5 years parents will be expressing the same frustration you are sharing.' This exchange of thoughts has always stuck in my mind, because if we don't make a decision to act today, in essence we have made a decision which results in 'no change' and that is not acting responsibly if we are truly committed as educators to improve the education for all students."

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Abbreviations

HCP	Highly Capable Program
HCPTWG	Highly Capable Program Technical Working Group
OSPI	Office of Superintendent of Public Instruction
RCW	Revised Code of Washington (state law)
WAC	Washington Administrative Code

About the Author

Kristina Johnstone is Highly Capable Program Supervisor at the Office of Superintendent of Public Instruction (OSPI) in Olympia, Washington. She thanks Dr. Gail Hanninen, Supervisor for the Highly Capable Program at OSPI from 1985-1990, who provided historical context for the landmark legislation about Highly Capable Programs that passed in 1984. She also thanks the leaders Gail contacted to confirm activities that occurred prior to her service: Mary Henri Fisher, OSPI Program Supervisor; June Peck, OSPI's Director of Support Services in the years prior to the 1984 legislation; and Dr. Jaysari Ghosh, who worked for the Tacoma School District, was a founding member of the Washington Association of Educators for the Talented and Gifted (WAETAG), and who helped create the Washington Coalition for Gifted Education. Additional thanks go to Jody Hess, former Program Supervisor for HCP, district Highly Capable Program Director, and founding member of WAETAG, who helped identify key events and individuals involved with Highly Capable Programs over the years. Final thanks go to Gayle Pauley, OSPI Assistant Superintendent for Special Programs and former Program Supervisor and Director, who served as a curator of program documents, article reviewer, and a source for historical context and occurrences.

An Overview of Differentiated Instruction for Highly Capable Students

Kathryn Picanco, Whitworth University

Differentiation is an intentional personalization of instruction that recognizes the diversity in each individual. It aligns curriculum with instructional best-practices based on years of research in education and how the brain learns. Highly capable students have unique learning needs that necessitate educational experiences grounded in the principles of high-quality curriculum and differentiated by acceleration, depth, complexity, and/or novelty.

Introduction

Differentiation has been increasingly present in educational research and policies. It is put forth as a solution to meeting the individual needs of each student, including those that are highly capable, and even influence teacher evaluation. Differentiation has the potential to transform instructional practices for the benefit of students and teachers, but a common language and understanding of its principles and elements are an essential first step toward implementation.

What Is Differentiation?

Differentiation is a philosophy where teachers strive to intentionally plan high quality curriculum and instruction based on student readiness, interest, learning profile, and affect. Differentiation is guided by the principles of respectful tasks built on a strong curriculum, flexible and varied instruction, and ongoing assessment of students in a responsive learning environment that is safe, supportive and challenging (Tomlinson, 2014; Heacox, 2012).

Differentiation can occur in the content, process, product and/or learning environment of any learning task. The *content* refers to the concepts, skills and understandings a teacher plans to teach as well as the access to it. For example, a teacher may differentiate the content by creating targeted instruction based on student readiness levels or different curricular materials that reflect student needs. The *process* is how the concepts and skills are taught in the lesson, including the learning activity and thinking skills utilized. Methods such as project-based learning, learning stations, and tiered assignments are some ways the process can be modified to best meet student needs. *Products* are how a student expresses his or her learning. The product reflects the outcome of instruction and communicates understanding. Products can differentiate through student choice of expression or rubrics that challenge a student to extend their thinking beyond the standard. The *environment* refers to how and where learning takes place. It includes the role and expectations of the student and teacher, how students work together, and the general culture of the classroom.

Differentiation is an intentional personalization of instruction that recognizes the diversity in each individual. However, it is not individualized instruction or an attempt to track students. A teacher in a differentiated classroom adopts an approach of ongoing assessment to determine the most viable routes to learning objectives based on predictable patterns of student performance and needs. The standards tell us what to teach, formative assessment clarifies how our students are doing toward meeting those standards, and differentiation tells us how to best bridge the gaps and extend learning for others (Tomlinson, 2000). “Differentiation is making sure that the right students get the right learning tasks at the right time. Once you have a sense of what each student holds as ‘given’ or ‘known’ and what he or she needs in order to learn, differentiation is no longer an option; it is an obvious response”(Earl, 2003, p 86-87).

Why Do We Differentiate?

Differentiation aligns curriculum with instructional best-practices based on years of research in education and how the brain learns (Tomlinson & Sousa, 2010). When teachers attend to different student readiness levels according to

their understanding of skills and concepts, level of independence, and phase of learning they are providing access to learning. Tapping into student interests ensures there is greater motivation to learn and schema for building instruction. Attention to student-specific learning profiles, how a student processes information and solves problems, can impact efficiency in learning. It is important for all students in classrooms to receive differentiated instruction to ensure every child is progressing.

Why Differentiate For Highly Capable Students?

Highly capable, or gifted, students have distinct learning needs that warrant specific forms of differentiated instruction. According to Washington Administrative Code (2013) 392-170-035, students that are highly capable are defined as those "who perform or show potential for performing at significantly advanced academic levels when compared with others of their age, experiences, or environments. Outstanding abilities are seen within students' general intellectual aptitudes, specific academic abilities and/or creative productivities within a specific domain. These students are present not only in the general populace, but are present within all protected classes according to chapters 28A.640 and 28A.642 RCW."

Common traits of gifted learners include learning at a more rapid rate, the ability to grasp underlying principles readily, ease in seeing cause-effect relationships and fluent, flexible and original thinking. Social-emotional traits of gifted learners are equally significant to consider. They tend to develop asynchronously, meaning they are very advanced in certain areas, but develop at a typical rate in others. They tend to have heightened sensitivity to emotions and their environment. These traits, while positive in many respects, can also lead to great challenges for students. For example, their accelerated rate of learning and thought processes requires access to challenging curriculum at a faster rate than their intellectual peers. Flexible thought process requires an opportunity to see or solve problems in diverse ways. Finally, heightened awareness and sensitivities can lead to anxiety, perfectionism, or an extreme need for justice (Clark, 2008). While students identified as gifted are also a heterogeneous group and their needs and interests vary widely, they do have characteristics that are essential to be recognized and addressed.

Karen Rogers' (2007) synthesis of the research on effective practices for educating gifted students revealed the following essential practices:

- Gifted learners need daily challenge in their specific area of talent.
- Opportunities should be provided on a regular basis for gifted learners to be unique and to work independently in their areas of passion and talent.
- Provide various forms of subject-based and grade-based acceleration to gifted learners as their educational needs require.
- Provide opportunities for gifted learners to socialize and to learn with like-ability peers.
- For specific curriculum areas, instructional delivery must be differentiated in pace, amount of review and practice, and organization of content presentation.

Most students identified as gifted spend a great deal of their education in a heterogeneous classroom and can only be served well if curriculum is differentiated appropriately for them (Tomlinson, 2014).

What Is Differentiation For Highly Capable Students?

The state of Washington has recognized the specific academic needs of gifted students. The Revised Code of Washington (2009) chapter 28A.185.020 states that**, "**The legislature finds that, for highly capable students, access to accelerated learning and enhanced instruction is access to a basic education. There are multiple definitions of highly capable, from intellectual to academic to artistic." This led to the revision of the Washington Administrative Code (WAC) Chapter 392-170 for highly capable students to guide districts in the implementation of a program of services to meet this population's academic needs.

Acceleration of learning can come in a variety of formats, but the general categories refer to early entrance, grade skipping, subject-based acceleration, and advanced experiences (Aussouline, Colangelo, Van Tassel-Baska, & Lupkowski-Shoplik, 2015). Enhanced instruction includes the addition of depth, complexity and novelty (or creativity) to curriculum and instruction. *Depth* is the advanced research and level of mastery in a content area including determining patterns, trends, and big ideas. *Complexity* encourages interdisciplinary connections and examining problems or situations from different perspectives. *Novelty* is the inclusion of creative thinking and the application of concepts in new situations with unique solutions (Kaplan, 1994).

There are many ways to craft differentiated experiences that accelerate and enhance instruction. Leppien (2014, p. 8-10) suggests using the following research-based principles to design high quality curriculum for gifted students:

- Use a conceptual approach to organize or explore content that is discipline-based and integrative.
- Pursue advanced levels of understanding beyond the general education curriculum through abstraction, depth, breadth, and complexity.
- Ask students to use processes and materials that approximate those of an expert, disciplinarian, or practicing professional.
- Emphasize problems, products, and performances that are true-to-life and outcomes that are transformational.
- Be flexible enough to accommodate self-directed learning fueled by student interests, adjustments for facing and variety.

The instructional strategies aligned with the guiding principles of differentiation and high-quality curriculum for highly capable students are compatible and varied. It's not necessarily the strategy itself that differentiates but rather, how a teacher shapes the learning experience within the approach to instruction. The following are two examples of what differentiation for highly capable students can look like to provide accelerated and enhanced learning opportunities specific to their needs.

> Marie is advanced in math and science. When she was in elementary school, her teacher regularly substituted the grade level curriculum with advanced math skills in concepts within the same standard. Now that she is in middle school, she is able to take more advanced coursework in math that challenges her. Marie is passionate about the environment and would like to be a biologist. Her science class is studying the impact of climate change on different habitats through problem-based learning. They are looking specifically at changes in a local park's wildlife and vegetation. Marie works with her teacher to develop a project to study the pattern and trends of the wildlife and vegetation over a span of 20 years using authentic data tables, determine factors contributing to the changes, and identify problems and possible research-based solutions to maintain the habitat. Her synthesis of the data and recommendations will then be presented to the local parks department for consideration.
>
> Joseph is a gifted writer. While he's only in fourth grade, he has already written several novels and plays. He is reading at the high school level. Joseph's teacher provides novels that are age appropriate, but advanced reading for him in the classroom. Literature Circle groups are based on student interest in theme related books that are also at different reading levels. Joseph is interested in many genres of writing. Local writers are invited to visit the classroom to provide information about publishing and writing techniques to all students. He has started a class newspaper that with his classmates that reflects the sections, columns, and styles of writing found in the local paper. The class as a whole is participating in a national contest to write a novel in a month. Each student has a minimum page number to contribute, but not a maximum, so Joseph can contribute as much as he'd like.

Conclusion

Teachers are charged with the incredible task of educating all students that come to them. And yet they must do this amidst constant scrutiny, changing standards, and an increasingly diverse student population that demands new ways of approaching curriculum and delivering instruction. We must always ask how we can do our job better to ensure every child is reaching his or her potential to honor the individual and foster a sense of independence in learning so they can positively contribute to our community and society as a whole. This isn't easy, but a starting point is to look inside those that sit in each of our classrooms to bring forth their assets and passion for doing something great (Picanco, 2010, 2015). Differentiation can help guide the way.

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Kathryn Picanco, Ed.D., is Associate Professor of Education at Whitworth University in Spokane, Washington. Her research focuses on differentiation, gifted education, and education for sustainability.

Improving Disproportionality of Students of Color in Highly Capable Programs

LaWonda Smith, Washington State Superintendent of Public Instruction

Traditional methods used to identify highly capable students have resulted in under-representation of students of color and over-representation of others (e.g. white and other advantaged populations). This paper examines root causes of disproportionality in highly capable program and proposes ways a district can start addressing these inequalities.

Introduction

In the literature on gifted programs, two groups emerge as typically under-represented in these programs. The first group is comprised of children from ethnic minority groups and children of poverty. A second category includes the underachiever, gifted females in advanced science and mathematics courses, and gifted students with handicapping conditions (Dorn, 2009). In its 2013 report to the Legislature (OSPI, 2013), the state reported the under-representation of minority students enrolled in Highly Capable programs (HCP) within the state compared to their proportion of enrollment statewide. Comparatively, White student's state enrollment and HC program enrollment percentages are over-represented (Table 1).

Table 1: Students in Highly Capable Programs in Washington State, by Race/Ethnicity, 2011-12

Student Group	% of State Enrollment	% of HCP Enrollment
Alaskan Native/American Indian	1.6%	0.9%
Asian or Pacific Islander	8.0	14.8
Black	4.6	3.7
Hispanic	19.6	9.6
Multiracial	6.1	4.9
White	60.2	65.2

Source: *Highly Capable Students Report, 2013* (OSPI)

The underlying causes for under-representation of students of color in gifted programs lie in the processes and procedures used to identify gifted students, in issues of grouping, in the curriculum and instruction of gifted programs that students encounter before being identified as gifted, and in school programs that prepare children from minority groups and poverty during the early years of school (e.g., Castellano, 2004; Ford, Grantham, & Moore, 2004). Federal efforts to use test scores to highlight and improve performance among minority students have not increased their representation in highly capable programs. Stereotypes and misconceptions also limit opportunity for Culturally, Linguistically, and Ethnically Diverse (CLED) students to show their abilities. Most gifted programs serve students who are white, middle class, and easily identified by objective means such as standardized tests (Boutelle, 2008). In contrast, students of color (with the exception of Asian students) are more likely to be placed in special education programs (Robertson, et al, 1994).

The inability to identify gifted students in underserved groups exposes our inefficiency to nurture, motivate, and counsel innate intelligence in all students. We need to examine the way educators view giftedness and provide teachers with insights and strategies that reveal the many faces of giftedness in their students, including those from populations that are underserved (Cline & Schwartz, 1999). We also need to look at progressive policies and procedures that meet the needs of the under-represented student. Helping teachers develop culturally relevant instructional pedagogy and curriculum will be essential to provide a broader acknowledgement of giftedness.

Historical Context

Before the 1950s schools were considered "separate and equal" and Jim Crow laws mandated the separation of races in public places. Federal and states' systematic educational deprivation and oppression of African Americans were based on the country's entrenchment in slavery and its beliefs in scientific theories that identified intellectual abilities of inferiority or superiority, associated with race. The 1954 *Brown v. Topeka Board of Education* Supreme Court decision provided leverage to end segregation in schools. This led to two outcomes in the 1960s for students of low socioeconomic background: (1) voluntary and mandatory school desegregation, and (2) Title I of the Elementary and Secondary Education Act and the Emergency School Assistance Act. However, these changes unintentionally created negative social and cultural bias for students affected by these initiatives. A system of mediocre education and separate and unequal choices for ethnically diverse students was the practice for the next decade. By the 1990s, the cultural understanding of the richness of the diverse student had become more palatable. Cross, et al. (1993) noted that a number of shifts took place in society—shifting population demographics, shifting in a world or global economy, shifting the social integration and interaction paradigm, and shifting the goal from assimilation to biculturalism—that gave rise to a cultural imperative. Gagné (2000) noted that some students with well above average natural abilities do not translate their gifts into observable talents, and they become academic underachievers.

The proportions of African American and Hispanic students in the highly capable program in the Collins School District (a pseudonym for a large school district located in the Pacific Northwest) are similar to national and state data, i.e., they are under-represented among the general elementary student population in the district. Few African American and Hispanic students are recommended, identified, and/or advocate application for the program's assessment process, and fewer are able to score at the 97th percentile on qualifying standardized tests (Cognitive Abilities Test) that serve as a gatekeeper for the program's enrollment. While these tests capture some of what is currently considered "giftedness", they are not particularly good measures of other aspects of giftedness. Together with the current recruitment and selection process, they contribute to the fact that there are proportionately far fewer of these students in the program.

Definition of "Highly Capable" as an Anchor for Leadership Work

Defining giftedness has been an elusive process. Definitions display a range of contexts and meanings regarding academic attitude. Many of these definitions are closer to definitions of intelligence than giftedness. Some definitions consider three aspects of giftedness (Sternberg, 1991), while others consider many more (Guilford, 1967). Some endorse a single overall "g" factor (Terman, 1916) and others believe in multiple intelligences (Gardner, 1993). The literature suggests that there are multiple aspects of gifted programming that must be modified in order to succeed in identifying and providing successful services to students not traditionally included in gifted programs. Piechowski and Colangelo (1984) stated:

> Many authors have addressed the question of the nature of giftedness and talent only to discover that many factors, components, traits, facets, and potentialities are not captured by tests in use ... Attitudinal changes are among the first paradigms to be addressed. Baldwin (1984) discussed some assumptions about the gifted student:
>
> - Giftedness expressed in one dimension is just as important as giftedness expressed in another.
> - Giftedness can be expressed through a variety of behaviors.
> - Giftedness in any area can be a clue to the presence of potential giftedness in another area, or a catalyst for the development of giftedness in another area.
> - A total ability profile is crucial in the educational planning for the gifted child.

- Carefully planned subjective assessment techniques can be used effectively in combination with objective assessment techniques.
- All populations have gifted children who exhibit behaviors that are indicative of giftedness.
- Behaviors classified as gifted should be above and beyond the average of a broad spectrum of individuals. (p.3)

Definitions may vary in how broad and multi-faceted they are and in the ways they are translated into practices of identification and programming (Callahan, Tomlinson, & Pizzat, 1994; Frasier & Passow, 1996). A successful program has clearly defined definitions, expectations, and standards to execute its primary goal.

In 2009, Washington's Office of Superintendent of Public Instruction (OSPI) defined a highly capable learner as "a student who has been assessed to have superior intellectual ability as demonstrated by *one or more* of . . . multiple criteria" (Garland, 2009, page 5). The multiple criteria must include cognitive ability, specific academic achievement in a specified content area, and exceptional creativity. Table 2 describes OSPI's three overarching highly capable definitions.

Table 2: Multiple Criteria for Determining Superior Intellectual Ability (OSPI)

Cognitive ability	"complete range of intellectual functions referred to as intellect, intelligence, or mental abilities, and includ[ing] such psychological concepts as thinking, abstract reasoning, problem solving, verbal comprehension, and numerical facility"
Specific academic achievement	"obtained results on an achievement test appropriate to discriminate academic performance at high levels of achievement in one or more of the following content areas:" reading, mathematics, social studies, language arts or science"
Exceptional creativity	"demonstration of unique or outstanding creative products and/or the demonstration of unusual problem solving ability or other learning characteristics which indicate to teachers, parents, or classmates that the student has the intellectual potential to perform academically at a level significantly higher than the norm for chronological grade level."

Such broad definitions exist for the nation as a whole. The U. S. Department of Education uses this definition of giftedness (Hearne & Maurer, 2000):

> Gifted and talented children are those identified by professionally qualified persons who by virtue of outstanding abilities are capable of high performance. Children capable of high performance include those with demonstrated achievement and or potential ability in any of the following areas singly or in combination:
>
> - General intellectual ability
> - Specific academic aptitude
> - Creative or productive thinking
> - Leadership ability
> - Visual and performing arts
> - Psychomotor ability

Similarly, the Collins School District recognizes the broad definition in its highly capable program description:

> There is a continuum and range of student needs and learning styles. Included in this range are those students who have special needs created by their depth of understanding and insight, advanced academic skills, rapid rate of learning, aptitude for higher levels of thinking, and capacity for creative thinking.

> Programs for the highly capable students will address these special needs by ensuring the acquisition of basic skills, developing a differentiated curriculum and providing specialized learning opportunities. Teachers will provide a stimulating classroom environment and engage students in high level thinking and productive learning experiences that appropriately challenge each student.

Persson (2012) argues that we must be culturally sensitive in our definitions of giftedness and that there may be a problem of cultural blindness in certain scientific circles, both in how the construct of giftedness has been developed and in the selection of methods used to study it. Persson continues to suggest that generalizations from gifted research are distorted due to socio-cultural bias and apply ethnocentric theories of giftedness. Perrson's concept of "cultural distance" is a useful one when comparing the applicability of research findings from one country to another. Persson considers the United States lens on gifted research "culture-blind" and argues we should be cautious about indiscriminately imposing theories of giftedness on other cultures. He advises that "... social science cannot remain credible unless all scholars re-evaluate their role and their work in the light of cultural variation" (p. 36). Ideas about cultural dominance espoused by Persson are thought-provoking and worthy of consideration, yet what remains unclear is how effectively these can inform day-to-day educational practice.

Sources of Disproportional Representation in Highly Capable Programs

As stated earlier, children from culturally/linguistically diverse and/or economically disadvantaged families and gifted children with disabilities have been dramatically under-represented in programs for gifted students (Castellano, 2003; National Research Council, 2002). The reasons are complex and include an over-reliance on standardized tests, narrow conceptions of intelligence and the resulting definitions of giftedness, and the procedures and policies that guide local and state gifted programs. A child's pre-school experiences and the nature of early classroom experiences are probably just as important because they set the stage for later academic success. No amount of effort has thus far produced a successful long-term solution to this under-representation.

The perpetuation of a low number of African American and Hispanic students in highly capable programs could be grounded in part by deficit thinking and institutionalized by recruitment and retention barriers, limited access and opportunity, and testing and assessment issues. Since giftedness is often operationalized as *outstanding academic achievement* as measured by standardized tests, and, implicitly, achievement in English, students from economically impoverished backgrounds and with limited proficiency in English may have greater difficulty demonstrating such achievement (Kitano, 2003). For example, Hispanic and Navajo students' characteristic cultural values include being collaborative rather than competitive, and they accomplish more and worked better in small groups than individually. Traditional behaviors attributed to academic giftedness are "high grades, high scores on standardized achievement and aptitude tests, and strong classroom performance" (Briggs, et al., 2008, p. 132). Yet Briggs et al. noted that racial and cultural customs influence the manifestations of advanced behaviors not comparable to the norm, often causing the misidentification of culturally diverse students. Continued under-representation of underserved student populations in gifted programs will persist unless a conceptual and procedural shift occurs among educators and other stakeholders in the nomination and identification procedures (Callahan & McIntire, 1994; Van Tassel-Baska, 2007).

The criteria for determining the standard of what qualifies as a gifted student varies as much as the definition of who is the gifted child. At present, standards established are based on definitions of intellect and patterns that often misclassify and segregate the under-represented student, contributing to the inequity of opportunity, with horrifying consequences for diverse cultural groups. Public schools have the challenging practice of grouping and identifying students for purposes of program selection. In such a situation, whether they know it or not, teachers may be the conduit of identification bias. History suggests that when prejudice concerning other cultural groups (conscious or unconscious) impacts a teacher's perception of intelligence, bias is inevitable. Research indicates that ethnic groups of low socio-economic background are at a disadvantage for appropriate academic placement. Abell and Lennex

(1999) concluded that teachers lacking training were unable to identify gifted *disadvantaged* students compared to their more economically affluent peers, thus, creating an even narrower gate by which students of color might be identified. Borland (2004) mentions that gifted education could not be considered the primary catalyst for the achievement gap among a diverse student population; it is the moral and political responsibility of leaders to embrace the matter of the under-representation of blacks and Hispanics in highly capable programs.

A fundamental issue crippling highly capable programs is the absence of an appropriate identification and selection process that recognizes high academic intelligences in culturally diverse students. There are several factors that contribute to this pattern. Traditionally, a single high IQ score on an aptitude and/or achievement test is the singular criterion guaranteeing selection. Renzulli (1978) called this "restricted" definition of giftedness that limited the number of performance areas that must be attained before a positive identification is made. Tests may be biased when they systematically place a minority group at a disadvantage in relation to the majority group. Consequently, the minority group scores continue to be significantly lower than their counterparts, thus increasing the opportunity for misconceptions about diverse cultural intelligence.

Moving Toward Cultural Responsiveness and Equity in Highly Capable Programs

Passow and Fraiser (1996) recommend that a new paradigm of identification be adopted, that reflects different ways in which students display giftedness, and they suggest that varied and authentic assessments are more successful in identifying students in diverse populations. They further propose that multiple criteria be used, including more nontraditional measures such as observing students interacting with a variety of learning opportunities. Areas of the selection process to be broadened include criteria that better represent a more divergent manner by which to measure the cultural cognition of the diverse student population—e.g., tests of creativity, nominations by parents and teachers, portfolios, student performance and/or a combination of these options.

A study by Lohman (2005) does just that. His study simply provides opportunity for IQ adjustments based on cultural differences. He suggests, if a Caucasian, middle class student needs an IQ of 135 to qualify for highly capable programs and African Americans score 15 points below Caucasians, then making the required IQ of 120 for African Americans would offer a more "equal" opportunity to participate in this selective educational opportunity.

The term "culturally responsive" can have numerous meanings and interpretations. At its core, it means that teachers work proactively and assertively to understand, respect, and meet needs of students from cultural backgrounds that are different from their own. Culturally responsive or culturally relevant teaching makes a concerted effort to infuse the principles of cultural representation into instructional and curriculum practices to facilitate and support the achievement of the variously present students. To be cultural responsive, Hans and Thomas (2010) found teachers need to understand their own biases and assumptions, learn about the cultural perspective of others, and use strategies responsive to varying cultural perspectives.

Research outlines numerous ways that teachers can develop their cultural competence, how curriculum of these programs can become more rigorous, and that teachers in these programs can be better supported through staff development and other means. Mason (1993) places cultural competence on levels noting that individuals and organizations can range from being culturally competent to being culturally destructive:

- *Competence* - Acceptance and respect of cultural differences, continued self-assessment, attention to dynamics of cultural differences, and adoption of cultural relevant service models,
- *Pre-Competence* - Individuals and organizations move toward acknowledging cultural differences and making documented efforts to improve.
- *Blindness* - The system of organization provides services with the expressed intent on being unbiased. They function as if culture makes no difference and all people are the same.

- *Incapacity* - The system or agency does not intentionally seek to be culturally assaultive and lacks the skills/resources to work effectively/responsively with culturally differently individual/groups.
- *Cultural Destructiveness* - Attitudes, policies and practices negatively affect diverse individuals and groups. (Mason, 1983).

As classrooms become more culturally diverse, teachers will need to deliver more differentiated instruction for ethnically diverse learners. Teacher expectations, their recognition of different learning styles, their perceptions of intelligence, and a culturally responsive pedagogy make the difference in providing a culturally responsive environment. However, "teachers inadequate knowledge of cultural competence as it relates to diverse minority student population produces a lacks of effective pedagogy for students and their families" (Correa, Blames-Reyes, & Rapport, 1996). A contributing factor is pre-teacher programs and professional development supports that do not sufficiently prepare teachers to instruct and support students from diverse backgrounds. This eventually leads to students of color that are not well prepared to enter highly capable programs.

The teacher's ability to identify the highly capable student is just as important as their pedagogical skill and expectations. The distinctiveness of the gifted student's unique needs cannot be easily quantified. Generalizations can be made about how they synthesize ideas and acquire basic facts easily and with great breath in comparison to their counterparts. The need for a flexible and non-traditional curriculum will provide for optimum growth of exploration of ideas and abstract concepts (Berger, 2014).

The identification process would also benefit from identifying strength-based protocols and effective professional development. Cultural responsiveness includes "using the cultural characteristics, experiences, and perspectives of ethnically diverse students as conduits for teaching them more effectively" (Gay, 2002, p. 106). And professional development could provide the kind of classroom instructional supports for the varied ethnically diverse student that could represented and participate in a highly capable program.

The "deficit paradigm" offers a perspective about low achievement amongst minority students. The paradigm assumes that intellectual and temperamental differences among racial groups are innate and unresponsive to educational practices. This perspective attributes the achievement gap to minority students and their families who have cultural practices, values, and characteristics that are deficient for academic achievement (Lewis et al., 2008; Ford, et al., 2002). If educators assume that giftedness is simply an innate attribute and students of color are unlikely to possess it, then it is irrelevant to pay attention to matters such as student motivation, scaffolding of rigorous curriculum, differentiation of instruction and curriculum, nurturing academic prowess, and cultural relevant pedagogy as essential elements to the processes of recognition and identification of students of color. Paying no attention to improving the cultural responsiveness of instruction will mean that instruction will remain culturally unresponsive, with likely detrimental effects on students who are or are assumed not part of the cultural mainstream.

Collins' Approach to Professional Development

An effective and systematic approach to professional development informs teacher practice and instructional implementation, which leads to better student achievement. Does a school district's approach to professional development address the aspects of teaching that increases the identification of students of color as eligible for the highly capable program? The Collins School District serves a very diverse area and is changing its approach to professional development to see if it has an impact.

On its Professional Development website page, the district indicates various categories of continued learning opportunities for teachers. They include assessment, education reform general interest, literacy, special needs, teaching & learning, teacher leadership, and technology. A few examples of the literary resources listed in the

Teaching & Learning section address matters that might help teacher learn better ways of working with culturally diverse groups of students:

- *A Framework for Understanding Poverty* (Payne)
- *Building Academic Vocabulary* (Marzano & Pickering)
- *Co-Teaching in the Differentiated Classroom: Successful Collaboration, Lesson Design, and Classroom Management* (Fattig & Taylor)
- *Educating African American Males: Voices from the Field* (Fashola)
- *Other People's Children: Cultural Conflict in the Classroom* (Delpit)
- *Teaching with Poverty in Mind: What Being Poor Does to Kids' Brains and What Schools Can Do About it* (Jensen)
- *Why Are All the Black Kids Sitting Together in the Cafeteria? And Other Conversations About Race* (Tatum)

On the surface, the district's resources appear to be sufficient and varied. However, it is unclear what the district provides in terms of systematic and ongoing teacher development for current and incoming teachers and whether it expects teachers to attend trainings and derive cultural relevant curriculum inspiration from them. Job embedded professional development in schools with highly capable programs is led by a Program Specialist that supports HCP teachers. The specialist addresses teachers' professional development needs and may follow up with planning, teacher modeling or student work analysis. But the intentionality of cultural relevant professional training for teachers and principals is still lacking. For example, Payne's *A Framework for Understanding Poverty,* while useful, omits the primary principles of cultural responsiveness. Nevertheless, the professional development listed on Collins' webpage and specifically supporting HCP teachers provides a systematic approach, and the district is now providing specialized training for all HCP teachers in grades 1-2.

The Leadership Work Ahead

The issue of disproportionality in highly capable programs is ultimately a problem of leadership. Leaders at three levels of the system – the superintendent and school board, central office leadership, and school principals and teacher leaders – will need to take action to find new ways to identify more students of color for highly capable programs within the district. Table 4 represents a sample action plan the district could follow to address the issue of disproportionality of students of color in its highly capable programs.

Collins' approach to serving talented students of color has areas where improvement is both important and possible. The low number of underserved students in gifted programs reflects systematic challenges. Educational leaders of academically successful districts serving populations of demographically diverse students recognize that the achievement gap has multiple causes and needs to be confronted with varied approaches, including training educators to understand the cultural differences of the students they teach (Rothman, 2001). Reducing barriers and access gaps among the student of color population will require a new look at curriculum adaptation, support for culturally responsive pedagogy, and more inclusive assessment criteria. Waters and Marzano (2006) found that when district leaders carry out their leadership responsibilities effectively, student achievement across the district is positively affected.

Table 4: Collins School District 3-Year Highly Capable Strategic Plan and Goals

Goal: Implement a 3-year strategic plan to increase access opportunities for students of color in the Collins School District's Highly Capable Program.					
Action Steps	**Person(s) Responsible**	**Resources**	**Implementation Timeline**	**Audience/ Communication**	**Outcome**
Develop 3-Year Highly Capable Strategic Plan and Goals	Superintendent and Board of Directors	• Collins End of Year and state HC Student of Color Enrollment Trends (5 years) • HC Research Based Evidence on the Success Student of Color • Research related to other districts successful	• Superintendent and Board of Directors work group June–August • August In-service District Meeting to Share with Central Office Directors and Principals • November, March, June and August	Superintendent, Central Office Directors, Principals	• Share HC Strategic Plan and Goals • Share 1st Year District and School Responsibility Plan • Establish Central Office Directors and Principal Responsibility
Develop 1st Year District and School HC Action Plan	Central Office and PD/HC/ Curriculum Directors	• 3-Year Highly Capable Strategic Plan and Goals • Collins End of Year and state HC Student of Color Enrollment Trends (5 years) • HC Research Based Evidence on the Success Student of Color	November, March, June and August	Central Office, Curriculum, PD, HC Director(s) and Principals	Share 1st Year Implemented District and School Responsibility Plan
Develop School Highly Capable Goals and Actions	Central Office and Curriculum Directors	• District Strategic Plan and Goals • School Student Data	Monthly Meetings: August – June	Central Office, Curriculum Directors and Principals	• Monthly Meetings • Establish Monthly Goals
Implement School HCP Goals	Principals	• School Student Data • School Feedback forms	Monthly Meetings: August – June	Principal and Classroom Teachers	• Monthly Meetings • Establish Monthly Goals
School-level Professional Development	Principals and Classroom Teachers	• School Student Data • School Feedback forms	Monthly Meetings: August – June	Classroom Teacher	• Monthly Meetings • Establish Monthly Goals

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Providing Equitable Access to Rigorous Coursework in Rural High School: Using a Cycle of Inquiry Approach

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This article describes efforts undertaken by a rural high school and its community partner, using a Cycle of Inquiry (COI) approach, to assess the equity of access to rigorous coursework. The COI methodology takes a systems view, engaging multiple perspectives using data to inform decision-making, and employing a variety of methods to identify policies that affect the issue. The article describes the school's amended processes and practices that will support district intentions that all students have equitable access to rigorous coursework.

Introduction

In June 2011, every 12th grader in a seven-district consortium in rural Washington completed a FAFSA, a 5th Year Plan, and applied to a postsecondary institution. This effort, funded as part of a federal college outreach program, doubled the districts' previous year postsecondary application rates; 93% of the students were accepted into their first or second choice schools, a remarkable outcome. However, a 2012 survey of these 2011 graduates found that only 40% had persisted in their postsecondary education, which was only 10% greater than historical levels. Survey findings from nearly half the 2011 graduates indicated financial aid issues as a reason for not continuing their education, but students also cited an apparent lack of readiness for college level work. Student grades and test scores had indicated to admitting institutions that students were ready for college. What went wrong?

Research on rural students' postsecondary aspirations and success notes that these students face a variety of challenges (Peterson et al., 2015; Demi et al., 2010; Byun, et al., 2010). Such challenges include coming from a home environment where the will be the first in their family to attend postsecondary institutions; attending schools with less rigorous instruction; experiencing stereotype threat – believing that because of a student's heritage that she/she may not be capable of achieving at levels of their more advantaged peers; and seeing few professionals from their ethnic, cultural and linguistic backgrounds in their educational systems. Rural isolation limits students' exposure to jobs and careers that call for postsecondary training. Washington ranks third behind only Alaska and New Mexico as states with the highest percentage of rural English-language-learners (Johnson, et al., 2014), and most are Spanish-speaking Hispanic students.

In the investigation of equitable practices, policy considerations suggest that to reach equity, it is sometimes necessary to provide additional services for some students to overcome these students' lack of opportunity that may impede their success in school (An, 2013; Adelman, 2006; Allen, 2012; Auniga et al., 2005; Dougherty, 2014; Gay, 2000; Kyburg, 2007; Yang, 2007). One approach to improving students' postsecondary persistence is to encourage them to complete rigorous classes, such as AP or dual-credit courses, prior to postsecondary enrollment (An, 2013; Allen, 2012; Bailey, 2002; Wood, 2010). An's research in particular found that under-represented students (e.g., low income, first generation, students of color, English language learners) benefit ***more*** from completing such classes than high-income, high-performing students who will likely complete postsecondary programs with or without the benefit of rigorous coursework.

This study was conducted in one high school where 100% of seniors had made full application to a postsecondary program. While the experience of one school may not be representative of other high schools, the process for reviewing district policies that might impede a student's access to rigorous coursework may help other districts to uncover policies that may inadvertently restrict access to such coursework for under-represented student populations.

The high school examined enrolled approximately 400 students, of which about half were Hispanic and about half were Caucasian. Almost 60% of the students qualified for subsidized meals (FRL) and more than 15% were English language learners. Their 4-year graduation rates typically exceeded 96%, and more than 90% of the students met standard on the state end-of-course math exam.

Objective and Methodology

The issue investigated in this study was as follows: Do students in this rural high school have equitable access to rigorous high school coursework?

The format of analysis was a Cycle of Inquiry (COI). A cycle of inquiry approach is similar to action research but takes a broad systems approach. It starts with a problem of practice (POP) for anchoring the inquiry and developing a locally-relevant theory of action. Clear claims and triangulated evidence pinpoint the multiple dimensions of the problem locally, noting the role and impact on students, teachers and leaders. It starts with a clear focus on a specific group of students and the nature of their learning related to the problem. The cycle moves to examine the efforts of teachers or adult practitioners, reviewing their role, the nature of their practice, and how it affects the problem of student learning. Finally, it turns to analyzing how leader actions contribute to the problem.

The cycle continues with a systems-focused Theory of Action informed by an understanding of current system practices and building an evidence-based causal chain and rationale for proposed action that reflect local issues and practices, informed by knowledge of relevant research. Data gathering relies on both qualitative and quantitative sources, and engages multiple voices within the system to understand the problem and a logical solution. Taking action associated with the adopted Theory of Action includes defining measures of progress that identify if the approach is successful or suggesting how to revise the Theory of Action until expected outcomes are reached (University of Washington, 2015.)

The data collected for this analysis included quantitative data (current course enrollment, identification of students whose grades and test scores indicate readiness for rigorous coursework), process analysis (how is information regularly provided to inform targeted students of these options), and qualitative data (student focus groups, interviews with the principal, superintendent and counselors). Additional qualitative data included information shared from principal observations of teachers teaching rigorous coursework and informal principal feedback on teacher receptivity to research on student ability to benefit from rigorous coursework. The data were collected by various people, including the school principal, the site director, the author, grant personnel, and district-employed counselors to ensure there was broad learning in the collection of data about both policy and practice.

The analysis started with a review of data on course enrollment by ethnicity and gender. The author then reviewed policies for access to courses; observations of student, teacher and principal practice; principal observations of teacher's teaching practices; and qualitative analysis from student focus groups to further clarify students' enrollment decisions.

Course Enrollment by Ethnicity and Gender

Table 1 shows the distribution of enrollment in various courses at the high school by ethnicity and gender. Analysis of the data found evidence of unbalanced enrollment by ethnicity.

Table 1: High School Course Offerings and Enrollment by Ethnicity and Gender

	Enrollment			
	Ethnicity		Gender	
Course Title (number enrolled)	**Hispanic**	**Anglo**	**Female**	**Male**
Honors English 9 (19)	1	18	8	11
Honors English 10 (24)	6	18	17	7
Honors English 11 (21)	2	19	18	3
AP World History (17)	3	14	11	6
AP US History (22)	7	15	17	5
Sociology 201 12th (37)	14	23	17	20
College Level English 101 (14)	6	8	unk	unk
College Level English 105 (14)	6	8	8	6
Pre-Calculus (38)	16	22	17	21
Calculus (11)	1	10	7	4

- While data were collected on both gender and ethnicity, a review of data does not show any significant gender imbalances. Females are not disadvantaged in their enrollment in rigorous courses evidenced by enrollments which show that in four classes enrollments skew significantly toward female over male; in the other six classes, they are near parity with males.
- In this district, Hispanic students enroll at significantly lower rates than Anglo students in a majority of courses offered. The district offers ten rigorous and advanced courses (AP, College in the High School, Honors), and in eight of ten classes, Latino/a students do not enroll in numbers consistent with their student body percentage. Elite colleges note enrollment and scores in AP and advanced classes in admissions decisions, and Hispanic students are disadvantaged without these courses on their transcripts.
- Participation in two classes, College Prep English 101 and 105, mirror student participation rates in. This class was added in August 2014 but total student enrollment was low. Nevertheless, Hispanic and Anglo students enrolled in numbers consistent with their representation in the student populations.
- Some classes have significantly greater enrollment disparity than others, evidenced by Honors English classes which show that in 9, 10 and 11 Honors English there was a 1:16, 6:18, and 2:19 ratio of Hispanic to Anglo students.
- The district inadvertently advantaged Anglo students and their parents in (1) the mix of courses offered, and (2) policies or practices that prompt a student to enroll in these courses. The principal reported that any student can request placement in the rigorous coursework, and that he schedules classes in response to student enrollment. He acknowledged that Anglo parents are "more savvy" and likely to ensure their child enrolls in rigorous coursework. Using student enrollment as evidence of student need likely advantages current Anglo enrollees. A new College Board report uses district data from SAT and PSAT to identify how many students could pass 16 different AP classes if these courses were offered; the district has not yet engaged this report. Doing so might indicate how many more students, both Anglo and Hispanic, might be successful in rigorous coursework. The building has not surveyed all students to assess latent student needs or interests, choosing to offer rigorous courses the building has traditionally offered. A list of prerequisites were in place to screen student applicants interested in the Honors English sequences.
- Students get different support in assessing the value of rigorous course enrollment. A small group of Latino students (more informal than a focus group) at the school were asked if they had considered entering any of the seven accelerated classes for which they would be eligible in the 10th grade. This group had not been told about their readiness and likely ability to succeed in these classes. A subsequent focus groups with 11th grade students

(those that were enrolled and those that were qualified but NOT enrolled) found that students currently enrolled in rigorous classes had been specifically informed or invited:

> Student: "They actually sent us a letter for the English Class assignment that said, 'You were outstanding in English, and so we want you in this class.' So I sort of heard about it through the letter, from the teacher."
>
> Student: "It was just an invitation to an advanced class and I was going to just – want to address the recognition thing, and I wanted to have it look good on a resume or a college application."
>
> Student: "My mom and my grandmom both work at the school district and they're constantly telling me about it. Like even if you do take higher classes and you don't go to college but you're looking for a higher level job, it looks better on your resume, it helps you get that job, even if you don't go to college."

Nearly all of the students surveyed, whose grades would have qualified them for taking these classes who had not enrolled, indicated that they had not been asked or invited in overt ways to consider enrolling in these classes.

College Outreach Program Director Practice

Conversations with the college outreach site director responsible to counsel 9th and 10th grade students to be college-ready revealed the following practices.

- The director did not review grade nor test score data to see which students might be eligible for rigorous coursework, was not aware of how many classes were available nor when students could apply, was not familiar with research on the value of completing rigorous coursework, and therefore did not recruit students for these classes.
- The director also did not know which students had aspirations for careers requiring postsecondary training, especially at the 4-year level, as he had not surveyed his students to know their career aspirations and the educational demands these careers require although it was part of his job duties.
- Finally, the director voiced the opinion that under-represented students not enrolled in rigorous coursework choose not to engage in a demanding rigorous level academic work suggesting that any student could and would take the classes if only they were motivated to work hard.

Teacher and Counselor Practice

Teachers were more inclined to invite Anglo students than Hispanic students to enroll in these classes. Focus group responses indicated that at least 90% of students, Hispanic or Anglo, that enrolled in rigorous classes were specifically 'tapped' for the program, either by a letter of invitation or through specific teacher or counselor outreach efforts. An informal review at a staff meeting indicated to the principal that his teachers were not aware of the research indicating a value in taking AP or rigorous coursework for college persistence for under-represented students. Moreover, teachers of the Honors English classes established prerequisites for enrolling in these classes that were a deterrent to Hispanic student enrollment. Many of the teachers believed the class would be more than the students could handle.

Principal Practice

The principal had not used enrollments as a data measure for ascertaining student interest in rigorous coursework. When asked to provide a summary of the enrollment data, he provided it and noted, "I never reviewed this coursework enrollment data before. Where are my Hispanic students and why aren't they in these classes?"

When reviewing the classroom management style of one of the AP teachers, the principal had not anticipated the impact that the teacher's instructional approach might have on discouraging student enrollment. After reading focus

group comments by students that the teacher did not differentiate instruction and that students counseled other students not to take her class to protect their grade point average, the principal reflected that he could see that students were correct: his classroom observations of this teacher found that the teacher did not differentiate instruction to meet individual student needs.

Finally, the principal had in place what he believed was an equitable open-door policy ("any student can enroll"), but he did not realize that students did not understand the policy as he intended. Students chose to enroll only when invited. After reviewing student comments from focus groups, he saw that students were self-selecting themselves out of the classes, believing that if they were good enough, they would have been specifically asked to enroll.

The district program of rigorous coursework, with a focus on AP and Honors and limited 'college-in-the-high school' courses, gives students from affluent families an advantage. Hispanic and low-income students in the focus groups noted that they would be more interested in college credit earning classes to reduce their college tuition costs. There was a higher proportion of Hispanic students in classes that were college-in-the-high-school dual credit earning classes. Some students, including many Hispanic students, said they were concerned that taking an AP course would hurt their GPA — getting lower than a 3 on an AP test might mean they would not get college credit, and they did not think the extra time it took and the cost for the test was a good investment for them. Further, the principal had noted his belief that this array of classes reflected student interests and demand for programs based on how students or their parents historically signed up for courses, although he was aware that parents of Anglo students were more savvy about the value of AP coursework. The principal had not formally surveyed students to see if they might prefer different courses (dual credit vs. AP or honors) or evaluated the perceived difference for students of AP vs. dual credit coursework. In fact, the two new "College in the High School" classes with only 14 students were the only two of 10 classes where enrollment mirrored student enrollment (6 Hispanic and 8 Anglo students). This enrollment indicates the differential value some students would put on a dual credit versus an AP class.

Leader Practice

As the director of a college outreach program for several districts, my reflections during the inquiry process surfaced a number of significant insights.

- I was ill-informed about how students access rigorous coursework in the districts. I did not review or request enrollment information until fall 2014, so we lost opportunities for some 10^{th} grade students to enroll in rigorous coursework in their junior year.
- I focused my effort on working on general strategies to support lower performing students but neglected training the site directors to anticipate course selection patterns for high performing high school students that we should be monitoring. This left students, particularly first generation students, vulnerable to failure when they enrolled in postsecondary programs, as evidenced by the disappointing persistence patterns of the significant number of students who had been admitted to postsecondary programs in 2011.
- Although a grant supported all students to pursue rigorous postsecondary opportunities, I did not balance my analysis to oversee all students. In the environment of data-driven decision-making, I did not ambitiously collect available data to help me, my staff, and district personnel to act and ensure all students' postsecondary success. Recognizing the significant number of students who needed remedial support, I neglected those students who could have been successful in rigorous high school courses that would have better prepared them for postsecondary programs. As I reviewed the data, I realized that I had never directed my staff to collect such data. I had not investigated the data to understand what a significant benefit completing these courses would be, especially for first generation students. Once collected, the data were an instant conversation starter with my staff and with the district to ensure greater equity in access to rigorous courses.

Theory of Action

The following theory of action was created to conceptualize what needed to happen based on what had occurred and the related research.

If Leaders: Building Principal and College Outreach Program Director

Action	Rationale
If leaders review rigorous coursework enrollment data regularly to determine who is and is not taking advantage of rigorous coursework, and adopted a general policy to ensure course enrollment mirror building enrollments for both Hispanic and Anglo students…	Neither I nor the principal had used course enrollment data to ascertain the equity of enrollment in these courses (email, 11/14). Researchers recommend that all schools "must ensure that all students have access to and are proportionately enrolled in AP and other college preparatory courses" (Solorzano & Ornelas, 2004, p. 24).
If the principal and I shared this data with counselors and other administrators on their enrollment findings…	The principal shared that neither he nor his teachers or counselors were aware of these racial disparities, nor had I reviewed or shared this information with my staff.
If the leaders engage with students, through focus groups, 1:1 conversations, or informal engagement, to ascertain how students learn about these classes, how they assess the value of the classes to them, and to learn the student experience (actual or rumored) in these classes…	Student focus groups showed there was no sure and singular way for students to learn about these courses. Some students felt that the classes were only for those students who wanted to 'show off.' Some students had, or had heard of, bad experiences in these courses saying that teachers did not differentiate to help students who might struggle to be successful in the class.
If the principal observes teachers who teach rigorous classes with an eye to ensuring teachers are adequately differentiating the instruction to be supportive of Hispanic and Anglo students, or strong versus struggling students…	Students commented that students were 'left to flounder' if they were not able to keep up with the class; researchers note that students need more scaffolding and differentiation to help them succeed (Kyburg, et al., 2007); students felt they should have more help to move from high school to college-classroom expectations.
If I as a colleague and a collaborator engaged student focus groups to elicit information from students as to their reasons for engaging in rigorous coursework and I shared this information with teachers and administrators…	I had alerted the principals that I would be doing the student focus groups as part of my internship to assess the districts' college and career readiness. The sessions provided insights the building had not previously considered.
If I as a colleague provided summaries of the extensive literature that shows that students who complete AP, honors or other rigorous coursework do better in college classes and also in high school; if I also provided grant funding to send more teachers to Summer AP training to help them differentiate their instruction in these classes (Kyburg, et al., 2007)…	Research (Stephens, et al., 2014) indicates that first generation students encounter more obstacles to college completion than students with at least one college educated parent. An (2013) found significant benefits to degree attainment for first generation students who completed dual enrollment courses in high school. In fact, first generation students received a disproportionate benefit over students whose parents had college experience.

If teachers/counselors:

If teachers of rigorous courses accept the AP Summer training I fund to upgrade their skills and to collaborate with other teachers of rigorous coursework to learn how best to help Hispanic and Anglo students succeed…	Research (Wood, 2010) reports that teachers of AP classes who receive AP training are more likely than those teaching honors classes or general education to believe that all students can be successful in rigorous courses.
If teachers change their practice after the principal shares observations indicating that their practice may not be adequately inclusive to nontraditional (Hispanic, low income, ELL) students… (Teachers were constrained in making this change as the principal had not made differentiation for nontraditional students in rigorous coursework one of his 'look fors'.)	Students noted a specific class with a reputation of being too hard for most students; the principal agreed this class would be a challenge for some students (Conversation 11/14). The principal admitted he did not share concerns about differentiation with his AP teacher.
If counselors and teachers who affect the decisions of Hispanic and Anglo students to enroll in rigorous classes are made aware of the research that students who complete rigorous coursework do better in college…	A counselor who observed one of my student focus groups mentioned that he was not aware of the research I cited to the students nor were the teachers; with this information, he believed, teachers would take special effort to recruit more low income, first generation and Hispanic students.

Then both Hispanic and Anglo students:

Will be encouraged and recruited to enroll in rigorous coursework…	While the principal told me that all students engage with the counselor to sign up for classes each late spring, not one student remembered or reported talking to a counselor or advisor about these classes.
Will enroll in honors, AP or 'college-in-the-high-school' classes…	Students indicated that they are very positively affected by teachers' comments on their abilities; these comments were more important than parents' recommendations.
Will be successful in completing these classes which will make it easier for subsequent classes of students to take these courses….	The students were affected by reports of other students' experience in rigorous classes; positive reports could help encourage more students to enroll.

Taking Action

The following steps were taken to address these shortcomings and implement the theory of action.

- October 2014: After discussing the issues, the principal, site director and I agreed to partner in this analysis. The principal reviewed enrollment data of current class attendees by gender and ethnicity.
- November 2014: With the help of the principal, two student focus groups were conducted. One was with students currently enrolled in rigorous courses, and the other was with students who would have been eligible, but were not enrolled, in these classes.
- December 2014: The content of the focus group transcripts were reviewed, themes were identified, and I conducted a review of research on these issues.
- January 2015: A short synopsis of relevant national research on the effects of rigorous coursework on students, including under-represented populations was prepared and shared broadly among area rural educators.

- March 2015: Discussions began to review existing district practices in order to make changes for the recruitment of students to these classes in the 2015-16 school year.

The student focus groups added information that resulted in changes to the theory of action. The theory became more mindful of the informal communication networks that affected student enrollment decisions. The district had what they believed to be a race-neutral admissions and recruitment policy, but a review of actual enrollment data showed there were unintended impediments and students were interpreting messages in ways the district had not anticipated. Unconscious actions were defining a policy; consciously the principal believed he had an equitable system, with inequitable outcomes.

Two actions that were immediately initiated fell into the category of *information sharing* and *capacity building*.

- **Information Sharing:** Given the clear good will in the district to support both Hispanic and Anglo students, a first step to finding a more equitable practice for the district was in the sharing of data, engaging in discussions of issues raised by the data, and referencing research that explicates the issues in similar environments. The next step was be to ensure that teachers, counselors, board members, parents and stakeholders were aware of the research and the district's current statistics. The district has been steadfast in promoting a 'college going culture' with its strong support of the college-going grant and other district initiatives. The district has worked with area universities and colleges to bring in dual credit (high school and college) courses, and is now looking to add additional courses, including Spanish 103, first year college Spanish in partnership with Eastern Washington University, a specific nod to the appreciation of their Hispanic students and their Spanish language. The school has worked with other universities to plan for more college-in-the-high-school programs, which will come on line in the next two years. This new awareness of the value of rigorous courses to nontraditional students provides greater rationale for bringing in these additional classes and enrolling more students.
- **Capacity Building:** In the summer of 2015, two district teachers attended AP training funded by the grant. They joined 10 other teachers from neighboring districts and built a Community of Practice in the region. The district and grant personnel's intention in promoting AP training was to enhance teachers' repertoire of strategies for differentiating instruction in the AP or dual credit classroom, and to enhance their teaching acumen in the general education classroom.

  It was recognized that adding more students to classes and bringing in students requiring more support will challenge teachers, so the district and grant administrators have revised budgets to incorporate more in-class and after-school tutoring focused on supporting these students. The team will also follow the lead of programs accomplished at working with struggling students, like Agile Minds, and incorporate into AP classes some social/emotional concepts from the "Why Try" curriculum that the district is already promoting to students to help address stereotype threat and promote student success.

The teachers of Honors English sections have determined they will eliminate the prerequisites to some of these classes as a pilot program, recognizing that this became an impediment to some deserving students enrolling in these classes. They will have an open-door policy and will use grant resources to help support struggling students. In addition, teachers and counselors are being more deliberate in reaching out to students they believe would be successful in taking these classes; counselors are providing students who aspire especially to college or university programs to follow the research and complete at least one and maybe two courses before leaving the district. This has heightened the urgency to continue in discussions with area universities to facilitate dual credit course offerings.

To address students' perceptions that only a certain kind of student would do well in these classes, a cadre of near-peer 12th grade advisors called "Ambassadors" received training to go from class to class in the fall sharing information about the value of rigorous coursework and answering students' questions about how the classes are organized. Our student focus groups told us this was the optimal way to inform students about these classes:

Male student: "I feel like I could get the message better (if a student who had taken the classes spoke to us) than just having some adult talk to us - or like, reading it on a piece of paper -- you get a better connection out of it if you can talk to someone who did it."

As a result of these efforts, many foundational efforts were made to set in motion to affect a policy shift for this district to promote rigorous course enrollment.

- Course enrollment data is reviewed regularly to guide equitable practice in course enrollment.
- Research has been circulated and at least two staff meetings have engaged teachers in discussions about the need to bring more Hispanic students into advanced classes.
- Two of 19 teachers teaching core classes enrolled in AP training; others have completed the training in previous years.
- Teachers have voiced interest in more rigorous coursework training next year with College Board trainers, asking also to form PLCs with other rural district colleagues on this issue.
- The district and college outreach programs have developed a short training to prepare high school 'near-peers' seniors to convey the value of rigorous coursework to other students.
- College outreach grant administrators have provided flow charts for rigorous course recruitment in several adjoining districts to share this research and approach given the similarity of student populations in regional schools, to identify and eliminate any unintended barriers erected that would impede under-represented students' participation in rigorous coursework.
- Recognizing that with small student bodies, limited staff, and conflicting values of parents and students in assessing AP versus dual credit coursework, the principal and district is challenged to ensure all needs are met. Therefore, the author is engaged with College Board representatives and college officials to learn how to support district teachers to develop courses that can be both AP-qualified and dual credit (students earning a college credit for passing the class even if they do not pass with a 3 or 4 on the AP test, usually the requirement for earning college credit for AP coursework.)

Conclusions

The purpose of sharing this analysis of a single rural district and their efforts to address their policies to promote equitable access to rigorous coursework is not to promote the actions taken by this one district. The findings are specific to the district and may not pertain to other districts. The greater value is in understanding a systems process that recognizes that to make purposeful and lasting change is to engage an array of voices, including in-district and community partners, who bring an open mind and focus on student data to assure equitable educational resources are afforded to all their students.

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University of Washington Robinson Center for Young Scholars: A Review of Current Research

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This paper summarizes recent research undertaken at the Robinson Center for Young Scholars at the University of Washington. The summaries look at the impact of the Center's Saturday Enrichment Program, the experiences of students who graduated from its two early college entrance programs, and parental expectations on Asian immigrants.

Introduction

The University of Washington Robinson Center for Young Scholars (RC) has a rich tradition of providing challenging academic services to high ability students across Washington State and producing rigorous, empirical research based on its programs. These activities are in alignment with the center's mission:

> The mission of the Halbert and Nancy Robinson Center for Young Scholars at the University of Washington is threefold: **teaching, research, and service**. The Robinson Center is a leader in the nation for developing programs that serve highly capable young pre-college and college students.

The RC houses two different early college entrance programs, the historic Early Entrance Program (EEP) and the UW Academy for Young Scholars (UWAcad), which offer a variety of Saturday enrichment courses throughout the academic year and challenge students through the ever popular summer programs called Summer Stretch and Summer Challenge. For almost as long as innovative programs have been offered through the center, there have been researchers at the RC examining the participants, effects, and outcomes of those programs. A detailed overview of research conducted prior to 2009 can be found in Noble and Childers (2009).

More recently (2012-present) we have conducted the Saturday Enrichment Program (SEP) Math study (Chung, Hertzog, & Childers, 2014), an examination of teaching and learning in Saturday math enrichment classes; and the Alumni Study (Hertzog & Chung, 2015; Hertzog, Chung, & Campa, 2015), a 35-year follow-up of EEP, and the first follow-up of UWAcad alumni to better understand program impact and the personal, academic and professional outcomes of early college entrance graduates. Using data from the Alumni Study, two additional studies focused on the influence of parental expectations on decision-making for children of Asian immigrants (Chung & Hertzog, 2015; Chung, 2015). These collections of studies have resulted in numerous presentations at the state, national, and international level, an award-winning paper (Chung, 2014), and two journal publications (Chung & Hertzog, 2014; Hertzog & Chung, 2015). In this summary of our research, we provide an overview of ongoing studies at the Robinson Center and discuss directions for future research.

Saturday Enrichment Program (SEP) Math Study (Chung et al., 2014)

Math enrichment programs outside of school have the potential to meet the academic, social, and emotional needs of gifted students by providing an intellectual challenge, a motivated peer group, and skilled teachers who relish working with advanced learners. Extracurricular math programs have traditionally promoted talent development in math and related STEM disciplines by serving as an important facet of a STEM educational dose (Wai, Lubinski, Benbow, & Steiger, 2010). In the Saturday Enrichment Program (SEP), 40 elementary and middle school students (Grades 4-8) explored challenging math concepts not typically taught in their school math classes such as infinity, Pi, dimensions, and sequences.

The purpose of this research study was to explore the nuances of teaching and learning in Saturday math enrichment classes for students in grades 4-8. We investigated the impact of participation in math enrichment classes on students' learning as well as on their interest in and identification with mathematics. Gender and socioeconomic class differences in student academic and affective outcomes were also explored. We also documented instructional strategies that enhanced students' enthusiasm and motivation for learning math. Participants comprised both traditional student groups in gifted education and those historically under-represented in advanced STEM educational and career domains, including students of color, economically disadvantaged students, and girls. Data gathered from pre-and post-questionnaires and assessments, video documentation of classes, field notes, and student work indicated that students were surprisingly less interested in the content of their school math class after participation in SEP. Furthermore, students reported that SEP provided a more appropriate pace, challenge, and enjoyment. Pre- and post-measures indicated no significant differences in achievement or math identity were detected, and no gender or socioeconomic differences were found.

Alumni Study Phase 1 (Hertzog & Chung, 2015)

In this study, the researchers reported the phase 1 results of the 35th year follow up study of the UW Academy for Young Scholars alumni. The mixed-methods study included an 81-item web-based questionnaire and follow up interviews that were organized into seven sections: program impact, educational outcomes, employment outcomes, participant values, personal relationships, other/miscellaneous, and demographics. An email explaining the confidential study and inviting alumni to participate was sent to 587 alumni in October 2013, resulting in a 33% (192) total response rate.

The study found that the majority of alumni had achieved at high levels, were satisfied with their choice of going to college early, and were happy with their lives in general. More than half the respondents have attained graduate or professional level degrees (52.1%), and more than 20% are in progress towards attaining graduate or professional level degrees. For those who were working, more than 60% made at least $50,000 and 31% indicated a gross individual income of $100,000 or more. Although the majority of respondents felt the program positively influenced their lives, one-third of the respondents reported that the program had a somewhat or strong negative influence on preparing students to find satisfying friendships after college, and 43% of the respondents reported that the program had detrimental or very detrimental effects on the happiness of their romantic relationships. The mixed findings related to their socioemotional development resulted in ongoing investigations in this area.

EEP Life Confidence Study (Hertzog et al., 2015)

The Early Entrance Program (EEP) Life Confidence Study examined the socioemotional growth of the students who were the most radically accelerated. Data were analyzed qualitatively, and 35 follow up audio-taped semi-structured interviews revealed that the EEP participants were similar to the overall sample of alumni. Many of the alumni were successful in academics, were earning above the median income, and were positive about the decision to enter college early if they had to make the choice again. One former student stated, "The accomplishment of making it through the Transition School gave me life confidence." Many students commented on the social and academic benefits of having a cohort of talented, highly motivated, and like-minded peers. However, some students found the small cohort limiting and had difficulties assimilating into the larger UW community. Males in particular responded as having less experience and more awkwardness related to dating while in college because they were 2-4 years younger than most of their UW class peers. Many felt that living at home while at college limited their full college experiences, and several reported not having their "college experience" until they went to graduate school.

Study on Parental and Self Expectations for High-Achieving Asian American Women (Chung & Hertzog, 2015)

Asian immigrant parents often hold high expectations for their children to excel academically and professionally. Filial piety and the desire to make their parent(s) proud can motivate these children to achieve but can also place undue pressure on them. This qualitative study explored how seven Asian American women who entered college two to four years earlier than same-aged peers perceived their parental expectations and the influence of these expectations on their academic, career, and interpersonal decision making. In-depth interviews revealed that the majority of women experienced high parental expectations for academics and careers. The women indicated that their parent(s) had expectations for them to receive good grades in their college courses, pursue certain prestigious or stable career fields with medicine being the most popular choice, and get into top graduate programs in the nation. Only one indicated that her parent did not have many expectations for her and mentioned that she was probably an "outlier." Participants reported having high personal expectations for themselves in adulthood, although they were not necessarily driven by external motivation like top marks and achievement.

High parental expectations were attributed to ethnic culture and immigration for several participants. One reported that "I grew up in a very traditional Chinese family, so to start off, they had like two choices for me growing up: it's either a doctor or a lawyer" and then "in Chinese culture, the kids really don't have much say in education." Another shared that "like many immigrant parents" her parents wanted her to go to college, become a doctor, and marry a doctor. Several women reported experiencing parental pressures, social isolation, eating disorders, and depression during their college years. Researchers explored implications for their well-being.

Study on Parental Expectations and Career Decision-Making for Asian American Men (Chung, 2015)

This study on parental expectations and career decision-making for Asian American men expanded on the study of Asian American women. This mixed methods study (1) explored in more depth the influence of Asian immigrant parental expectations on academic and career decision-making processes for high-achieving Asian Americans through additional interviews, and (2) considered the role of gender in how parental expectations were perceived by purposefully interviewing Asian American men who entered college early. Six Asian American men completed an 81-item mixed methods survey and participated in in-depth follow-up interviews about their experiences. They recollected growing up in homes where education was valued and prioritized and where their parents expected them to work hard and do their best. These expectations were expressed in various ways – through explicit, verbal, and at times, repetitive messages about success in school, and also through implicit comments, behaviors, and nonverbal understandings. For almost all participants, both mothers and fathers shared high academic expectations on a united front. Furthermore, gender differences were critically examined by comparing results with the study of Asian American women. Like the women, the Asian American men in this study perceived high parental expectations that were influential in academic and career decision making. However, more women expressed specific and rigid career expectations compared to the men. Parental expectations were often internalized. Several participants also reported parental pressures, conflict with parents regarding expectations, experiences of failures, and depression during their college years.

Directions for Future Research

The Robinson Center staff are continually examining ways to improve the Center's programs and services. Future studies may delve into the impact of their summer and Saturday enrichment programs as well as programs designed to improve the students overall experiences at the University of Washington. Of particular importance to explore are ways to provide greater access to populations of students who normally are not included in these types of

enrichment and accelerated programs. In addition, we are continuing to explore ways to address the social and emotional needs of our students and to evaluate our current mentoring and parent programs.

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Rachel U. Chung, Ph.D., received her doctorate from the University of Washington in Educational Psychology and is a postdoctoral Research Scientist for the National Center for Research on Gifted Education (NCRGE) at the University of Connecticut. Her research interests are best described as an intersection between gifted education, mental health, and immigrant issues.

Dr. Nancy Hertzog is Professor in the area of Educational Psychology at the University of Washington, and the Director of the Halbert and Nancy Robinson Center for Young Scholars (https://robinsoncenter.uw.edu/). She has an extensive background in gifted education and expertise on curriculum development. In addition to studying the outcomes of Robinson Center alumni, her research focuses on teaching strategies designed to differentiate instruction and challenge children with diverse abilities.

Resources for Highly Capable and Gifted Students

Documents

National standards for gifted education	http://www.nagc.org/resources-publications/resources/national-standards-gifted-and-talented-education/pre-k-grade-12?id=546
A Nation Empowered	http://www.nationempowered.org
NGSS Accelerated Pathways	http://www.nextgenscience.org/ngss-accelerated-pathways
The Twice Exceptional Dilemma (NEA)	http://www.nea.org/assets/docs/twiceexceptional.pdf
Unlocking Emergent Talent (NGAC)	http://bit.ly/unlocking-talent
Identifying Talented and Gifted English Language Learners	http://bit.ly/identifying-gifted-talent

Organizations

Association for the Gifted (TAG)	http://cectag.com/
National Association for Gifted Students (NAGC)	http://www.nagc.org
NGAC Federal Update	http://www.nagc.org/get-involved/advocate-high-ability-learners/nagc-advocacy/federal-legislative-update
National Center for Research on Gifted Education	http://ncrge.uconn.edu/
Northwest Gifted Child Association	http://www.nwgca.org/
Prodigy Northwest	http://prodigynw.org/
Supporting Emotional Needs of the Gifted (SENG)	http://sengifted.org/
Washington Association of Educators of Talented and Gifted (WAETAG)	http://www.waetag.net/

Higher Education Programs in Washington State

Robinson Center for Young Scholars
University of Washington
Guthrie Annex 2, Box 351630
Seattle, WA 98195
http://robinsoncenter.uw.edu/
Contact: Nancy Hertzog (206) 543-4160

The Robinson Center is an internationally renowned center of gifted education and a national leader for developing programs that serve highly capable young pre-college and college students. Its early entrance programs prepare younger students for college and provide them with challenging, accelerated learning opportunities in a vibrant, intellectual community at the University of Washington. The Center also provides outreach through enrichment and summer programs that offer classes for highly capable Puget Sound students. The Robinson Center is a site for research and discovery of best practice in supporting highly capable young students. (For more information about the Robinson Center, see the paper on page 33 of this issue.)

Center for Gifted Education
Whitworth University
300 W. Hawthorne Road
Spokane, WA 99251
http://www.whitworth.edu/Academic/Department/Education/CenterForGiftedEducation/home.html
Contact: Jann Leppien (509) 777-4607

Whitworth is the only university in Washington offering degree programs in gifted education. The Center for Gifted Education provides several educational options related to gifted youth: a master's degree with an emphasis in Gifted and Talented that can be earned through either online classes or a combination of online and on-campus courses, a specialty endorsement in gifted education that can be earned online in one year, and professional development courses offered online and on campus.

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Editor's Note: OSPI recently received a competitive grant from the U.S. Department of Education (Jacob K. Javits Gifted and Talented Education) to develop programs and services related to the education of highly capable and gifted students. Over a 3-year period, OSPI will work on this "HiCapPLUS" project with the University of Washington's Robinson Center, Whitworth University's Center for Gifted Education, educational service districts (ESDs), and several school districts to (1) improve the identification and instruction of gifted and talented students, (2) develop online professional development and technical assistance modules on a wide range of topics related to highly capable/gifted education, and (3) make materials and services available through the ESDs. For more information about this project, contact Jody Hess, Program Supervisor for the Highly Capable Program (360-725-6171).

Just Pressing Buttons? Validity Evidence for the STAR and Smarter Balanced Summative Assessments

Jack B. Monpas-Huber, Marysville Public Schools

As long as American public school students continue to take tests, those in the field of educational measurement who develop and use tests are exhorted to uphold high standards of practice. For testing experts working in public school districts, this means being very clear about the purposes of various assessments and then being able to describe and produce evidence of validity for those purposes. This paper considers challenges to the validity of the STAR and Smarter Balanced assessments on the grounds of content and anomalies in administration. It then examines correlations between the test scores as evidence of validity. The results show strong correlations.

Introduction

Students in Washington public schools continue to take a steady stream of tests. Last spring, thousands of students across the state took the Smarter Balanced Assessments (SBA) in English language arts and mathematics as their end-of-year test. For many students, these high stakes tests were preceded by various district tests designed to predict their achievement on the SBA and provide intervention to students who showed signs of risk.

As long as testing continues, the field of educational measurement continues to hold its professionals to high standards of practice (AERA, APA & NCME, 2014). It holds validity as the most important consideration, and it exhorts developers and users of tests to strive for valid interpretations and uses of tests (AERA, APA & NCME, 2014). This means, first, articulating a validity argument—the interpretations and uses of a test in a given context (Kane, 2006)—then gathering different kinds of evidence for the validity of those interpretations and uses (AERA, APA & NCME, 2014; Kane, 2006; Messick, 1989). In my experience as a measurement professional charged with managing testing programs in American public school districts, this has meant three tasks: (1) clearly and publicly articulating the purposes of particular assessments and the different decisions informed by the data from these assessments by stakeholders at different levels; (2) framing vocal challenges to the validity of test uses as hypotheses to be investigated with data; and (3) being ready to conceptualize and produce evidence that the data can support those decisions. Validity work is not merely theoretical; it is important on a practical level in order to respond effectively to clearly articulated threats or challenges to validity (Lissitz, 2009). In this paper, I respond to a challenge from local educators to the validity of a district's use of online assessments to make decisions about students. I first consider the purposes and decisions of the assessments. Then I examine correlations between the scores of the assessments as evidence of validity.

Validity Argument for the STAR and Smarter Balanced Assessments

Last spring, over six thousand students in Marysville Public Schools students took the Smarter Balanced Summative Assessments (SBA) in English language arts and mathematics. The purpose of those tests was to measure students' proficiency with the knowledge and skills outlined in the Common Core State Standards in English language arts and mathematics. For high school students, the stakes for these tests are high; students will soon have to pass the tests in order to earn a high school diploma. For younger students, the tests can inform decisions about course placement; students who score below proficiency could be scheduled for an intervention class in place of an elective. For elementary students, scores below proficiency can place students on a list for additional instructional supported services provided by federal and state categorical programs.

For most of these students in my district as well as many of their peers in other districts, the spring SBAs were merely the last in a series of online tests—the STAR Reading and STAR Math tests—that the students took throughout the year to help educators benchmark student progress toward proficiency in reading and mathematics.

These tests had three purposes. One is to function as a universal screener of all students to identify students at risk of not reaching proficiency. A second is progress monitoring—to measure struggling students' progress toward proficiency in response to instructional interventions. A third is to provide outcome measurement for goal setting and program evaluation at the school and district levels. These uses of the STAR assessments to predict student achievement on the SBAs are based on "curriculum-based measurement", a theory of action that high quality, frequent growth measurement along with instructional interventions can help teachers and schools make more informed instructional decisions that will enable more students to meet grade level expectations (Stecker, Fuchs, & Fuchs, 2005).

Validity Challenge: "They're Just Pressing Buttons"

Although online testing is established in the field of testing, it is still very new to many educators in Washington State. As a result, some if not many educators view online testing with some skepticism. Reading assessment is a good example. Reading assessments like the Dynamic Indicators of Basic Early Literacy System (DIBELS) (Good & Kaminsky, 2002) or the Fountas & Pinnell Benchmark Assessment System (Fountas & Pinnell, 2010) require teachers to carefully listen as their students read a passage for a period of time, while observing errors that the students make. Some teachers who have used and understand one-on-one reading assessments like those are skeptical of an online mode of delivery that requires students to read a passage on a screen and respond to a series of selected-response items. These concerns are compounded when students have difficulties demonstrating their knowledge and skills on online tests, as some students did during administration of the SBAs last spring. After days of testing, the SBAs ran long for some students, and fatigue set in. Taken together, to some if not many educators these concerns amount to a deep skepticism of the value of the data from these assessments. Typical remarks included: "I saw students clicking through" and "They're just pressing buttons."

Validity Evidence: Correlations between STAR and SBA Scores

These concerns are understandable. Some students did "click through" one or both sets of online assessments due to lack of understanding of the test or its content, low motivation, low ability to construct responses on performance assessments, and/or test fatigue. The impact of these threats to validity is undeniable. If the test score fails for whatever reason to reflect the student's true knowledge and skills, then the score cannot support the weight of an instructional decision about the student; and when aggregated, the scores produce data that can lead to anomalous or misleading results. The task of the measurement professional is to assess the damage of these threats to the quality of the data. It is to undertake validation work.

Validation is scientific investigation into the meaning of test scores (Messick, 1989). This means suspending the anecdotes to take an empirical approach by reformulating validity threats as hypotheses and then testing them against the data from the assessment. In this case, if too many students answered randomly, then the distribution of scores would be random and not related to achievement. The way to test this hypothesis is to examine correlations between these test scores and scores from other tests of the same content area knowledge and skills.

Correlations are an important form of validity evidence in two ways. First, they are evidence of criterion-related validity, specifically predictive validity (Carmines & Zeller, 1979; Allen & Yen, 2002). This is when a predictor test, such as a STAR screener, is used to predict scores on a future outcome test, called a criterion test, such as SBA. Correlations between predictor and criterion scores are called validity coefficients (Allen & Yen, 2002). Strong validity coefficients between STAR and SBA scores would be evidence for the predictive validity of the STAR tests.

The second is that correlation is a measure (and therefore evidence) of reliability. Reliability is the extent to which a measurement instrument will produce the same or similar results across repeated measurements. Reliability is not

separate from validity; rather, it is an essential form of validity evidence (Messick, 1989) because an unreliable assessment does not measure anything.

Methods

To investigate the impact of these challenges to validity of the data, I examined the correlations among scores from the STAR and SBA assessments from last school year, 2014-15.

The population was students attending Marysville Public Schools in school year 2014-15 who took both the STAR Assessments and the Smarter Balanced Summative Assessments. Specifically, 3,669 students in grades 3-8 and 10-11 took the fall, winter and spring STAR Reading assessments and the Smarter Balanced summative assessments of English Language Arts; and 3,378 students in these same grades (except 10) took the fall, winter and spring STAR Math assessments and the Smarter Balanced summative assessments of mathematics. Marysville students are similar to the state as a whole. Table 1 presents basic demographic information about Marysville students compared to the state.

Table 1: Demographic Information, Marysville and State of Washington

	Marysville	Washington
October 2014 Enrollment	11,398	1,075,107
May 2015 Enrollment	11,227	1,070,756
% Male (October 2014)	50.9	51.5
% Hispanic (October 2014)	21.2	21.7
% American Indian / Alaska Native (October 2014	6.1	1.5
% Black / African American (October 2014)	5.0	4.5
% Native Hawaiian / Other Pacific Islander (October 2014)	0.8	1.0
% White (October 2014)	55.5	57.0
% Two or More Races (October 2014)	9.9	7.1
% Free or Reduced-Price Meals (May 2015)	46.2	45.0
% Special Education (May 2015)	15.0	13.4
% Transitional Bilingual (May 2015)	8.0	10.4

STAR Reading and Mathematics Assessments

The STAR assessments are computer-adaptive assessments of reading comprehension and mathematical ability. Both assessments use 34 items to locate students on a vertical scale spanning across grade levels from kindergarten to grade 12. Scores on both scales range from 0 to 1400. The tests take students approximately 20 minutes to complete (Renaissance Learning, 2014; Renaissance Learning, 2015).

Because 2014-15 was the first year of implementation of the STAR assessments in Marysville, and because teachers were encouraged to use STAR to progress monitor students, many students had multiple STAR scores spanning across months. For this analysis, I examined only students who had a complete set of STAR scores from fall, winter and spring, and a SBA scale score. For each student, for both the STAR Reading and STAR Math tests, I defined the fall STAR score as the maximum STAR score earned in the months of October and/or November, the winter STAR score as the maximum STAR score earned in the months of January and/or February, and the spring STAR score as the maximum STAR score earned in the months of May and/or June.

Smarter Balanced Summative Assessments

The Smarter Balanced assessments are online assessments of English language arts and mathematics. Both assessments have two parts: a computer-adaptive test (CAT) and a performance task (PT). The CAT took students through a series of selected-response and technology-enhanced items designed to produce a reliable student scale score. The PT required students to experience a teacher-led classroom activity designed to provide common background and vocabulary before asking students to engage in a complex task designed to call upon multiple skills. The information gathered from the CAT and the PT placed students on vertical scales of achievement ranging from grade 3 to 11. Scores on both scales range from 2000 to 3000. Each content area assessment was estimated to take students approximately four hours to complete.

Results

The Pearson correlations between the STAR and SBA scores are reported in Table 2. With the exception of Grade 11, which saw very low student participation, correlations are strong across the board. In English language arts, correlations range from a low of .76 to a high of .81, and the spring correlations are generally higher than the fall and winter correlations. The mathematics correlations are higher than the ELA correlations, ranging from a low of .77 to a high of .87, and the spring correlations are generally higher than the fall and winter correlations.

Table 2: Pearson Correlations of Scores on STAR Benchmark Tests to Smarter Balanced Summative Assessment Scores

	English Language Arts				Mathematics			
Grade	N	Fall	Winter	Spring	N	Fall	Winter	Spring
3	653	.78	.78	.79	608	.82	.83	.85
4	573	.78	.78	.81	640	.81	.84	.87
5	579	.76	.79	.80	513	.83	.83	.85
6	550	.78	.79	.79	561	.82	.84	.86
7	449	.79	.80	.79	569	.81	.81	.82
8	443	.79	.80	.81	432	.79	.77	.79
10	261	.78	.79	.74	n/a	n/a	n/a	n/a
11	161	.61	67	.66	55	.50	.59	.52

Note. All correlations are statistically significant at $p < .001$.

Discussion

These correlations are good news. Together they offer important evidence of validity and reliability for the STAR and Smarter Balanced summative assessments. Strong correlations are also evidence of reliability (an essential form of validity evidence) because they mean that only a small fraction of the total variance in observed scores is due to variance from guessing rather than variance in true achievement (Carmines & Zeller, 1979). In more practical terms, strong correlations essentially mean that the two assessments have *sorted* students very consistently. This is an important point for two reasons. One is that it means we can use scores from a screener to make decisions about students even if the screener is not exactly the same as the outcome measure. To invoke the example of the reading assessment used earlier, some reading educators are quick to question the value of an online screener because it does not look or feel exactly like the criterion test using a more authentic form of reading performance. Strong correlations of a screener to the criterion measure suggest that the screener functions like the criterion even if it is

not exactly the same assessment. The second is that strong correlations of a benchmark screener to a criterion mean we can still make decisions from the screener even if students are learning and scoring higher on subsequent administrations of the benchmark screening tests, especially on a vertical scale where there is no grade level ceiling. This is because correlation is about sorting; on a reliable assessment, students who score two standard deviations above the mean in the fall should, even after three months of teaching and learning, score somewhere close to two standard deviations above the mean in the winter. A strong correlation between the screener and the criterion means a student who scores two standard deviations above the mean on the STAR screener also scores somewhere close to two standard deviations above the mean on the content area SBA. To return to the original issue of validity threats, these strong correlations suggest that the assessments produced data of sufficient quality to support instructional decisions about students and higher-level analysis of achievement gaps and program effectiveness despite some anomalies in the administration of the tests. In short, the STAR and SBA data, despite glitches, are not just noise but are in fact giving us real signals about achievement.

This information is reassuring and encouraging, but it should not be viewed as complete for two reasons. One is that this analysis of correlations occurred at the level of scale scores, but far more educators make decisions about students on the basis of performance levels (which are often color coded in databases and data displays) rather than scale scores. This means additional validity work is needed at that level. Such work should include diagnostic accuracy analysis of the sensitivity and specificity rates of different STAR cut scores distinguishing "At or Above Benchmark" from "On Watch" and "Intensive." At this writing, Renaissance Learning is collecting SBA data from districts throughout the Smarter Balanced Consortium in order to conduct a linking study that will produce new STAR benchmark cut scores predicting success on SBA (E. Stickney, personal communication, September 25, 2015).

The second is that strong correlation is not perfect prediction, insofar as some educators view prediction as validity evidence at all. This means that even with strong correlations between assessment scores, educators will still see some surprises and outliers that will capture attention and discussion. This is inevitable, because educators at different levels hold different conceptions of evidence (Coburn & Talbert, 2006), with teachers tending to place more stock in data collected from the classroom rather than standardized test scores (Guskey, 2007). Correlation and diagnostic accuracy work are helpful because they illustrate the pattern as well as the outliers that capture attention and discussion. Hopefully this work will stimulate thinking about validity and good practice of educational measurement in district and schools.

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White-Black-Hispanic Performance Gaps by Poverty Status

Andrew J. Parr, Washington State Board of Education

Analyses of National Assessment of Educational Progress data examined how the White-Black and White-Hispanic performance gaps for Washington student groups are changing over time. The analyses further examined the performance gaps by poverty status as measured by qualifying (or not) for the federal Free and Reduced Price Lunch Program. The analyses show that not all of the achievement gaps are changing in a similar manner. Some gaps are narrowing, some are widening, and others remain unchanged. Regardless of the measure, the performance gaps are unacceptably large.

Introduction

At its January 2015 meeting, the State Board of Education (SBE) heard that the White-Black and White-Hispanic performance gap reduction measures for Washington student groups were among the bottom performers of all the states for which the gap reductions could be computed. Data presented to the Board showed that the White-Black and the White-Hispanic performance gaps were large and were not narrowing (SBE, 2015a).

The analyses described to the Board showed that Washington was one of 11 states where the White-Black performance gap increased from the 2003 to the 2013 administration of the National Assessment of Educational Progress (NAEP), while the other 27 states showed a reduction in the White-Black performance gap. This means that the difference between the averaged scaled scores for the White and Black student groups were getting larger in Washington (over the course of the six NAEP administrations) while the scaled score differences were decreasing in most other states. The presence of large and increasing performance gaps challenged conventional thinking as the 2013 NAEP data show that the Black student group in Washington is among the highest performing of the states with a reportable Black student group.

Regarding the White-Hispanic performance gaps, the Board heard that Washington was one of six states where the gap increased on the NAEP administrations from 2003 to 2013. All other states with a reportable Hispanic student group showed a reduction in the White-Hispanic performance gap. Unlike the Black/African American student group, the overall performance by the Hispanic/Latino student group on the NAEP is typical of that by other Hispanic/Latino student groups across the country. The work described above formed the basis of two research briefs previously reported (SBE, 2015b; SBE, 2015c).

When considered together, the analyses provided evidence that neither the White-Black nor the White-Hispanic performance gaps have narrowed over the most recent NAEP administrations. In response to Board discussion and questions about the relationship of poverty status to the NAEP performance, this study frames the White-Black and White-Hispanic performance gaps in the context of poverty, as measured by the students qualifying for the Free and Reduced Price Lunch (FRL) Program.

This study addressed three research questions.

1. Does the White-Black performance gap on the NAEP assessments differ for student groups when poverty status (FRL or Not FRL) is considered?
2. Does the White-Hispanic performance gap on the NAEP assessments differ for student groups when poverty status (FRL or Not FRL) is considered?
3. Do any of the performance gaps show a change (increase or decrease) over the six most recent NAEP administrations?

Methods

To answer the questions, the NAEP 4th and 8th grade reading and math assessment data from the seven most recent NAEP administrations (2003 through 2015) were analyzed. The NAEP is an assessment program conducted by the National Center for Education Statistics (NCES) to inform the public of what students in the United States know and can do in various subject areas. The NAEP in reading and math is administered every other year to a representative sample of 4th and 8th grade students in each of the 50 states and the District of Columbia. The NAEP results are estimates of each state's performance determined through a statistical sampling of students. Results are reported by achievement level and by average scaled score with error bands (Bohrnstedt, Kitmitto, Ogut, Sherman, & Chan, 2015; NAEP, 2015a; Stoneberg, 2005).

The NAEP Data Explorer online tool (NAEP, 2015b) computes the difference between the average scaled scores for a NAEP assessment between two administrations for the groups being compared; in this case, Black, Hispanic, and White students by poverty (FRL) status. In this analysis, the performance (or achievement) gap is the scaled score difference by student group by poverty status by year. The NAEP Data Explorer computes a performance gap for each year queried and for any single administration. The performance gap can then be examined for different assessment administrations and the analyst can then determine how the performance gaps are changing over time.

In this work, the performance gap (scaled score differences) for each of the four NAEP assessments were computed separately, averaged, and collapsed into an average gap. In this manner, the average gap represents an overall performance gap derived from the four separate assessments. For statewide data exploration such as this, the methodology is effective in establishing a single measure or criterion for each student group for each year that reflects the overall performance as measured by four separate assessments.

The summary data for the White, Black, and Hispanic students by poverty status is shown in Table 1. Positive values in Table 1 (mostly between 10 and 20) mean that the average scaled scores for the White student group were 10 to 20 scaled score points higher than the average scaled score for the Black (or Hispanic) student group. We would hope to see lower values for 2015 as compared to 2003 for each of the student groups, as this would indicate that the performance gaps are narrowing over time.

Table 1: White-Black and White-Hispanic Performance Gaps by Assessment and Poverty Status

White-Black Achievement Gap*										
	4th Grade Reading		8th Grade Reading		4th Grade Math		8th Grade Math		Average Gap	
	Not FRL	FRL	Not FRL	FRL	Not FRL	FRL	Not FRL	FRL	Not FRL	FRL
2003	12.9	10.0	19.5	9.3	11.3	10.7	20.7	12.8	16.1	10.7
2005	13.7	2.9	17.0	17.9	12.6	11.1	20.5	11.0	15.9	10.7
2007	19.3	14.7	18.5	19.9	24.9	14.6	18.5	8.8	20.3	14.5
2009	20.1	8.0	26.3	18.8	14.5	9.5	17.1	15.6	19.5	13.0
2011	15.4	10.8	18.0	11.4	15.7	11.2	17.7	14.3	16.7	11.9
2013	11.4	16.0	14.7	15.2	13.0	7.9	12.2	17.7	12.8	14.2
2015	**	8.1	**	20.3	**	14.1	**	25.2	**	16.9

White-Hispanic Achievement Gap*										
	4th Grade Reading		8th Grade Reading		4th Grade Math		8th Grade Math		Average Gap	
	Not FRL	FRL	Not FRL	FRL	Not FRL	FRL	Not FRL	FRL	Not FRL	FRL
2003	10.0	19.2	10.6	18.6	8.6	12.3	7.3	14.1	9.1	16.0
2005	25.9	17.5	2.3	22.1	14.9	15.2	18.7	14.5	15.5	17.3
2007	16.6	12.6	13.7	18.0	21.4	14.5	21.9	17.2	18.4	15.6
2009	26.1	15.1	17.7	16.7	15.9	11.4	22.3	20.9	20.5	16.0
2011	16.6	20.8	20.4	12.6	15.4	15.5	22.2	13.3	18.6	15.6
2013	11.1	19.4	14.9	17.5	12.1	14.0	14.5	14.3	13.2	16.3
2015	14.5	23.0	7.1	18.6	12.3	14.9	16.9	13.1	12.7	17.4

* Average scaled score difference on the NAEP between White and Black student groups by poverty status and White and Hispanic groups by poverty status.

** The NAEP sample was insufficient in size so no data were reported.

Results

White-Black Performance Gaps

Figure 1 below shows how the performance of the White-Not FRL student group compares to the performance of the Black-Not FRL student group over multiple years. In combination and through the 2013 NAEP administration, Table 1 and Figure 1 show that the White-Not FRL student group consistently performs higher than the Black-Not FRL student group on all four NAEP assessments. Also, the White-Black performance gap decreased 1.5 to 8.5 scaled score points for each of the assessments, except for the 4th Grade NAEP Math where the gap increased 1.7 points.

When the 4th and 8th Grade NAEP reading and math assessments are combined and averaged, the White-Black performance gap (Average Gap on Table 1) for the Not FRL group decreased by approximately 3.3 scaled score points in 2013 as compared to 2003. The White-Black performance gap for Not FRL students was 16.1 points in 2003, increased to 20.3 points in 2007, and decreased to 12.8 points in 2013.

Beginning with the 2015 NAEP administration, the statistical sample of Black-Not FRL students was insufficient in size to generalize to the population. This means that the White-Black Not FRL performance gap cannot be quantified for the 2015 NAEP administration because scores for the Black Not FRL students were not reportable. If the trend line depicting the performance of the Black Not FRL group performance is accurate, the White-Black Not FRL gap would be expected to remain approximately the same or narrow by a small amount.

From this portion of the analyses, the data show that Black students who do not qualify for FRL are improving on the NAEP at a greater rate than are White students who do not qualify for FRL over the six NAEP administrations for which gaps are calculable. A closer examination of the results show that the Black Not FRL student group made substantial gains on the 2011 and 2013 4th and 8th grade reading assessments and modest gains on the math assessments. The White-Black performance gaps are mostly narrowing for students not living in poverty (Not FRL) but a substantial performance gap is evident for each of the years analyzed.

Figure 1: Performance Gap between White and Black Students in Washington, Not Low Income

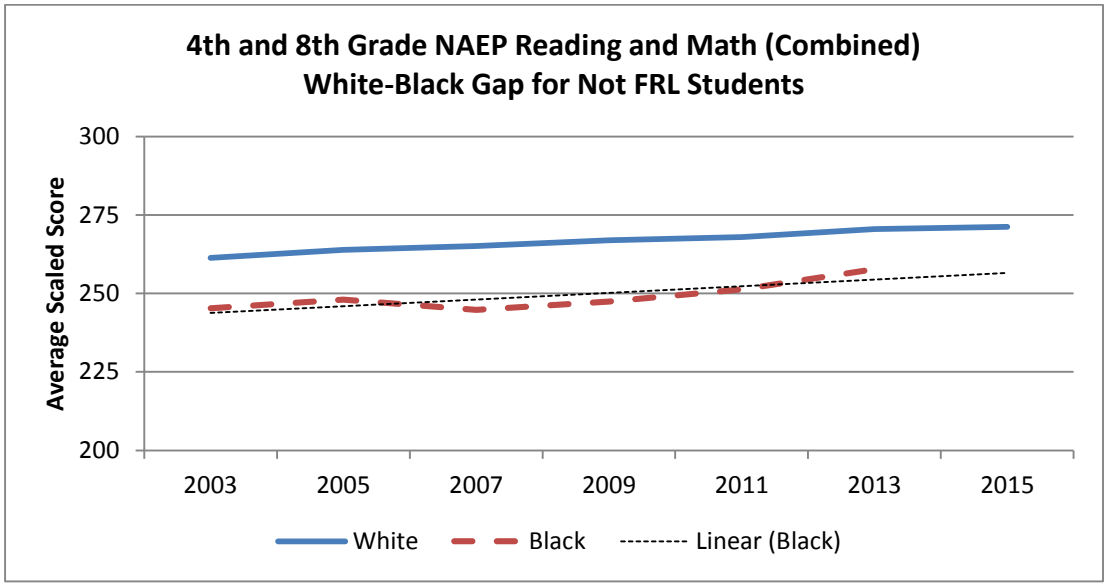
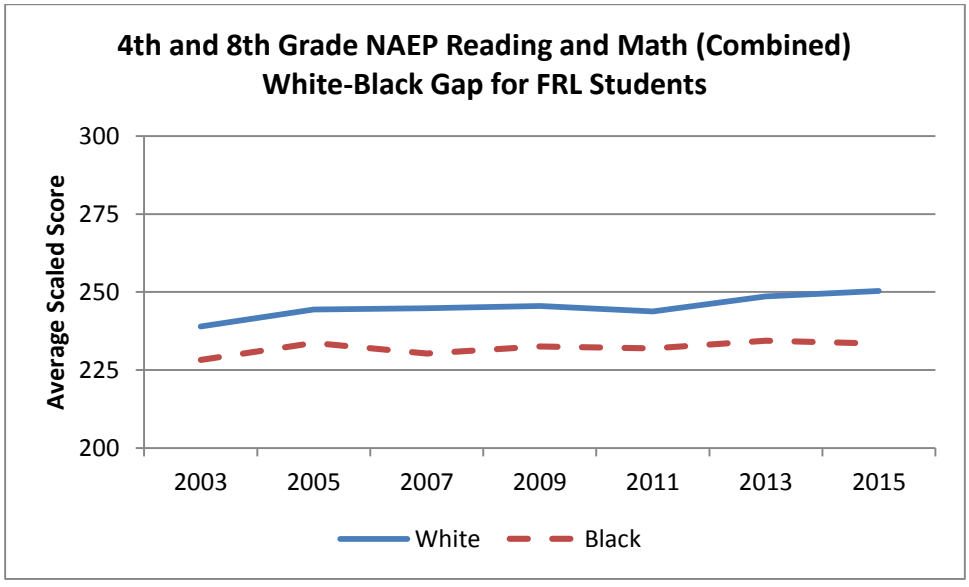


Figure 2 below shows how the performance of the White-FRL student group compares to the performance of the Black-FRL student group over multiple years. When used together, Table 1 and Figure 2 show that the White-FRL student group consistently performs higher than the Black-FRL student group. The White-Black performance gap increased 3.4 to 12.2 scaled score points for the assessments, and decreased for the 4th Grade NAEP reading where the gap decreased by 1.9 points.

When the 4th and 8th Grade NAEP reading and math assessments are combined and averaged for students qualifying for FRL, the White-Black performance gap increased by approximately 6.2 scaled score points in 2015 as compared to 2003. The increased performance gap was primarily due lower performance by the Black student group on the 2015 8th grade reading and math assessments. The White-Black performance gap for FRL student groups was 10.7 points in 2003 and increased to 16.9 points on the 2015 administration.

Figure 2: Performance Gap between Low Income White and Black Students in Washington



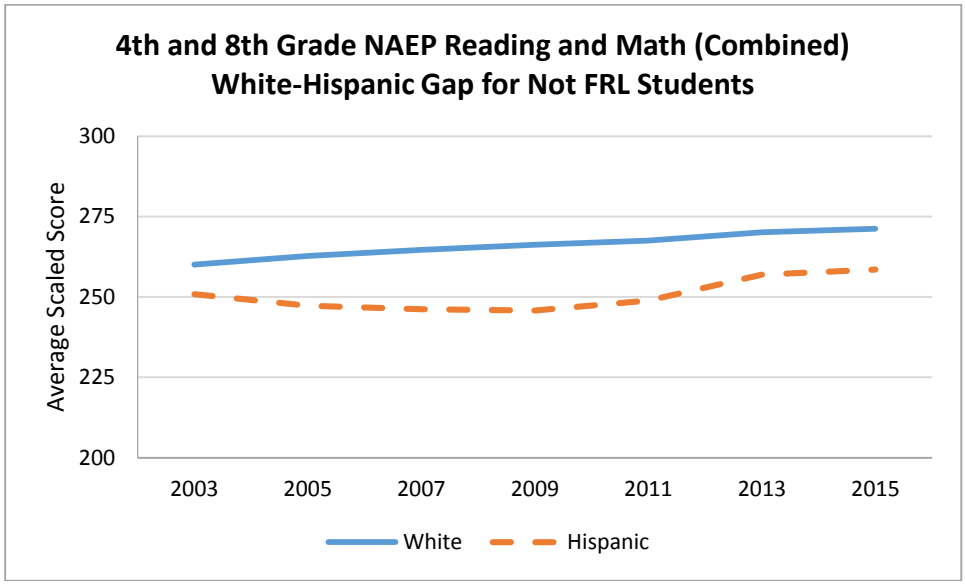
These data show that both the White and Black student groups who qualify for FRL are improving on the NAEP. However, the lower performance by the Black FRL student group on the 2015 NAEP in reading and math is noteworthy. Overall, the Black student group is improving but at a slower rate than the White student group. Nonetheless, the White-Black performance gaps are mostly widening for the students qualifying for the FRL program.

Research question one asked, does the White-Black performance gap on the NAEP assessments differ for student groups when poverty status (FRL or Not FRL) is considered? All of the student groups examined here are showing higher average scaled scores over time. However, the White-Black performance gap is narrowing for the Not FRL student groups but is widening for the FRL student groups.

White-Hispanic Performance Gaps

Figure 3 shows how the performance of the White-Not FRL student group compares to the performance of the Hispanic-Not FRL student group over multiple years. When used together, Table 1 and Figure 3 show that the White-Not FRL student group consistently performs higher than the Hispanic-Not FRL student group on all four of the NAEP assessments. Also, that the White-Hispanic performance gap increased 3.7 to 9.6 scaled score points for all of the assessments, except for the 8th grade reading in which the gap was reduced by 3.5 points.

Figure 3: Performance Gap between White and Hispanic Student in Washington, Not Low Income



When the 4th and 8th Grade NAEP reading and math assessments are combined and averaged, the White-Hispanic performance gap increases by approximately 3.6 scaled score points in 2015 as compared to 2003. The White-Hispanic performance gap for Not FRL students was 9.1 points in 2003, increased to 20.5 points in 2009, and decreased to 12.7 points in 2015.

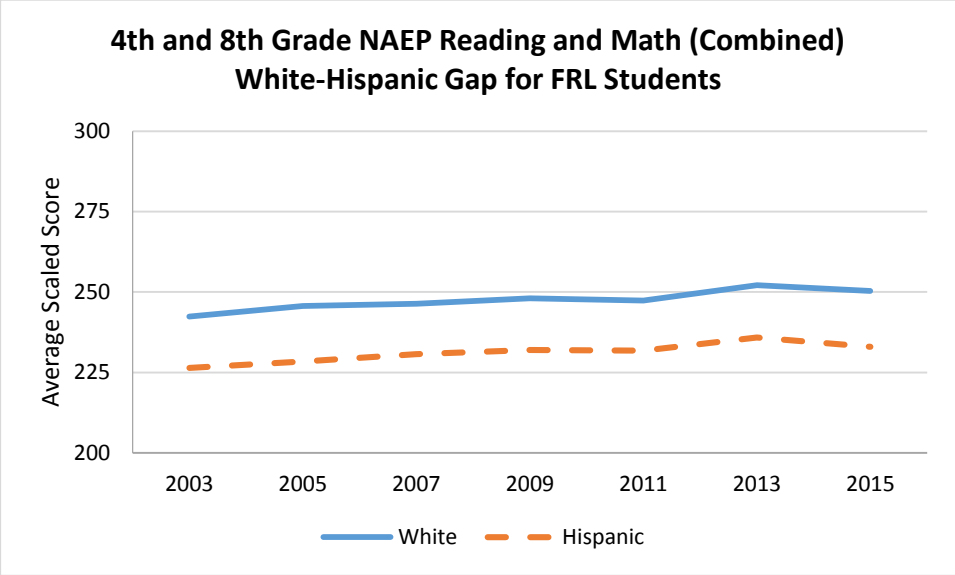
These data provide evidence that Hispanic students who do not qualify for FRL are improving on the NAEP but at a slower rate than are the White students who do not qualify for FRL. Admittedly, differences in the rate of improvement occur from year to year and are evident from the data. For the most part, the White-Hispanic performance gaps are widening for students not living in poverty (Not FRL).

Figure 4 shows how the performance of the White-FRL student group compares to the performance of the Hispanic-FRL student group over multiple years. When used together, the summary table (Table 1) and Figure 4 show that

the White-FRL student group consistently performs higher than the Hispanic-FRL student group. The White-Hispanic performance gap increased 2.6 to 3.8 scaled score points for the 4th grade assessments, decreased 1.0 points on the 8th grade math, and unchanged for the 8th grade reading assessment.

When the 4th and 8th Grade NAEP reading and math assessments are combined and averaged for students in poverty (FRL), the White-Hispanic performance gap increased by approximately 1.4 scaled score points in 2015 as compared to 2003. The White-Hispanic performance gap for FRL student groups was 16.0 points in 2003 and increased modestly to 17.4 points in 2015.

Figure 4: Performance Gap between Low Income White and Hispanic Students in Washington



Research question two asked if the White-Hispanic performance gap on the NAEP assessments differs for student groups when poverty status (FRL or Not FRL) is considered. The answer is "yes" – evidence from the NAEP assessments indicate that the gaps differ by poverty status. These data show that the White-Hispanic performance gaps are increasing regardless of poverty status, but the gap for students who do not qualify for FRL is larger than the comparable measure for the students who qualify for FRL.

Discussion

Research question three asked if there is any of the performance gaps that show a change (increase or decrease) over the six most recent NAEP administrations. The answer is "yes" – evidence from the NAEP assessment indicate that the performance gaps are changing and not all in the same manner. Read on for more information about how the performance gaps are changing.

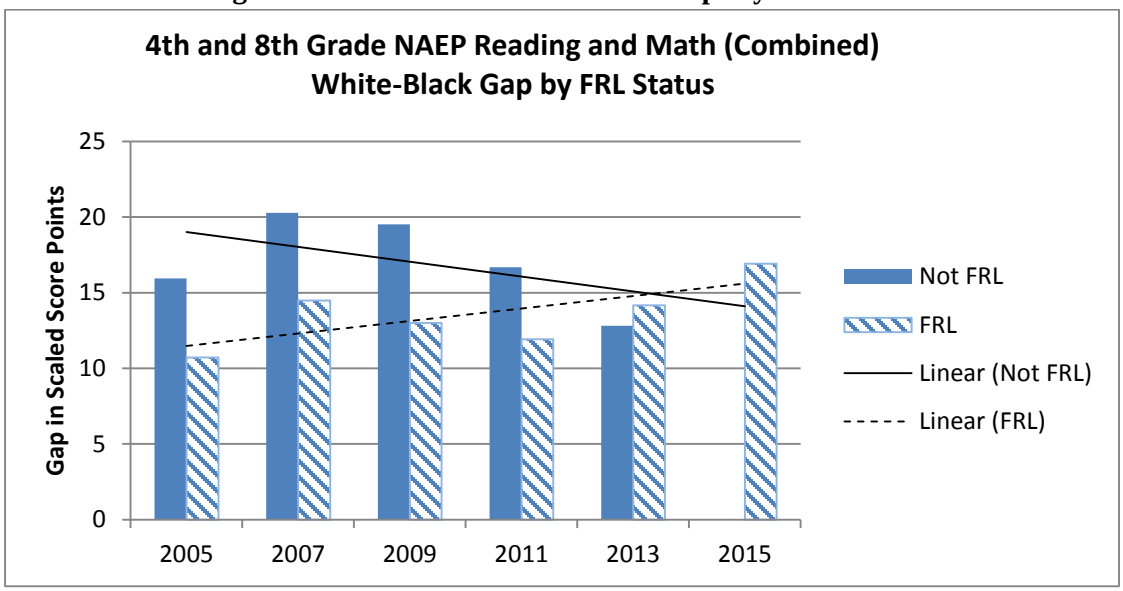
White-Black Performance Gaps

The performance of both the White student group and the Black student groups is improving for all of the NAEP assessments and for both the FRL and Not FRL student groups. However, the White student group continues to perform at a higher level than the Black student group on all of the examined NAEP administrations, regardless of student poverty (FRL) status.

Two curious and related findings are reported here regarding the performance gaps based on poverty status.

1. The White-Black performance gap is narrowing for student groups who do not qualify for FRL but widening for student groups who qualify for FRL. Trend lines are shown in Figure 5 and reveal how the trend lines intersect in 2013. This was the year in which the White-Black gap for the student group in poverty was very similar to the White-Black gap for the student group not in poverty.
2. The White-Black performance gap for the Not FRL group (16 to 20 scaled score points) was larger than that for the FRL group (10 to 14 scaled score points) for the 2003 to 2011 NAEP administrations. And in general, the year-to-year changes in the performance gap for the FRL group tracked the gap for the Not FRL group. However, on the 2013 NAEP administration and for the first time, the White-Black performance gap for the FRL group was larger than the gap for the Not FRL group.

Figure 5: White-Black Performance Gaps by FRL Status



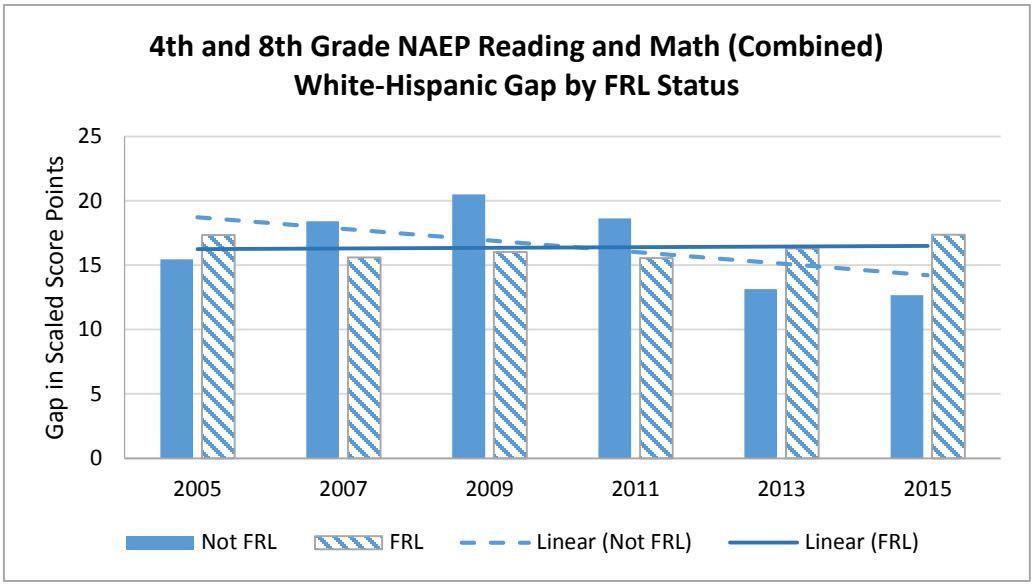
White-Hispanic Performance Gaps

The performance of both the White student group and the Hispanic student groups is improving for all of the NAEP assessments and for both the FRL and Not FRL student groups. However, the White student group continues to perform at a higher level than the Hispanic student group on all of the examined NAEP administrations, regardless of student poverty (FRL) status.

Two noteworthy findings are reported here.

1. First, the White-Hispanic performance gap was essentially unchanged for Hispanic students who qualify for FRL through the 2015 NAEP administration. However, the computed trend line shows a very slight upward trend, which indicates a slight gap increase. The scaled score performance gap is narrowing for Hispanic students who do not qualify for FRL, and the computed trend line has a negative slope.
2. It is evident that the performance gap for the Not FRL student group was larger than the corresponding gap for the FRL student group in 2007, 2009, and 2011, but that relationship was reversed in 2013 and continued in 2015. On the 2013 and 2015 NAEP administrations, the White-Hispanic gap for FRL student group is larger than the corresponding gap for the Not FRL student group.

Figure 6: White-Hispanic Performance Gaps by FRL Status



Summary

For the 2009 and 2011 NAEP administrations, the White-Black and White-Hispanic performance gaps for Not FRL student groups were larger than the performance gaps for the corresponding FRL student groups. This relationship was reversed for the 2013 results showing that the White-Black and White-Hispanic performance gaps for Not FRL student groups are now smaller than the performance gaps for the corresponding FRL student groups.

For students qualifying for the FRL program, the NAEP scaled score performance gaps are widening. The White-Black gap increased by approximately 6.2 scaled score points while the White-Hispanic gap increased by a modest 1.4 scaled score points. For students not qualifying for the FRL program (Not FRL), the White-Black performance gap decreased by approximately 3.3 scaled score points but the White-Hispanic gap increased 3.6 scaled score points.

Limitations of this Work

The NAEP assessment program provides an excellent database from which to monitor student progress. The online data tools allow for the assessment results to be aggregated in different ways, including by race/ethnicity following the pre-2011 student group methodology. So for all of the years of data shown here, student groups were aggregated following the pre-2011 methodology. However, the conclusions drawn from these data might still be impacted by the new, federally required, student demographic coding. Almost certainly, the disaggregation into additional student groups (including the Two or More student group) beginning in 2011 has an impact on this gap analysis. The White, Black, and Hispanic student groups were aggregated under the same business rules but it is very likely that some deviation from group comparability has occurred due to the new race/ethnicity self-identification options beginning in 2011.

One other potential concern is that these analyses do not account for the standard error or error bands that are included with the scaled score estimates from the online data exploration tools. This would be of greater concern if the analyses were intended to identify year-to-year statistical significance or if the analyses were to be used in a state level rank ordering (Stoneberg, 2005). The scaled scores reported by the online tool are the best estimates after considering all factors, so it is reasonable to report on those scores while acknowledging that the averages are estimates or approximations and do not factor in the associated error bands.

This work was designed to create a single measure for each student group that represents a total gap for combined reading and math. The methodology did not combine and average scaled scores; it averaged the performance gap that resulted from the score differences. Critics might contend that performance gaps should be reported separately for the student groups by grade level assessment to derive more meaning from the gap analyses. While recognizing the value of examining multiple gap analyses for certain work, this work was specifically designed to report on a total performance gap based on reading and math at 4th and 8th grades that is more understandable to a broader audience.

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About the Author

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THE PRIZE: Who's in Charge of America's Schools?

Book Reviewed by Pat Cummings, Tacoma School District

It was a bold experiment in educational reform. In 2010 Newark, New Jersey was the laboratory to document the effect of educational reform in a city raked by poverty and crime just eight miles west of Manhattan. Respected journalist Dale Russakoff chronicles the study in her new book, *"The Prize: Who's in Charge of America's Schools?"* (256 pp., Houghton Mifflin Harcourt, $27).

With great flair, Cory Booker (Democrat mayor), Chris Christie (Republican governor), and Mark Zuckerberg (26-year old founder of Facebook) found their way onto the Oprah show to announce a pact to "fix" Newark's troubled school system. Zuckerberg would donate $100 million with an understanding that it would be matched from other sources. Booker and Christie would work together, consolidate their political power, and make this initiative a blueprint for how to turn around a dysfunctional public school system. All three men had good intentions…the philanthropist and politicians really wanted this to work and be a blueprint for hope to some of our country's most vulnerable children. So the independent variables are the increased funding, focused cooperation, educational reform, and systemic change that will result in the dependent variable of a transformed school system.

What was the result of the experiment? The 5-year plan got off to a rocky start, then, on a steady slope, continued downhill. Rather than being a model for how to fix a broken school system, the experiment is now a road map for how *not* to do educational reform.

What went wrong? The list is long and may include poor communication, out-of-touch reform consultants, problems with collective bargaining, school closures and subsequent expansion of charters, just to name a few. But what I would like to focus on in *this* book review is specifically related to education statistics, the Student Growth Percentile (SGP) developed by Damian Betebenner (he presented at WERA's March 2012 conference). Betebenner's model for measuring student growth is used in half the states, including Washington.

When Mark Zuckerberg pledged his millions, a good portion of the money was to be targeted to financially reward effective teachers (merit pay). Christie and Booker were very interested in disrupting the Last In, First Out (LIFO) union contracts that supported traditional tenure rules with an aggressive test-based teacher evaluation metric. And all of this would be accomplished by taking a page from Arnie Duncan's Race to the Top book and using SGPs to measure student learning, then tie teacher evaluations and rewards to the student test outcomes. Easy peasy.

Unfortunately, it appears that the creator of the SGP later proclaimed that the algorithm was designed to measure student gains and losses but <u>not</u> to specifically assign blame or credit for the changes. Betebenner stated, "Simply focusing on teachers as being the only potential cause of growth of students is pretty obviously myopic." Most would agree that SGPs are a good starting point to begin discussion with teachers on why a population of students might be improving or losing ground. However, there are many, many factors that might contribute to change and the "teacher effect" is only small portion of the equation.

Betebenner noted, "A lot of high-stakes accountability has become self-defeating - focusing on the identification of bad schools, the bad teachers, as opposed to creating a signal and involving teachers in processes that lead to investigations and changes." But it turns out that the primary metric to measure teachers' effectiveness is somewhat unreliable and imprecise for the purpose. Thus, the ranking and sorting of teachers to award a bonus or determine layoffs is a bit arbitrary. Oops.

<u>The Prize</u> should be required reading for all interested in educational reform, especially those for whom accurate measurement is a professional priority.

Pat Cummings is the Director of Research and Evaluation in the Tacoma Public Schools.

Call for Papers for the WERA Educational Journal (WEJ)

We are currently seeking papers and other submissions for the May 2016 issue of the *WERA Educational Journal*. The WEJ is a collection of peer-reviewed academic papers, professional reports, research reviews, book reviews, essays, and commentaries of general significance and interest to the Northwest education research and practitioner community. The WEJ is issued twice a year (November and May). Papers for the May 2016 issue are due January 15, 2016.

Topics in the WEJ cover a wide range of areas of educational research and related disciplines. These include but are not limited to issues related to the topics listed below.

- Early childhood education
- Curriculum and instruction
- State and national standards
- Professional development
- Special populations (e.g., gifted, ELLs, students with disabilities)
- Assessment results covering various content areas
- Early warning indicators
- Social and emotional issues
- School and district effectiveness
- Teacher and principal evaluation
- Education finance and policy
- Educational technology
- Educational leadership

Papers should be of interest to a wide range of educators in the Northwest. Condensed versions of dissertations and theses that are reader-friendly are encouraged. For more information about the WEJ and its submissions, see the Submission Guidelines posted on the WERA website. If you have questions about the process or about possible submissions, please email Pete Bylsma, the WEJ editor, at WEJeditor@gmail.com or his work email at bylsmapj@mukilteo.wednet.edu.

The WERA Educational Journal is published twice a year as a peer-reviewed online journal. Submissions are welcomed from WERA members and others. Submission deadlines are July 15 and January 15 for publication in November and May. For information about the submissions process, see the Publications section of the WERA web site.

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