

# Framework for Understanding Lagging Student Test Scores in U.S.-Rationale and Strategies for Change and Improvement

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## Abstract

This paper will review U.S. lagging academic achievement, global ranking, 2015 PISA, and Common Core State Standards (CCSS). In addition, an evaluation of the 2015 PISA results and the role of state and federal government in public education will be examined. Furthermore, the discussion will evaluate the issue from the position of why scores are important from an international perspective. Finally, strategies for change and improvement to the public education system from a state and federal government context will be discussed.

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**Index terms**— PISA, common core state standards, CCSS, international student test scores, global ranking, academic achievement, immigrants.

## 1 Introduction

What might be some reasons for U.S. students' lagging academic achievement and ranking near bottom of 35 industrialized nations in math as compared to students in other countries? The researcher proposes analyzing student test scores in the U.S. from an immigrant country of origin perspective to calculate how far these learners have advanced with U.S. instructional methods. Studies and analysis from a longitudinal perspective might reveal surprising, positive results about instructional practice and immigrant learners' improvements since arriving in the U.S. From an educator's perspective, differentiating instruction can provide diverse paths to comprehending products, process, and content while addressing appropriateness when designing lesson plans for students' learning styles, interests, and strengths (Bandura, 2004; Patel, 2003; Subban, 2006; Tomlinson, 2017).

## 2 II. U.S. Lagging Academic Achievement, Common Core State Standards (CCSS)

A major international benchmark, in the math category, revealed test scores dropping for the second time for U.S. high school learners in 2015 (Barshay, 2016; DeSilver, 2017). This placed the U.S. in the bottom half of 72 regions and nations throughout the world who are involved in international testing known as Program for International Student Assessment (PISA) (Barshay, 2016; DeSilver, 2017). The U.S. now ranks 31st amongst 35 industrialized nations that are participating members in the Organization for Economic Cooperation and Development (OECD) (Barshay, 2016; DeSilver, 2017). Various Asian, and other countries, are homogenous (language, cultural, racial, emotional, behavioral, and socioeconomic) nations such as Singapore, Japan, Hong Kong, Taiwan, and Finland, for example, and typically rank higher than U.S. students in science, math, and reading categories. Most U.S. states are new to the adoption of the Common Core standards, thus it is too soon to meaningfully compare, contrast, and judge the most recent 2015 PISA results.

Implementation of the U.S. Common Core standards began in 2015 and proponents believe many years of aligned instruction will be required before reaching 15-year-olds (Barshay, 2016; DeSilver, 2017). Challenges presented by Common Core might present further problems with student test scores in the future as the material may only be effective when the student population is of a common culture. The U.S. is a nation with many, diverse nations within its borders. This will continue to present vast educational challenges with great diversity

## 4 STRATEGIES FOR CHANGE AND IMPROVEMENT

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and disparity in test scores. These issues illuminate various language, cultural, racial, emotional, behavioral, and socioeconomic challenges educators confront daily in the classroom. Furthermore, claims of bias in standardized testing have been raised by various stakeholder groups to justify these barriers exhibited by immigrant learners which can be vastly dissimilar to the host nation population.

What might be some reasons for U.S. students' lagging academic achievement and ranking near bottom of 35 industrialized nations in math as compared to students in other countries? This is a question asked by many, across many sectors and disciplines for decades, and the answer is simple. The U.S. is not a homogenous (language, cultural, racial, emotional, behavioral, and socioeconomic) country, thus producing great diversity in local, national, regional, and global test scores when compared to top ranking nations. Greater diversity, especially in language, cultural, racial, W emotional, and behavioral, categories, can account for disparaging scores. Socioeconomic diversity can also play a role in disadvantaging learners, but it is not unheard of for students from lower socioeconomic backgrounds to achieve when family, cultural, and behavioral components play a positive and formative role related to achievement, persistence, perception, and notions about success.

Culture and family values have always been areas that can play a considerable role related to success in spite of common socioeconomic disadvantages. Furthermore, the U.S. has experienced great influx in immigrant migration, for the last 60 plus years, from many other countries in the world that commonly score quite low in student test scores. Many of these students enter U.S. public education, far below, and at a great disadvantage too, students from the host nation. Moreover, many of these immigrant learners can have language, cultural, racial, emotional, behavioral, and socioeconomic barriers, in addition to various other challenges that can adversely affect test scores. Educators, curriculum, and instructional strategies in U.S. public education are typically blamed for low test scores while many other factors can play a significant role in developing a sound, deducible rationale. As the U.S. continues to have an unchecked, open-door policy regarding immigrant migration, these challenges will remain and continue to accelerate. As long as the U.S. maintains an unchecked, open-door policy regarding immigrant migration, low test scores will continue to be the result. The vast amount of uncontrolled, yearly migration to the U.S. for the last 60 plus years greatly impacts every aspect of the public education system. In addition, the continuous, heavy flow of new immigrant students to the system creates a bottleneck in how quickly educators can respond to immigrant student needs with instructional best practices. Furthermore, with class sizes continually expanding, addressing the needs of host nation students becomes a great challenge as well.

IV.

## 3 International Perspective and Importance of Student Scores

The Program for International Student Assessment (PISA) scores serve as a benchmark for student performance internationally. Student scores can be important from an international perspective for various reasons. The Institute of Education Sciences (IES) is the evaluation, research, and statistics branch of the U.S. Department of Education (IES, 2019). IES gathers and presents evidence based on scientific measures to offer a foundation for educational policy and practice decision-making (IES, 2019). IES gathers and updates this data in various formats that can be accessible and useful to the public, researchers, policymakers, parents, and educators (IES, 2019).

Evaluating student test scores from an international perspective can help education stakeholders identify areas for improvement and invest in further research to assist raising students' cognitive thinking abilities and educational performance levels. Furthermore, publishing and analyzing student test scores can help policy makers identify areas needing improvement. It could be beneficial to compare international test scores by cultural and racial identity when assessing U.S. test scores to examine how far immigrant learners have advanced from peers in countries of origin. This type of analysis might be more beneficial in understanding and comparing statistical data from an international perspective. Studies examining how far immigrant learners have advanced in the U.S. from peers in country of origin could be enlightening and serve to measure U.S. instructional practices from a more significant and comprehensive lens.

V.

## 4 Strategies for Change and Improvement

Strategies for change and improvement to the public education system from a state and federal government context have included, but are not limited too, funding, focus on teacher preparation programs, professional development, class size, curriculum research, No Child Left behind (NCLB) research, standardized testing, and Core State Standards (CCSS). As the unchecked, U.S. immigration policy will not be changing any time soon, educators are faced with serving the needs of vast amounts of yearly migrating immigrant students as well as host nation students to the best of one's ability with the resources available to them. With that stated, various strategies, techniques, theories, and research-based instructional best practices can be utilized in the classroom. Although these teaching strategies can be quite beneficial, educating and raising cognitive thinking and academic performance abilities, in vastly different learners, with vastly different challenges, from many areas throughout the world, will continue to be a formidable task for educators.

Strategies to improve student test scores and cognitive thinking abilities can include social cognitive theory, technology integration, self-management and social skills instruction, question and exploration strategies,

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differentiated instruction, off-task behavior techniques, appropriate behavior instructional strategies, standards-based curriculum, inclusive strategies, holistic approaches, authentic lesson planning opportunities, learning styles research, ability level grouping, student-centered learning, brain-based learning lesson design, and diversity lesson components (Bandura, 2004). Getting learners up to speed is not merely an issue of money or instructional practice. Immigrant learner difficulties in areas such as language, cultural, racial, emotional, behavioral, and socioeconomic will continue to present formidable challenges for educators. Assimilation takes generations and not all groups assimilate as one might assume. With the U.S. unchecked immigration policy and the continuous, heavy flow of new immigrants, these barriers to learning will persist not only with the vast amounts of yearly immigrants migrating to the U.S., but also present educational challenges for host nation learners as well. Since the researcher has explained that the U.S. is a nation with many nations within its borders, the researcher proposes analyzing student test scores in the U.S. from an immigrant country of origin perspective to calculate how far these learners have advanced with U.S. instructional methods. Studies and analysis from a longitudinal perspective might reveal surprising, positive results about instructional practice and immigrant learners' improvements since arriving in the U.S.

## 5 VI.

## 6 Conclusion

This paper reviewed U.S. lagging academic achievement, global ranking, 2015 PISA, and Common Core State Standards (CCSS). In addition, an evaluation of the 2015 PISA results and the role of state and federal government in public education were examined. Furthermore, the discussion evaluated the issue from the position of why scores are important from an international perspective. Finally, strategies for change and improvement to the public education system from a state and federal government context were discussed. Educators often labor to accommodate all learners with connection to various learning opportunities that might enhance individualized learning paths. What works best for some learners many not work for others and differentiated instructional learning techniques can assist in providing educational opportunities to learners with vastly different challenges (Bandura, 2004)<sup>1</sup>

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III.

2015 Pisa  
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With the  
2015 PISA  
results in  
mind,  
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might

be the role of state and federal government in public education? Many studies have been conducted for generations discussing state and federal funding in U.S. public education as well as studies related to class size, instructional best practices, curriculum, aligned standards, and teacher preparation or certification (Baker, Sciarra, & Farrie, 2015; Bulgren, Marquis, Lenz, Deshler, & Schumaker, 2011; Faul, Stepensky, & Simonsen, 2012; Finn & Achilles, 1990; Hanna, 2014; Murphy & Rainey, 2012; Russo, Batz, & Thro, 2015). The challenge with low student test scores continues to persist and will continue to steadily decline. The reasons are multifaceted and cannot rest merely in the areas of funding, classroom practices, or educator ability.

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spent vast amounts of money in many areas related to the challenge (Baker, Sciarra, & Farrie, 2015; Finn & Achilles, 1990; Hanna, 2014; Murphy & Rainey, 2012; Russo,

Figure 1:

Figure 2:

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- [Patel ()] 'A holistic approach to learning and teaching interaction: factors in the development of critical learners'. N V Patel . <http://cw.routledge.com/textbooks/0415332168/pdf/article.pdf> *The International Journal of Educational Management* 2003. 17 (6/7) p. .
- [Frantz ()] 'A peer-led approach to promoting health education in schools: The views of peers'. J M Frantz . *South African Journal of Education* 2015. 35 (1) p. .
- [About IES: Connecting research, policy and practice ()] *About IES: Connecting research, policy and practice*, <https://ies.ed.gov/aboutus/> 2019. U.S.
- [Finn and Achilles ()] 'Answers and questions about class size: A statewide experiment'. J D Finn , C M Achilles . *American Educational Research Journal* 1990. 27 (3) p. .
- [Dixon et al. (2014)] 'Differentiated instruction, professional development, and teacher efficacy'. F A Dixon , N Yssel , J M McConnell , T Hardin . 10.1177/0162353214529042. <https://doi.org/10.1177/0162353214529042> *Journal for the Education of the Gifted* 2014. April 8. 37 (2) p. .
- [Subban ()] 'Differentiated instruction: A research basis'. P Subban . <https://files.eric.ed.gov/fulltext/EJ854351.pdf> *International Education Journal* 2006. Shannon Research Press. 7 (7) p. .
- [Lawrence-Brown ()] 'Differentiated instruction: Inclusive strategies for standards-based learning that benefit the whole class'. D Lawrence-Brown . <http://mdestream.mde.k12.ms.us/sped/ToolKit/Articles/Differentiation/Lawrence-Brown%20ASE%2004%20DI%20scholarly.pdf> *American Secondary Education* 2004. 32 (3) p. . (Summer)
- [Russo et al. ()] 'Financing education: An overview of public school funding'. C J Russo , F M Batz , W E Thro . *School Business Affairs* 2015. 81 (10) p. .
- [Bandura (2004)] 'Health promotion by social cognitive means'. A Bandura . <http://www.uky.edu/~eushe2/Bandura/Bandura2004HEB.pdf> *Health Education & Behavior* 2004. April. (2) p. .
- [Tomlinson ()] *How to differentiate instruction in academically diverse classrooms*, C A Tomlinson . 2017. Alexandria, VA: ASCD. (3rd ed.)
- [Baker et al. ()] *Is school funding fair? A national report card*, B D Baker , D G Sciarra , D Farrie . 2015. Newark, NJ: Education Law Center.
- [Murphy and Rainey ()] *Modernizing the state education agency: Different paths toward performance management*, P Murphy , L Rainey . 2012. Seattle, WA: Center on Reinventing Public Education.
- [Hanna ()] *Seeing beyond silos: How state education agencies spend federal education dollars and why*, R Hanna . 2014. Washington, DC: Center for American Progress.
- [Bulgren et al. ()] 'The effectiveness of a question-exploration routine for enhancing the content learning of secondary students'. J A Bulgren , J G Marquis , B K Lenz , D D Deshler , J B Schumaker . *Journal of Educational Psychology* 2011. 103 (3) p. .
- [Faul et al. ()] 'The effects of prompting appropriate behavior on the off-task behavior of two middle school students'. A Faul , K Stepensky , B Simonsen . *Journal of Positive Behavior Interventions* 2012. 14 (1) p. .
- [Desilver (2017)] *U.S. now ranks near the bottom among 35 industrialized nations in math*, D Desilver . <http://hechingerreport.org/u-s-now-ranks-near-bottom-among-35-industrialized-nations-math/> 2017. February 15.
- [Barshay (2016)] *U.S. students' academic achievement still lags that of their peers in many other countries. The Hechinger Report*, J Barshay . <http://www.pewresearch.org/fact-tank/2017/02/15/u-s-students-internationally-math-science/> 2016. December 6.
- [Blood et al. ()] *Using an iPod Touch to teach social and self-management skills to an elementary student with emotional/behavioral disorders. Education and Treatment of Children*, E Blood , J W Johnson , L Ridenour , K Simmons , S Crouch . 2011. 34 p. .