Against Conventional Wisdom: Factors Influencing Hispanic Students' Reading Achievement

Author Info:

Mr. Percell is an Instructional Assistant Professor at Illinois State University. Ms. Kristina Kaufman is a doctoral student in Education at Illinois State University.

Correspondence regarding this manuscript should be addressed to Jay C. Percell, College of Education, Campus Box 5300, Normal IL 61790. Ph: (309) 438-3836. Email: jpercel@ilstu.edu

Abstract

The researchers performed a variable analysis of the 2002 Educational Longitudinal Study data investigating factors that influence students' reading scores on standardized tests. Hispanic and non-Hispanic Scores were analyzed and controlling variables were compared to determine the effect of each on both populations. Certain variables commonly thought to positively influence students' reading scores, such as family background, proved less statistically significant among the Hispanic population. Additionally, other variables usually associated with lower reading scores, such as urbanicity, were not. Implications of these findings are discussed and educators are encouraged to rethink variables that impact reading achievement among Hispanic students.

Keywords: Standardized Reading Test Scores, Hispanic Students

Introduction

According to Greenleaf et al. (2011) "our democracy and future economic well-being depend on a literate populace, capable of fully participating in the demands of the 21st century" (p. 648). Those demands have been well documented (Carnegie Council on Advancing Adolescent Literacy, 2010; Elrod, 2010; Futrell, 2010; Partnership for 21st Century Skills, 2011; Silva, 2008) and are reoccurring themes among education discourse which include the acquisition of a variety of "literacies" including information, media and ICT literacy as well as communication skills (Fleischman, Hopstock, Pelczar & Shelley, 2011; Partnership for 21st Century Skills, 2011). Personal and professional success begins with education and language development to create and communicate concepts and ideas. Thus, reading achievement and literacy practices in varied contexts are important foci for educators.

This study describes the analysis of data of over 15,000 reading assessment scores of 10th grade students in the United States. Data taken from the 2002 Educational Longitudinal Study (ELS) was analyzed to investigate and understand the variables that may influence reaching achievement among the Hispanic student population in this group as compared with their non-Hispanic peers.

Review of Literature

The ability to read and write and communicate with others is foundational to fulfilling academic, personal and professional goals. A reoccurring theme of student success is in the strength of their reading skills (Cooper, Kiger, Robinson & Slansky, 2012). Caspe (2009) cites literacy as a "critical developmental accomplishment" for children (p. 306). There is even more importance placed on the attainment of solid literacy skills with the influx of technology (Joseph & Schisler, 2009). Schools across the nation are faced with preparing students for successful performance on standardized tests that assess students' reading skills.

Sound literacy skills are crucial for not only the assessment laden school environment but in other aspects of a students' education and in their eventual career path (Lee, Olszewski-Kubilius, & Peternel, 2010). Being able to communicate effectively and clearly with others is vital in today's world and in one's ability to also receive and interpret communications as well. One research supported way in which students can improve reading skills is through – reading. "The amount of reading students engage in has been shown to be a strong predictor of academic achievement" (Mucherah & Yoder, 2008, p. 214). Just how teachers position and assign reading can play a role in students' reading, but also external factors such as their exposure to print-rich environments, support and communication with and from family, family income to provide resources, and interest level. But the exposure to literacy practices and reading both in and out of school is vital to student success in school and in the 21st century information society (Aydin, Erdagf, & Tas, 2011; Wamba, 2011; Greenleaf et al., 2011, Snipes & Horwitz, 2008).

Wamba (2011) ascertains the concern over children and reading in the following: **"**Reading and writing are passports to achievement in many other curricular areas, and literacy education plays an important role in moving people out of poverty toward greater self-sufficiency post-graduation. Schools and home environments share responsibility for literacy skill development" (p. 8).

A student does not come to the classroom a blank slate, however, but is riddled with experiences that shape the students' approach to school, ability to perform, and comprehension. Research indicates that parental involvement in a students' schooling can greatly impact how the child succeeds (Auerbach, 1997; Gaitan, 2012; Ortiz, 2004).

Because reading and literacy are important to understandings in the field of education, this study will focus on the analysis of data relating to reading achievement scores of Hispanic students and aspects of personal background that may affect a students' score. It is important to consider the students that make up the population in our nation's classrooms. The U.S. is on a trajectory to continue to become increasingly diverse (Ball & Tyson, 2011; Boske & Benavente-McEnery, 2010). Hispanics, especially, are the group of individuals that are the fastest growing subset of the U.S. population (Hemphill & Vanneman, 2011; Humes, Jones, & Ramirez 2011; Kober, 2010). Moreover, approximately 12% of people age five and over in the U.S. are Hispanic (Robinson, 2008). Some research indicates that there is an achievement gap between White students and Hispanic students (Robinson, 2008; Rojas-LeBouef & Slate, 2012; Lopez et. al, 2007). Kober (2010) cites that by eighth grade, Hispanic students are only 58% proficient in reading by 8th grade and only 56% of Hispanic high school students are proficient in reading compared to 81% and 78% respectively for Whites.

Achievement gaps can be attributed to a variety of factors. Certainly, the dominance of monolinguistic, white female teachers in education may have play a role in the ability to connect with diverse groups of students (Ball & Tyson, 2011; Darling-Hammond & Bransford, 2005). Some studies have suggested that variables of income, parental education and occupation, and immigration status may play a role in Hispanic students' reading development (Grouws, 1992; Pond, 1999). Understanding the factors that hinder or support literacy development is important as research has indicated a link between literacy development and achievement later on in life (Billings, 2009; Dickinson & Tabors, 2002; Herbers et al., 2012).

Family involvement is one aspect that this study aims to look at more closely. Family may play an instrumental role in literacy development among children (Billings, 2009; Ortiz, 2004; Whitehurst et al., 1988). Moreover, a family's income can afford for additional opportunities for learning or be restricted by financial implications. Poverty is a great issue facing many students today. Berliner (2006) points out that poverty is the issue that is most plaguing student achievement and that students of urban minority and poor students are below that of their middle-class white peers. "A majority of school-age Latino children are economically disadvantaged. More than one-fourth (27%) come from families with incomes below the poverty level, and another 33% are near poor" (Kober, 2010, p. 3).

We examined the data in this study's sample of students to identify with or challenge this notion by analyzing Hispanic students' family structure, access to a computer in the home, urbanicity, and whether students think reading is fun or not as compared to all other non-Hispanic students in this 15,362 student dataset.

Methodology

A descriptive analysis approach was first applied to the 2002 ELS dataset regarding students' personal backgrounds and their standardized reading scores (see Table 1). This information prompted us to investigate specific variables and their individual significance upon students' reading scores. Furthermore, we were particularly interested in how Hispanic students' reading scores were affected by their personal backgrounds, especially given Hemphill and Vanneman's (2011) indication that Hispanics are the fastest growing population in the US.

Therefore, we recoded the race variable of the ELS dataset to distinguish between Hispanic and non-Hispanic students. Students identifying themselves as either "Hispanic, no race specified", or "Hispanic, race specified" were coded as "1". Students identifying as White, non-Hispanic, Black or African American, Asian, American Indian or multiracial, were coded as "0". All other possible entries or omissions in the category of race were coded as "missing data." After the recoding, we ran a frequency distribution to identify the number of students identifying to some degree as Hispanic (Yes = 1) was N=2,440, and the number of students identifying as non-Hispanic (No = 0) was N=12,922.

Next, we generated split form data in order to examine the sample populations side by side: Hispanics and all non-Hispanics. Once data was spilt, we then isolated variables and ran linear regressions to determine the significance of each variable. The first variable examined was whether or not students thought reading was fun. In order to examine how students' enjoyment of reading affected their standardized reading test scores, we ran a linear regression and displayed the results as a split form to analyze the difference of this variable between Hispanic students and non-Hispanic students. The second variable analyzed was whether or not students' families had a computer at home, and how analyzed how that variable affected reading scores. The third variable analyzed was students' family structure, and whether or not being raised in a "traditional" family (students living with both mother and father at home) had an impact on reading scores. The final variable examined was urbanicity, and to what degree living in an urban setting affected students' reading scores.

Finally, we tabulated all models and variables into a split form, multi-category regression analysis (see Table 6). This allowed us to examine the specific effect of each independent variable upon the dependant variable of students' standardized test scores in reading, while simultaneously controlling for all others. Because the data was split, it was easier to make a visual comparison between the two populations: Hispanic and non-Hispanic. Our hypotheses are as follows:

H_0 = Personal background has no impact on Hispanic students' standardized reading scores.

H_1 = Personal background does have an impact on Hispanic students' standardized reading scores.

When we indicate "personal background" in our hypotheses, we are acknowledging that there are several variables that may influence a student's reading score. The

variables of family construct, urbanicity, whether or not a student has a computer in their home and their preference for reading are variables of consideration in this study.

Findings

After recoding the race variable and generating split form data, the first variable that we examined in relation to reading standardized test scores was students' interest in reading. The p-values for the variable of whether students "Thinks reading is fun" are less than .05 for both Hispanics and non-Hispanics. This variable showed a strong statistical significance for non-Hispanic students based on the linear coefficient, with a Beta score of B=4.272 and a Sig. = .000 (see Table 2). However, this was not the case among the Hispanic population. The variance of Hispanic scores was considerably low, at $R^2 = .076$, indicating that reading enjoyment could only account for less than 1% increase in test scores. Furthermore, the Beta score was also low, at B= 1.448, verifying that this variable was not very statistically significant among the Hispanic population. It had been our assumption that an enjoyment of reading would likely lead to improved reading scores, as the non-Hispanic scores demonstrated. It was striking to note that this was indeed not the case among the Hispanic population. Hispanic students' reading scores were largely unaffected, regardless of whether the students enjoyed reading or not.

Beyond a pure enjoyment of reading, we were interested to see the how the prevalence of access to technology affected students' reading scores. We examined the significance of whether or not the family owned a computer, as it related to their reading scores. As shown in Table 3, the variable of reading scores had a strong statistical significance among both populations. Examining Hispanic students, this variable produced a Beta score of B= 4.839 and a Sig. = .000. Additionally, among the non-Hispanic groups, it was likewise significant, with a Sig. = .000 and a B= 7.264. Furthermore, the Confidence Interval at 95% was much higher for the variable of "Computer" ownership than it was for "Thinks reading is fun" at 5.943 in the upper bound as opposed to 2.428 for Hispanics, and 7.906 in the upper bound compared with 4.700 for non-Hispanics. Still, despite this variable's significance among Hispanics, this data implies that computer ownership still accounts for a greater increase in reading scores among the non-Hispanic population.

Our third control variable to analyze was "Family Structure" (see Table 4). This variable had been recoded to indicate students who lived with both father and mother (Yes = 1), as opposed to any other family living situation (No = 0). The regression analysis indicated this variable as having a statistical significance upon the reading scores of the non-Hispanic sample. Their Beta scores were high, with a B= 3.215 and a Sig = .000, although notably lower than the "Computer" variable. However, much to the surprise of the researchers, among the Hispanic group, the regression showed this variable as having no real statistical significance. Much like the "Thinks reading is fun" variable, living at home with both father and mother produced a low Beta score among Hispanics, B = .833 and a Sig = .074. Moreover, the variance was very low, with $R^2 = .043$, indicating that this variable can only account for 4.3% improvement in reading scores among this population.

Finally, the fourth variable examined related to students' standardized reading scores and

was the variable "Urban" (see Table 5). Once again, we recoded this variable as students living in an Urban setting (Yes = 1), versus those who did not (No = 0), and this variable produced the most diverse figures of any variable tested, as it was the only one to produce a negative association. For both the Hispanic and non-Hispanic groups, the Beta scores were negative, with B = -.131 and B= -.358, respectively. This likewise produced a negative variance, with an R^2 = -.007 among Hispanics and R^2 = -.016. This means, that for every unit increase in the "Urban" variable, the standard deviation of reading scores will decrease - a 35.8% decrease for non-Hispanics and 13.1% decrease for Hispanics.

Although the significance scores for both groups were higher, Sig = .083 for non-Hispanics and Sig = .776 for Hispanics, those scores are not true indicators of this variable's statistical significance, due to the fact that the association is negative. What was telling was that the t^2 score for the non-Hispanic group at -1.735 was closer to 2, a general rule of thumb for indications of significance (Vogt, 2007). However, the t^2 score for the Hispanic sample was -.284, nowhere near the generally accepted level of significance. Therefore, urbanicity, despite having a negative correlation with students' reading scores among the entire population, had no real statistical significance upon the reading scores of the Hispanic students which is telling. While the data has shown the average reading standardized test score of Hispanics to be less than non-Hispanics, something which Berliner (2006) highlights, urbinicity does not fully explain the lower performance of Hispanics as compared to non-Hispanics. In fact, in regard to standardized reading test scores, urbanicity affects Hispanic students less that it does non-Hispanic students.

Finally, all variable in this model were compiled in a multi-categorical regression analysis so as to display the adjusted R^2 value when controlling for all variables (see Table 6). It should once again be noted that do to the rather large sample size, even small variations in percentages demonstrate a strong significance, for instance, that 12% of non-Hispanic students reading scores can be directly attributed to these four variables in analysis is significant, especially considering that n = 12,922. Still, the Adjusted R^2 value for the Hispanic population, despite its size (n = 2,440), increased very little. Indeed, when controlling for these four variables, it seemed to flatten. These four variables, some of which were thought might have a significant impact on reading scores, ultimately were of no real significance to the Hispanic students. Since the Adjusted R^2 = 0.048 when controlling for these variables at p = 0.05, we must fail to reject the null. We accept that personal background, insofar as it is defined by these four variables, has no impact on Hispanic students' standardized reading scores in contrast to all other students.

Implications

Based on the data we analyzed, there are interesting implications that surface when examining multiple variables' effects on students reading scores. It is interesting to note that of all variables tested, whether or not the family owned a computer had the greatest significance (B= 7.263; B = 4.839). This would seem to suggest that the most important factor to increase a student's literacy development as related to their reading scores would be access to technology, particularly computers. There could be several reasons for this. Given the amount of educational software programs available through interactive devices like

computers or tablets, students who have access to them would likely have a decided advantage over students who did not (Norris, 2003). Additionally, when thinking of technology itself as a literacy, especially in light of 21st century skill development, an increased awareness in a technological literacy could have direct benefit to reading literacy. The significant impact of computers upon students reading skills, specifically among Hispanics, is consistent with Vassiliou's (2011) research with computer assisted software technology and ESL students' literacy rates in Miami, finding that students' scores increased considerably when using the technology. Furthermore, Taningco and Pachon (2008) also found that computer use both at home and in the classroom has a positive correlation on Latino students' scores in mathematics. Certainly, there is an argument to be made that students with access to technology and educationally rich software can improve their academic success.

Additionally, it was interesting to note that while the "Family Structure" variable and the "Urban" variable were very significant among the non-Hispanic population, both variables showed no real statistical significance among Hispanic students. The reasons behind this are baffling. Perhaps, because of the proliferation of an expanded nuclear family unit among many Hispanic families, with greater reliance on grandparent, and aunts and uncles than other American cultural groups (Hsueh-Fen, Lynn & Kyungeh, 2012) it could be that Hispanic students who do not live with both their mother and father do not suffer academically as a result, unlike many non-Hispanic students. Perhaps the strong family network that many Hispanic communities employ is able to overcome the absence of both a mother and father living at home together.

Additionally, the implications of urbanicity having no statistical significance upon the reading scores of Hispanic students are also interesting to note. This result might imply that a large percentage of Hispanics come from urban regions, and that this variable has very little impact upon students scores therefore their scores will be unaffected. However, another interpretation could be that overall Hispanic reading scores are lower than non-Hispanics to begin with, that regardless of whether students are urbanized or not makes little difference. Either way, this conclusion is troubling, especially given the negative association of the Urban variable, and the fact that it still had little impact on the Hispanic students' scores.

Regardless, when weighed together, especially in light of the researchers own expectations and hypothesis in conducting this study, there is a serious implication for the need to critically examine our own biases and assumptions, both as researchers and educators. To assume that one set of variables will have the same impact on different subgroups of students, especially students hailing from different cultural backgrounds, is simply erroneous, as demonstrated by the relatively static Adjusted R^2 value among Hispanic students in our multi-categorical regression. One interpretation of these findings, as the present achievement gap would suggest, is that the American education has failed to completely acculturate Hispanic students to measurable levels of success and greater attention is needed to support these students in the coming years given population trends.

Conclusions

United Nations Secretary General Khafi Annan said that literacy is a bridge from misery to hope (Annan, 1997). In light of that truth, we have analyzed several

independent variables relating to students' standardized test scores in reading. While literacy and reading are crucial skills, as they are foundational for all learning among all students, we specifically focused on the variables affecting the reading scores from the Hispanic population in the 2002 ELS dataset. Not only are Hispanics the fastest growing ethnic group in the United States (Hemphill and Vanneman, 2011), but there also exists a stark achievement gap in reading and literacy scores between Hispanic and non-Hispanic students in this country (Poulsen, Hastings, and Allbritton, 2007).

Our research has revealed that some factors that impact students' reading scores such as traditional family structures and urbanicity, do not have the same statistical significance with Hispanic students. While it has been evidenced that access to computers and technology has a significant impact on all students' reading skills, further research is needed in order to find additional variables which impact reading scores specifically among Hispanic students. Kober (2010) noted that it is critical that Hispanic students are prepared for college, careers and civic participation since they are the population who will "shape the nation" (p.1). Therefore, as educators, we must do all we can to equip this essential ethnic population with essential skills of literacy.

References

Annan, K. (1997) *Secretary-general stresses need for political will and resources to meet challenge of fight against illiteracy*. Press Release SG/SM/6316 OBV/9. Retrieved from http://www.un.org/News/Press/docs/1997/19970904.SGSM6316.html

Auerbach, E. (1997). Reading between the lines. In D. Taylor (Ed.), *Many families, many literacies* (pp.71-81). Portsmouth, NH: Heinemann.

Aydin, A. Erdagf, C. & Tas, N. (2011). A comparative evaluation of pisa 2003-2006 results in reading literacy skills: An example of top-five OECD countries and Turkey. *Educational Sciences: Theory and Practice, 11*(2) 665-673.

Ball, A. & Tyson, C. A. (Eds.). (2011). *Studying diversity in teacher education*. Lanham, MD: Rowan & Littlefield.

Billings, E. (2009). Prescriptions to read: Early literacy promotion outside the classroom. *Literacy Teaching and Learning, 13*(1/2), 81-101.

Berliner, D. (2006). Our impoverished view of educational research. *Teachers College Record, 108*(6), 949-995.

Boske, C., & Benavente-McEnery, L. (2010). Taking it to the streets: A new line of inquiry for school communities. *Journal of School Leadership, 20*(3), 369-398.

Carnegie Council on Advancing Adolescent Literacy. (2010). *Time to act: An agenda for advancing adolescent literacy for college and career success*. New York, NY: Carnegie Corporation of New York.

Caspe, M. (2009). Low-income Latino mothers' booksharing styles and children's emergent literacy development. *Early Childhood Research Quarterly*, *24*(3), 306-324.

Cooper, J., Keiger, N., Robinson, M., & SLansky, J. (2012). *Literacy: Helping students construct meaning.* Belmont, CA: Wadsworth.

Darling-Hammond, L., & Bransford, J. (Eds.). (2005). *Preparing teachers for a changing world: What teachers should learn and be able to do*. San Francisco, CA: Jossey-Bass.

Dickinson, D. K., & Tabors, P. O. (2002). Fostering language and literacy in classrooms and homes. *Young Children*, *57*(2), 10–18.

Elrod, S. (2010). Project kaleidoscope 2.0: Leadership for twenty-first century STEM education. *Liberal Education*, *96*(4), 24-33.

Fleischman, H., Hopstock, P., Pelczar, M., & Shelley, B. (2011). Highlights from PISA 2009: Performance of U.S. 15-year-old students in reading, mathematics, and science literacy in an international context. NCES 2011-004. *National Center for Education Statistics*, 72pp.

Futrell, M. (2010). Transforming teacher education to reform America's p-20 education system. *Journal of Teacher Education*, *61*(5), 432-440.

Gaitan, C. (2012). Culture, literacy, and power in family-community-school-relationships. *Theory Into Practice, 54*(4), 305-311.

Greenleaf, C., Litman, C., Hanson, T., Boscardin, C., Herman, J., Schneider, S., Madden, S., & Jones, B. (2011). Integrating literacy and science in biology: Teaching and learning impacts of reading apprenticeship professional development. *American Educational Research Journal*, *48*(3), 647-717.

Grouws, D. (1992). *Handbook for research on mathematics teaching and learning*. New York: MacMillan.

Hemphill, F., & Vanneman, A. (2011*). Achievement gaps: How Hispanic and white students in public schools perform in mathematics and reading on the National Assessment of Educational Progress*. Washington, D.C.: National Center for Education Statistics.

Herbers, J., Cutuli, J., Supkoff, L., Heistad, D., Chan, C., Hinz, E., & Masten, A. (2012). Early reading skills and academic achievement trajectories of students facing poverty, homelessness, and high residential mobility. *Educational Researcher, 41*(9), 366-374.

Hsueh-Fen, S., Lynn, M., & Kyungeh, A. (2012). Development of the Mexican American family loyalty toward elderly relatives scale. *Journal of Theory Construction & Testing, 16*(2), 38-44.

Humes, K., Jones, N., & Ramirez, R. (2011). Overview of race and Hispanic origin: 2010. *U.S. Census Bureau*. Retrieved from http://www.census.gov/prod/cen2010/briefs/c2010br-02.pdf

Joseph, L., & Schisler, R. (2009). Should adolescents go back to the basics?: A review of teaching word reading skills to middle and high school students. *Remedial and Special Education, 30*(3), 131-147.

Kober, N. (2010). Improving achievement for the growing Latino population is critical to the nation's future. *Student achievement policy brief #3: Latino students.* Washington, DC: Center on Education Policy.

Lee, S., Olszewski-Kubilius, P., & Peternel, G. (2010). Achievement after participation in a preparatory program for verbally talented students. *Roeper Review, 32*(3), 150-163.

Lopez, E., Gallimore, R., Garnier, H., & Reese, L. (2007). Preschool antecedents of mathematics achievement of Latinos: The influence of family resources, early literacy experiences, and preschool attendance. *Hispanic Journal of Behavioral Sciences, 29*(4), 456-471.

Mucherah, W., & Yoder, A. (2008). Motivation for reading and middle school students' performance on standardized testing in reading. *Reading Psychology*, *29*(3), 214-235.

Norris, P. (2003). *Digital divide: Civic engagement, information poverty, and the internet worldwide*. Cambridge, UK: Cambridge University Press.

Ortiz, R. (2004). Hispanic/Latino fathers and children's literacy development: Examining involvement practices from a sociocultural context. *Journal of Latinos and Education, 3*(3), 165-180.

Partnership for 21st Century Skills. (2011). *Framework for 21st century learning*. Retrieved from http://www.p21.org/index.php?option=com_content&task=view&id=254&Itemid=120.

Pond, L. (1999). *Supporting mathematical development in the early years*. Buckingham, UK: Open University Press.

Poulsen, R., Hastings, P., & Allbritton, D. (2007). Tutoring bilingual students with an automated reading tutor that listens. *Journal of Educational Computing Research, 36*(2), 191-221.

Robinson, J. (2008). Evidence of a differential effect of ability grouping on the reading achievement growth of language-minority Hispanics. *Educational Evaluation and Policy Analysis, 30*(2), 141-180.

Rojas-LeBouef, A., & Slate, J. (2012*). The achievement gap between white and non-white students*. Houston, TX: National Council of Professors of Educational Administration.

Silva, E. (2008). Measuring skills for the 21st century. *Education Sector Reports*, *11*.

Snipes, J., & Horwitz, A. (2008). *Advancing adolescent literacy in urban schools*. Washington, DC: Council of the Great City Schools.

Taningco, M. T. V., & Pachon, H. P. (2008). *Computer Use, Parental Expectations, & Latino Academic Achievement*. Clairmont, CA: Tomas Rivera Policy Institute.

Vassiliou, J. (2011). Improved outcomes with computer-assisted instruction in mathematics and English language skills for Hispanic students in need of remedial education at Miami Dade College, Florida. *Community College Journal of Research and Practice, 35*(3), 191-201

Vogt, W. (2007). *Quantitative research methods for professionals*. Boston, MA: Pearson.

Wamba, N. (Ed.). (2011). *Poverty and literacy*. Florence, KY: Routledge.

Whitehurst, G. J., Falco, F. L., Lonigan, C. J., Fischel, J. E., Valdez-Menchaca, M. C., DeBaryshe, B. D., & Caulfield, M. (1988). Accelerating language development through picture book reading. *Developmental Psychology*, *24*(4), 552–559.

Table 1

Descriptive Statistics - Mean Score of Independent and Dependent Variables.

Variable	Mean Score/Correlate
Standardized reading test	50
Race/Ethnicity	n/a
Family composition	n/a
Total family income	$35,000
Student thinks reading is fun	Split on agree/disagree
Geographic region of school	Midwest/South
Access to a computer at home	.88 (0=No/1=Yes)

Table 2

Linear Regression Analysis of variable: "Thinks Reading is Fun" upon DV: Reading Standardized Test Scores.

Hispanic	Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
			B	Std. Error	Beta			Lower Bound	Upper Bound
No	1	(Constant)	49.701	.132		377.946	.000	49.443	49.959
		Thinks Reading is Fun	4.272	.187	.220	22.798	.000	3.904	4.639
Yes	1	(Constant)	45.245	.328		137.759	.000	44.601	45.889
		Thinks Reading is Fun	1.448	.463	.076	3.126	.002	.539	2.357

a. Dependent Variable: Reading test standardized score

Table 3

Linear Regression Analysis of variables: "Computer" and "Thinks Reading is Fun" upon DV: Reading Standardized Test Scores.

Hispanic	Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
			B	Std. Error	Beta			Lower Bound	Upper Bound
No	1	(Constant)	43.099	.327		131.866	.000	42.458	43.739
		Thinks Reading is Fun	4.340	.183	.224	23.658	.000	3.980	4.700
		Computer	7.264	.328	.209	22.144	.000	6.621	7.907
Yes	1	(Constant)	41.470	.550		75.392	.000	40.391	42.549
		Thinks Reading is Fun	1.531	.457	.080	3.348	.001	.634	2.428
		Computer	4.839	.562	.205	8.607	.000	3.736	5.942

a. Dependent Variable: Reading test standardized score

Table 4

Linear Regression Analysis of variables: "Family Structure," "Thinks Reading is Fun" and "Computer" upon DV: Reading Standardized Test Scores.

Hispanic	Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
			B	Std. Error	Beta			Lower Bound	Upper Bound
No	1	(Constant)	41.928	.329		127.394	.000	41.283	42.573
		Thinks Reading is Fun	4.317	.181	.223	23.875	.000	3.962	4.671
		Computer	6.482	.326	.187	19.857	.000	5.842	7.122
		Family Structure	3.215	.186	.163	17.324	.000	2.851	3.579
Yes	1	(Constant)	41.031	.601		68.285	.000	39.853	42.210
		Thinks Reading is Fun	1.537	.457	.080	3.363	.001	.641	2.434
		Computer	4.803	.562	.204	8.542	.000	3.700	5.906
		Family Structure	.833	.460	.043	1.809	.071	-.070	1.736

a. Dependent Variable: Reading test standardized score

Table 5

Linear Regression Analysis of variables: "Urban," "Family Structure," "Thinks Reading is Fun" and "Computer" upon DV: Reading Standardized Test Scores.

Hispanic	Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
			B	Std. Error	Beta			Lower Bound	Upper Bound
No	1	(Constant)	42.044	.336		125.205	.000	41.386	42.702
		Thinks Reading is Fun	4.328	.181	.223	23.924	.000	3.973	4.682
		Computer	6.463	.327	.186	19.792	.000	5.823	7.103
		Family Structure	3.197	.186	.162	17.202	.000	2.833	3.561
		Urban	-.358	.206	-.016	-1.735	.083	-.762	.047
Yes	1	(Constant)	41.090	.636		64.622	.000	39.843	42.337
		Thinks Reading is Fun	1.537	.457	.080	3.362	.001	.640	2.433
		Computer	4.800	.562	.204	8.534	.000	3.697	5.903
		Family Structure	.835	.461	.043	1.813	.070	-.068	1.738
		Urban	-.131	.460	-.007	-.284	.776	-1.034	.772

a. Dependent Variable: Reading test standardized score

Table 6

Multi-Category Regression Analysis for DV: Reading Standardized Test Scores

		Model 1		Model 2		Model 3		Model 4	
		B	BETA	B	BETA	B	BETA	B	BETA
Non-Hispanic (No = 0)	Constant/Intercept	49.701		43.099		41.928		42.044	
	IVs								
	Thinks Reading is Fun	4.272	.220	4.340	.224	4.317	.223	4.328	.223
	Family Owns a Computer			7.264	.209	6.482	.187	6.463	.188
	Family Structure					3.215	.163	3.197	.162
	Urban							-.358	-.016
	Adjusted R-squared	.005		.093		.119		.120	
Hispanic (Yes =1)	Constant/Intercept	45.245		41.470		41.031		41.090	
	IVs								
	Thinks Reading is Fun	1.448	.076	1.531	.080	1.537	.080	1.537	.080
	Family Owns a Computer			4.839	.205	4.803	.204	4.800	.204
	Family Structure					.833	.043	.836	.043
	Urban							-.131	-.007
	Adjusted R-squared	.048		.047		.049		.048	