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Who is Responsible for My Child's School-readiness? Parental Educational Efficacy Shapes Kindergarten Preparedness in the Home

By

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Abstract

This study examines whether parental perceptions of their efficacy as an educator – feeling anxious about reading and doing math, both alone and with their child -- operationalized as QR-efficacy, mediates the relationship between a parent's race, income, and education and where they place responsibility for their child's school-readiness (LRSR; i.e., with preschools or with parents). Existing literature displays that educational disparities exist along racial compositions of SES, specifically that Black parents tend to hold lower levels of educational attainment and have lower incomes than their White counterparts. While investigating racial gaps in school-readiness, as a product of structural racism, remains relevant to the study of social inequality in education, few studies have also emphasized the importance of parental intrapersonal perceptions that often drive the decisions and behaviors parents employ for their child's cognitive development. A stepwise regression procedure was conducted to analyze regression coefficients and model fit of four models regressing LRSR on a parent's race, education, income, and the mediating variable, QR-efficacy. Supplementally, a structural equation model assessed direct and indirect relationships between the independent, dependent, and meditating variables. Results suggested that parents who hold higher levels of QR-efficacy place significantly greater locus of responsibility for school-readiness with parents than with preschools. This relationship held across parents' race, education level, and income, suggesting that interventions focused on closing gaps in school-readiness may benefit from investigations that consider parental intrapersonal perceptions as well as socio-demographic factors.

Keywords: social inequality, education, school-readiness, efficacy, parents

Introduction

Pervasive school-readiness gaps exist for students of different socio-demographic groups (Reardon & Portilla, 2016; Rothstein, 2015). Researchers have long attempted to address the combined effects of family and educational structures for explaining these gaps, including addressing disparities in household educational resources (Coleman, 1995) or parent/teacher communication (Crosnoe, 2012). While both the school and home remain salient environments of socialization and cognitive development, educational disparities can be observed in the household long before a child steps foot inside a classroom (Coleman, 1995). These formative pre-school years of a child's life are now widely considered a time for parents to begin cognitive skill development as their child's primary educator (Maloney et al., 2015; Schaub, 2010). However, mass institutionalized schooling throughout the last century, which has affirmed itself as "the great equalizer," may have the effect of shifting a parent's locus of educational responsibility for their child's school-readiness (LRSR) away from themselves and towards educational systems. This shift could be further intensified if a parent's perceived efficacy as an effective educator for their child's school-readiness is low, depressing behaviors that promote cognitive skill development, thus leaving the child under-prepared for kindergarten. Consistent with previous research, this study addresses between-group educational disparities as a consequence of social inequality (Ardelt & Eccles, 2001; Brooks-Gunn & Markman, 2005; Coleman, 1995; Rothstein, 2015). However, this study contributes to the literature by considering an additional micro-mechanism to aid explanations in school-readiness disparities, namely parental perceptions of their quantitative and reading efficacy (QR-efficacy).

Parental beliefs not only guide the educational decisions parents make for their child, but can also be regarded as a product of the parent's socio-historical and cultural experiences.

Consistent with Coleman's scheme (Coleman 1987a, 1990 as cited in Raub et al., 2011), parenting beliefs and behavior can be viewed at the micro-level, while simultaneously interacting with networks and institutions that exist at the macro-level. For instance, although policy makers and educators endorse institutionalized early education for a child's cognitive development (Mayer et al., 2019; Reardon & Portilla, 2016), parents with adverse educational experiences may be hard-pressed to align these sentiments with the decisions they make for their child's early education. Considering the existence of structural racism in the American educational system, there is reason to examine these relationships as a racial issue, where discriminatory educational experiences likely inhibit upward mobility for Black individuals, while possibly also affecting internalized perceptions of their educational efficacy (Steele & Aronson,1995). This study addresses the hypothesis that disparities between Black and White parental QR-efficacy, as a result of structural racism, will influence whether parents believe LRSR resides within the home or with preschools. Just as important, the null-hypothesis states that QR-efficacy is not a product of racialized experiences, but rather a perception that exists across race, income-level, and education.

Tracing Race, Income, and Education to QR-efficacy

Investigating household influences to address social inequality in education derives from empirical evidence that displays how educational disparities tend to be transgenerational (Crosnoe, 2012; Duncan & Murnane, 2015; Kalil, 2015). U.S. educational inequality stems from socially constructed racial hierarchies that have persisted for centuries and endure today (Diamond & Lewis, 2015; Parsons & Turner, 2014). Taylor et al.'s (2004) "intergenerational influences perspective" suggests that past experiences with educational institutions heavily influence a parent's constructed working model for their child's academic socialization, which,

in turn, is undergirded by forces of socio-economic and cultural structures. This perspective resides within critical race theory, which contends that racial advantage in the U.S. is socially constructed and maintained through structures and institutions that reinforce a racial hierarchy of White individuals at the top and Black individuals at the bottom (Bell, 1980).

As a consequence, overt and latent patterns of discrimination produce and sustain racial disadvantage and *race-based status beliefs* (Diamond & Lewis, 2015; Ridgeway & Markus, 2022) that support structures of stratification based on social distinctions (e.g., race, education, income, gender), which can also become internalized and thus influence motivation, behavior, and perceptions (Ridgeway & Markus, 2022; Steele & Aronson, 1995). Considering enduring social inequalities that affect education (e.g., de facto segregation, income disparities in access to extracurricular resources, pervasive tracking systems), low-income, Black families may be more susceptible to stereotype threat (Steele & Aronson, 1995), which may undermine perceptions of their own efficacy as an instructional resource for their child's school readiness. Characterized as the deficit perspective (Brinkley et al., 2022; Sonnenschein et al., 2016), racialized educational experiences are hypothesized to negatively relate to QR-efficacy.

Tracing Parental QR-efficacy to Beliefs about Child School-Readiness

A clear example of the role parental perceptions play in a child's educational trajectory comes from research conducted by Maloney et al. (2015) who found that parents' own math anxiety was positively associated with their child's math anxiety and negatively associated with their child's math achievement. Parents with higher math anxiety may find themselves less engaged in their child's cognitive development in the home due to an assumption that their own disadvantage in math knowledge will impair their child's math achievement (Maloney et al., 2015). This evidence suggests that parents with lower quantitative efficacy will place more

responsibility for their child's school-readiness with teachers and preschools than with themselves.

Investigations into the relationship between parental reading anxiety and beliefs about school-readiness are scant. However, it is not inconceivable to assume that the same relationship exists for reading anxiety as with math anxiety. Support for a possible link between reading and quantitative efficacies is displayed by Rury (2022), who found that a student's rank in reading among their school cohort was an equal, if not stronger, predictor of math performance as reading performance. There is also ample literature pointing to familial literacy as a potent indicator for a host of educational advantages (Baydar et al., 1993), including evidence from the seminal work performed by Hart and Risley (1995) that displayed large vocabulary gaps between children of professionals, working class, and welfare parents. Though not explicitly stated, we can speculate that professional parents may feel more efficacious in their literacy ability, and therefore engage in more literacy-developing skills in the home. Conversely, we can speculate that a parent with lower levels of reading efficacy (i.e., higher reading anxiety) might perceive preschools as more efficacious in their ability to ready a child for kindergarten.

Another mechanism possibly influencing who parents feel is responsible for their child's school-readiness derives from the rise in educational opportunities for women in the past century that has coincided with a new understanding for how early environments shape a child's early cognitive and non-cognitive skill development (Schaub, 2010). Parents are now expected to engage early-on with their children in ways that enhance these skills, a development reflected in the increased use of the verb "parenting" in the last few decades (Kalil & Ryan, 2020). This macro-level development could likely induce parents to engage in more in-home cognitive engagement with their children, thus allocating more responsibility for their child's school-

readiness with themselves. Counter to this notion, contemporary research also displays an increase in parental burnout due to high parental demands, particularly among Black mothers (Nomaguchi & House, 2013), as parents navigate challenges to work/family balance, financial and educational security, and social networks (Griffith, 2022). This development could likely induce parents to allocate responsibility for school-readiness to preschools. A critical consideration within this investigation is not only the material resources and manifest structures that can influence parental beliefs about their child's education and school-readiness, but a parent's intra-perceptual attitudes that develop as a result of their own individual experiences. Both systems may arguably operate in ways that influence who parents believe should be preparing their children for entering kindergarten with the tools they need to succeed.

The Current Study

This study sets out to answer whether parental efficacy as an educator – feeling anxious about reading and doing math, both alone and with their child -- operationalized as QR-efficacy, underlies the relationship between a parent's race, income, and education and their LRSR. Existing literature displays disparities along racial compositions of SES (a finding consistent in the current study; see Appendix Table 1), where Black parents tend to hold lower levels of educational attainment and have lower incomes than their White counterparts. While investigating racial gaps in school-readiness, as a product of structural racism, remains relevant to the study of social inequality in education, few studies have also emphasized the importance of parental intrapersonal perceptions that often drive the decisions and behaviors parents employ for their child's cognitive development. This paper attempts to fill this gap.

Methods

Sample

Data were taken from the Early Investments Project (EIP; Behavioral Insights and Parenting Lab, 2014, January 10) from the University of Chicago. These data contain a diverse collection of demographic, educational, and parental-value and -belief variables that were designed to investigate differences in parental decision-making as a result of parental advantage. It contains unique content bridging intrapersonal measures of parental perceptions with observable child academic outcomes. Data were collected over two phases using vignettes and various assessment tasks in online parent-completed surveys in the Spring of 2018. Participants were parents of children aged 3 to 6 years, spanning the income spectrum in the Chicago metropolitan area. The final study sample consisted of 296 parents (N_{male} = 19, N_{female} = 277; N_{Black} = 161, N_{White} = 135) with typically developing children, 5 years and under, enrolled in the Chicago Public School system. About 70% of the total sample did not answer the dependent variable (DV), calling into question the validity of the results due to selection bias. Robustness checks comparing characteristics of parents who answered and didn't answer the DV were performed to address this issue. The results from the robustness checks are presented in the Results section.

Measures

Parental QR-Efficacy

Perceptions of parental efficacy are related to a host of child developmental outcomes; however, parental efficacy also takes on a host of differential meanings (Glatz et al., 2024; Jones & Prinz, 2005). In this study, QR-efficacy reflects parents' perceptions about their ability to be an effective math and reading educator for their child's early education. To define QR-efficacy, four items were extracted from the EIP survey: "How nervous does it make you to help your child with math?" "How nervous does it make you to do math on your own?" "How nervous

does it make you to read to your child?" and "How nervous does it make you to read on your own?" Possible answers ranged from *not at all nervous* (0) to *extremely nervous* (10). Items were reverse coded so that higher values reflected higher QR-efficacy. A confirmatory factor analysis (CFA), defining the latent variable, QR-efficacy, using the four items listed above displayed overall high loadings (> .4) according to Brown (2006). The four items were therefore combined and averaged into a new latent variable for the stepwise regression.

Locus of Responsibility for School-readiness (LRSR)

The outcome variable, LRSR, reflects beliefs about who parents consider is responsible for their child's school readiness. According to the Theory of Planned Behavior (TPB; Ajzen, 1991), intention and behavior follow from beliefs, suggesting that LRSR can be extrapolated to predict whether parents will engage in quantitative and reading skill development in the home or delegate it to the preschool. LRSR was measured from an item on the EIP survey that asked parents, "Who is responsible for your child's school readiness?" Answers ranged from *only the preschool* (0), *mostly the preschool* (1), *preschool and parents equally* (2), *mostly parents* (3), and *only parents* (4). This item was transformed into a binary variable (0-2=0) *school* and (3-4=1) *parents* to eliminate a neutral interpretation of the value, 2, and help expose distinctions in variable interpretation. Inference is therefore reflected as a differentiation between beliefs that preschools at least share responsibility for a child's school-readiness with parents compared to beliefs that parents are mostly responsible for their child's school-readiness (see Appendix Figure 1).

Demographics

Parent race, education, and income were considered as independent variables in the model. All three variables were highly correlated ($r_{race\ x\ income}$ = -.36, $p < .001$; $r_{income\ x\ education}$ =

.56, $p < .001$; $r_{education\ x\ race} = -.17$, $p < .01$), a finding in line with national trends (U.S. Department of Labor; U.S. Department of Treasury, 2023) as well as prior research (Brooks-Gunn & Markman, 2005; Sonnenschein et al., 2016). Parental education was measured on an ordinal scale consisting of the following education levels: 12th grade or less, high school diploma or GED, vocational or technological diploma, some college, A.A., B.A., and graduate degree. Higher values represent higher educational attainment. Parental self-reported income ranged from $0 to $100,000, and was recoded into terciles (i.e., $0 - $33,000, $33,001 - $66,000, and $66,001 - $100,000), where higher values represent higher income. Only Black and White parents were considered for the study considering the study's theoretical critical race lens. Race was coded as (0) *White* and (1) *Black.*

Procedure

After defining the latent variable, QR-efficacy, using a CFA in Stata, a stepwise regression procedure was conducted to analyze regression coefficients and model fit using pseudo R^2 (Hemmert et al., 2018). Model 1 represents the unconditional model displaying only the intercept of LRSR without any predictor variables. Model 2 regressed LRSR on race. Model 3 added the variables, parent education and income as mechanisms that are expected to explain the relationship between race and LRSR should one exist, while Model 4 implemented the mediating variable, QR-efficacy to address the research question.

In a final step, a structural equation model was constructed using Stata to better assess direct and indirect relationships between the independent, dependent, and meditating variables (see Figure 2). LRSR was reverted back to its original coding for model interpretation (Muthén, 1983). Therefore, answers to the question, "Who is responsible for your child's school readiness?" are represented as: *only the preschool* (0), *mostly the preschool* (1), *preschool and*

parents equally (2), *mostly parents* (3), *only parents* (4), and should be interpreted as continuous. Structural equation models are particularly useful for representing latent variables (Bentler & Weeks, 1980); thus QR-efficacy was included in the model in its latent variable form with four indicators (see Figure 2). Model fit was analyzed and improved, and implications were derived from the point estimates as well as the results of the direct and indirect effects.

Results

Descriptive Analysis and Robustness Checks

Results from robustness checks revealed that higher educated, White parents making higher salaries answered the DV at a much lower rate than did lower educated, Black parents making lower salaries. Specifically, there was a close to significant difference in education between those who answered the DV (M = 3.15, SD = .11) and those who didn't answer the DV (M = 3.40, SD = .07; t = 1.8, p = .07), and race for those who answered the DV (M = .46, SD = .03) and didn't answer the DV (M = .4, SD = .02; t = -1.79, p = .07). Also, results displayed a significant difference in income for those who answered the DV (M = \$42,428, SD = \$1,937) and those who didn't answer the DV (M = \$47,758, SD = \$1,328; t = 2.20, p = .03). These results are particularly concerning given the very small sample of respondents who believe preschools are all (N = 3) or mostly (N = 4) responsible for their child's school-readiness. On the one hand, selection bias could result in the possible omission of higher educated White parents, who make higher incomes, exposing their endorsement of preschools holding more responsibility than parents for a child's kindergarten-readiness. This seems unlikely considering that these subgroups have been shown to engage in more academic socialization in the home (Kalil, 2015). On the other hand, one may also expect a preferred bias for preschool education among higher earning, working mothers, who tend to employ out-of-home care at a greater degree; however,

empirical findings don't support this (Cascio, 2006; Fitzpatrick, 2010). This expectation would also be assumed to exist after sample selection, which it didn't. Contrary to concerns about selection bias, the final sample was relatively representative across race, income, and education (see Appendix Table 1).

Descriptive statistics display heterogeneity between mothers and fathers on educational attainment (M_{female} = 3.13, SD = 1.94; M_{male} = 4.16, SD = 1.42) and income tercile (M_{female} = .71, SD = .83; M_{male} = 1.63, SD = .60). There is also heterogeneity between Black and White parents in regards to education and income (see Appendix Table 1). Whereas White parents, on average, have some college experience (M = 3.49, SD = 2.1), Black parents hold a diploma mostly in vocational or technological education (M = 2.84, SD = 1.63). Additionally, Black parents are disproportionately lower on the income spectrum compared to their White-parent counterparts (M_{Black} = .44, SD = .63; M_{White} = 1.05, SD = .90). Given disparate access to high quality educational resources and schooling, as well as structural discrimination practices, these results are not surprising. Divergent income and educational levels that are associated with race and gender lend empirical support for examining how structural barriers may affect a parent's intrapersonal perceptions about their educational efficacy, and how this, in turn, relates to how they perceive their and the preschool's role in preparing their children for kindergarten.

Pairwise correlation coefficients between parent race/income/education and efficacy displayed mostly weak associations. Interpretation of the correlation coefficients were derived from Schober et al. (2018). Parent race was not correlated with QR-efficacy (r = .02, p > .5); however, income and education had a weak, positive correlation with QR-efficacy (r = .17, p < .05 & r = .16, p < .05, respectively). In the sample, Black parents made less income (r = -.36, p <

.001) and were slightly less educated (r = -.17, p < .05) than their White counterparts. Parent education and income were positively, and highly, correlated (r = .56, p < .001).

Importantly, these descriptive results suggest that while Black parents possess lower levels of income and education than their White counterparts – a finding consistent with current national trends (U.S. Department of Labor; U.S. Department of Treasury, 2023) -- there is no evidence that they also possess lower levels of QR-efficacy. This preliminary finding provides critical insight into possible shortcomings of the deficit perspective for explaining social inequality in education. The finding suggests that intrapersonal perceptions of a parent's role as an educator in their child's life is independent from race-related educational experiences, as well as socio-economic status. The subsequent analyses test this finding more vigorously.

Stepwise Regression

The collapsed binary LRSR variable reflects either that parents believe responsibility for their child's school readiness is at least half the preschool's responsibility or that responsibility lies mainly with parents (see Appendix Figure 1). A stepwise regression procedure, investigating four models regressing LRSR on parent race, education and income, and employing QR-efficacy as a mediator is presented in Table 2 (see Appendix). Pseudo R^2 compares estimates between the estimated and unconditional model, which in this case is the model displaying LRSR's intercept (Model 1). While the results from Model 2 display that the odds of placing LRSR on the school are .8 times less for Black parents than for White parents (β = -0.22, SE = .20, z = -.89, p = .37, $lr\chi^2(1)$ = .79), this relationship is non-significant, suggesting that, in actuality, Black and White parents place responsibility for their child's school readiness on schools and parents at similar rates. Model comparisons of pseudo R^2 reveal that Model 4, which included the variables parental education and income, and the main effect of QR-efficacy (*pseudo* R^2 = .027), fit the

data best. Specifically in Model 4, the direct effect of QR-efficacy on LRSR shows that a 1-unit increase in QR-efficacy results in a 43% increase in placing more responsibility for school readiness with parents (β = .27, *SE* = .09, z = 2.88, p = .004). In other words, parents with higher levels of QR-efficacy believe that parents hold significantly more responsibility for their child's kindergarten-readiness than preschools, and that this belief is consistent across race, education-level, and income.

Further implications from the stepwise logistic regression display a non-significant mediation effect of QR-efficacy on the relationship between race/education/income and LRSR. In other words, the only determinant for where parents place responsibility for their child's school readiness, as indicated by this study, is their level of anxiety about performing math and reading, both alone and with their child.

Structural Equation Model

Figure 2 (see Appendix) displays the directed acyclic graph for the model regressing LRSR on parent race, income, and education, mediated by QR-efficacy using a structural equation model in Stata. A structural equation model was supplemented to accurately interpret the latent construct variable of QR-efficacy and its mediating effect on the exogenous and dependent variables. To aid in interpretation of the structural model, LRSR was reverted back to its original coding, and should be interpreted as continuous ranging from beliefs that only preschools should hold responsibility for a child's school-readiness to beliefs that only parents should hold responsibility for a child's school-readiness. After correlating the error terms that differentiate between math and reading anxiety, as suggested by the model indices, the model displayed an overall good fit to the data (χ^2 (12) = 22.07, p < .05, *RMSEA* =.05, *CFI* = .98, *TLI* = .97, *SRMR* = .03). Results of direct effects on LRSR are non-significant for all demographic

variables, while QR-efficacy remains a significant positive predictor for LRSR (β = .27, *SE* = .07, z = 4, $p < .001$). Results of the indirect effects of parent race, income, and education on LRSR reflect no mediating effect of QR-efficacy (β_{race} = .02, *SE* = .02, z = 1.31, p = .19, β_{ed} = .01, *SE* = .005, z = 1.28, p = .2, and β_{inc} = .02, *SE* = .02, z = 1.72, p = .09). These results support the stepwise regression with LRSR as a binary variable, indicating that parents who place more kindergarten-readiness responsibility on preschools are parents who hold lower levels of quantitative and reading efficacy. Most noteworthy is that this relationship is consistent across parent educational attainment, income level, and race.

Discussion and Limitations

Within critical race theory, this study developed hypotheses based on findings that display school-readiness disparities along racial, economic, and educational lines (Akee et al., 2019; Bloome, 2014; Duncan & Murname, 2015). While parental QR-efficacy was assumed to follow from these findings and display a trajectory reflecting the constructed and maintained racial disadvantages in education, results from this study show no such association between demographic characteristics and parental QR-efficacy or LRSR. Correlational results, as well as more robust methodology for determining mediation effects, displayed that Black and White parents hold similar rates of QR-efficacy, and of believing kindergarten-readiness is an obligation of either preschools or parents. This finding is incredibly meaningful for academic discourse that employs a deficits approach when investigating determinants of school-readiness disparities. While QR-efficacy was found to significantly predict parental school-readiness beliefs, this relationship was not dependent on parental experiences of race and socio-economic status, and should therefore not be considered a consequence of these factors. This study also provides support that the beliefs that parents hold about their efficacy as an educator in their

child's early development can have major implications for the decisions and behaviors parents make regarding in-home academic socialization and preschool enrollment. Expressly, results from the supplemental structural equation model suggest that a 10% increase in QR-efficacy results in moving 28% closer towards believing that parents hold all the responsibility for their child's school-readiness. Though this study does not argue that parents *should* hold all responsibility for their child's school-readiness, it does assume that parents who have greater beliefs that they should be readying their children for kindergarten, will most likely employ those behaviors in the home.

Because this study does not specifically look at behavior (e.g., whether parents actually enroll their child in preschool or engage in academic socialization in the home), Ajzen's (1991) Theory of Planned Behavior (TPB) models two necessary factors for predicting behavior given individual beliefs and intention. *Actual control* reflects whether or not certain conditions are present that raise or reduce the likelihood of enacting a certain behavior, and *perceived control* reflects whether individuals *believe* they can actuate a prospective course of action (Ajzen, 1991). The latter annotation remains at the center of this paper's investigation (i.e., QR-efficacy denotes a parent's perceived ability to perform an educational role in a child's math and reading development). TPB specifically allocates perceived control as a specialized predictor for intention and action because perceptions critically assess a number of intrapersonal attitudes that are necessary antecedents in human behavior (Ajzen & Fishbein, 1980). Specific to understanding the role perceived control plays in predicting behavior, perceived control is considered context dependent, and to aid individuals in gauging their probability of success for a specific behavior (Ajzen, 1991). Prior research lends further theoretical backing to this view (Bandura et al., 1980), namely that intrapersonal perceptions of confidence in an ability to

perform a certain action strongly predicts the behavior of that action. In terms of this study, this means that parents with higher levels of QR-efficacy are more likely to perform math and reading skill development in the home.

Actual control must still be considered for predicting behavior. TPB stipulates that if an individual holds an accurate representation of what a particular task demands of them, then perceived control is enough to permit the actualization of that task; actual control will not be essential (Ajzen, 1991). In the example of having adequate resources within the home for a parent to be able to engage in academic socialization (i.e., actual control), this discussion highlights that a parent's adequate representation of the necessary skills required to perform academic socialization may be less dependent on those material resources than on a parent's self-perceived cognitive adequacies. A parent need only read to the child or count with them to fulfill minimal kindergarten-readiness requirements; however, the perceived responsibility to do these tasks may drop significantly for a parent who regards their efficacy in reading and math as low, regardless of the educational resources surrounding them in their environment. Therefore, whereas the deficits approach for interpreting racial differences in school-readiness often employs evidence that a lack of access to learning materials due to social inequalities are efficient explanations for these gaps, results from these findings suggests that within group differences in perceived educational efficacy are perhaps a more potent predictor. Viewing these associations as *unrelated* to social inequality, as the findings from this study suggest, warrants new investigations into how perceived control and actual control interact in studies of educational inequality.

Other mechanisms should be considered that may better determine differences in QR-efficacy. The domain of gender is, for example, one area where evidence displays differences in

the beliefs that males and females hold about their own educational ability, specifically in math (Bian et al., 2017). These beliefs emerge early in the life course, and tend to persist throughout, permeating into stereotype beliefs about cognitive ability (Bian et al., 2017). In fact, a post analysis running the stepwise regression by gender showed that QR-efficacy was less significantly associated with LRSR for men. This finding highlights important implications for how policy measures should tackle kindergarten-readiness. For instance, if cognitive development in the home is a preferred goal in achieving equality in school-readiness measures, then addressing quantitative and reading efficacy, especially for mothers, is critical to those ends. Reducing stereotype threat, and increasing math and reading proficiency and competence, could aid in shifting locus of responsibility for a child's kindergarten-readiness more towards the home. It should be mentioned that the sample sizes for men and women were very divergent (N_{male} = 19, N_{female} = 277); however, it is plausible to still assume that gender differences do in fact exist for perceptions of educational efficacy (Bian et al., 2017). Replicating the procedure with more representative samples of gender would contribute to verifying this hypothesis.

Unfortunately, there is little work differentiating educational-efficacy from more general perceptions of Self-efficacy, even though some work in the area displays that Self-efficacy can be collapsed into more micro dimensions, like efficacies of task or domain (Jones & Prinz, 2005). This distinction (e.g., between general and specific efficacies) could help explain variation in individual efficacy. In spite of considering differentiation in efficacy, Hoover-Dempsey et al. (1992) demonstrated that self-reported parental efficacy had a significant positive relationship with the number of hours parents spent volunteering in their child's classroom and at home doing educational activities with their children. This suggests that a parent's general perceptions of efficacy may still predict how likely they are to engage in educational activities

with their child. Unlike the results from the current study, Hoover-Dempsey et al. (1992) also found that parental efficacy had a significant positive relationship with parental education. However, in line with the current study, other research has found no mediating effect of parental efficacy between parent education and a child's home learning environment (Peacock-Chambers et al., 2017). Together, these results imply that a parent's educational level and sense of self-efficacy may differentially impact parents' decisions relating to their child's academic and cognitive development.

Considering the above discussion, future investigations in this area would benefit from verifying QR-efficacy as a reliable tool for determining cognitive skill behavior in the home, while also differentiating it from more general notions of Self-efficacy. If QR-efficacy reliably predicts parent cognitive engagement, then a straightforward implication would suggest finding ways to simply improve QR-efficacy among parents or prospective parents. Preschools or pediatricians could work with parents, providing math and reading confidence-boosting activities or clear pedagogical material to engage with in the home. Light-touch interventions such as texting parents to engage in more in-home cognitive development have shown promising results in closing gaps between parental intention and behavior (List et al., 2018; Mayer et al., 2019; Mayer et al., 2023). Other inferences might involve reversing stereotype threat among girls in academic settings if indeed gender differences in QR-efficacy exist.

Lastly, in order to ascertain explanations for why subgroups convey differences in their beliefs about who is responsible for a child's school-readiness, future research should consider designing surveys around individual perceptions. Existing literature and theory contend that beliefs, attitudes, and values are necessary antecedents for intention and behavior (Ajzen, 1991; Schwartz, 2012). Therefore, parental intrapersonal perceptions should not be ignored for

addressing larger social inequalities. It is, in fact, arguably these perceptions, aggregated, that determine the policies and interventions for child wellbeing. Apropos, future research would benefit from applying theoretical frameworks that consider micro mechanisms that propel macro development. Bronfenbrenner's Ecological Systems Theory (Bronfenbrenner, 1977), or Coleman's scheme (Coleman 1987a, 1990 as cited in Raub et al., 2011), provide rigorous theoretical support for the inclusion of socially relevant factors in studies of human behavior. Take, for instance, Schelling's (1971) seminal work investigating the effects of residential segregation by ethnicity. While many social factors were found to predict segregation (e.g., race, income, religion, etc.), Schelling (1971) found that individual preferences and differences were stronger predictors for residential segregation, holding a microscope (so to speak) over the discriminate ways individuals make choices, behave, and, in turn, affect society. In sum, individual perceptions are critical to the analysis of larger societal phenomena, and future studies would do well to consider investigations that employ parental perceptions in studies of child outcomes.

Conclusion

This study fills an important gap for investigating disparities in kindergarten-readiness by examining parental intrapersonal perceptions as influential antecedents to larger societal issues. Parental perceptions of their effectiveness as an educator in their child's early education, as well as their perceptions about where that responsibility lies, provides a micro lens for examining macro questions about social inequality in education. This study's main contribution to the investigation of school-readiness gaps along lines of race or socio-economic status displays that these associations are non-significant. Importantly, a parent's QR-efficacy varies across race, income level, and educational attainment, and holds more predictive power for who parents

believe is responsible for their child's kindergarten-readiness, namely that parents with lower levels of QR-efficacy are more likely to believe LRSR resides with preschools than with parents. This significant finding provides empirical grounding for moving away from more essentialist and transgenerational views about correlations between race and educational disparities, and moving towards hypotheses based on heterogeneity within groups of different demographic characteristics. Though the findings presented here don't necessarily dispute possible associations between a parent's educational experience and perceptions of efficacy in their child's cognitive development, they do emphasize the importance of a parent's intrapersonal perceptions in their beliefs for readying their child for kindergarten. These perceptions may prove fundamental for investigations examining parent-level differences to explain child cognitive skill development and school-readiness gaps at the societal level.

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Appendix

Figure 1

Binary Indicator for LRSR

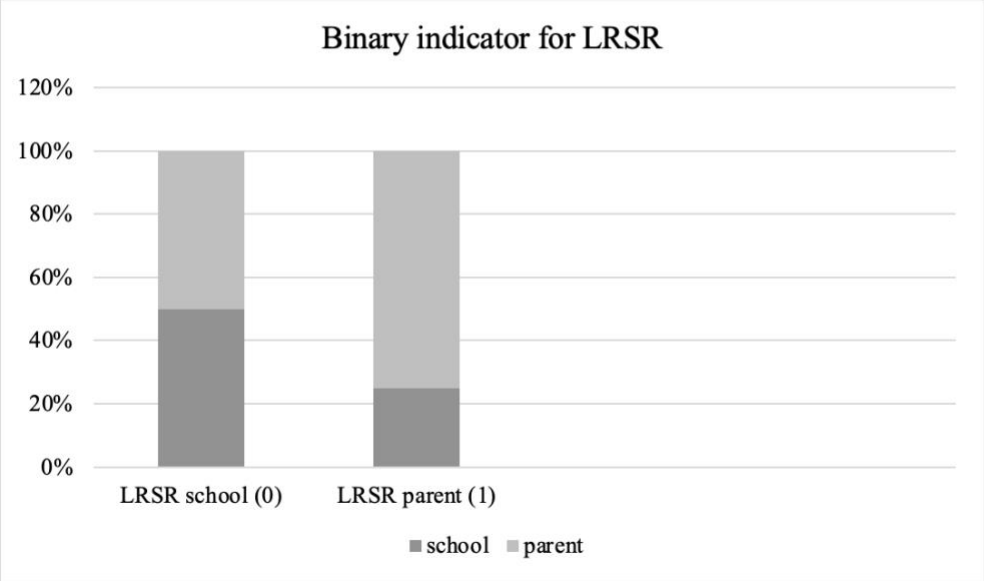

Table 1

Frequency Statistics for Independent Variables by Race

Independent Variables	Total		By Race	
	N	%Percent	%Black	%White
Race				
Black	135	46		
White	161	54		
Income				
Bottom tercile	147	50	64	38
Middle tercile	70	24	29	19
Top Tercile	79	26	7	43
Education				
<= 12th grade	30	10	7	13
HS diploma/GED	48	16	21	12
Voc/Tech diploma	21	7	8	6
Some college	71	24	36	14
AA	28	9	11	8
BA	58	20	11	27
Graduate degree	40	14	7	19

Table 2

Stepwise Regression

Stepwise Models	Model 1: LRSR	Model 2: LRSR	Model 3: LRSR	Model 4: LRSR
Black/White		-0.221	-0.216	-0.301
		(0.374	(0.416)	(0.269)
Education			-0.0499	-0.0736
			(0.520)	(0.360)
Income			0.0607	0.000550
			(0.746)	(0.998)
QR-Efficacy				0.262**
				(0.006)
_cons	-0.673***	-0.574***	-0.465	-2.610**
	(0.000)	(0.000)	(0.098)	(0.002)
N	296	296	296	296
Pseudo R-sq	0.000	0.002	0.003	0.027

Figure 2

Structural Linear Model with Mediating Effect of QR-efficacy