

The Missouri Quality Rating System School Readiness Study: Executive Summary

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This research was commissioned by the Metropolitan Council on Early Learning at the Mid-America Regional Council.

Research Question

Do preschool children who attend higher quality early childhood programs—as measured by Missouri QRS—show greater gains in school readiness than their peers who attend lower quality programs?

Study Participants

Thirty-eight licensed early childhood programs—32 centers and 6 family child care homes—participated in the study. The final sample consisted of 350 children ages 3 to 5 from 66 different classrooms. Only children who attended a program full-time (25 hours or more a week) were recruited into the study. Of the 350 participating children, 45% were female, 11% had special needs, 30% were eligible for free/reduced lunch, and 41% were minority. The specific race/ethnicity of the children was 59% White, 29% Black, 6% multiracial, 4% Latino/Hispanic, and 2% Asian. The mean age of children was 52.36 months ($SD = 5.67$); the mean number of monthly absences was 1.77 days ($SD = 1.59$).

Measures and Method

Program Measure

Programs were assessed with the Missouri Quality Rating System (MO QRS) using either the center and group home model or the home-based model. The models require documentation that programs meet the stated education and training requirements through the Professional Achievement & Recognition System (PARS). In addition, trained observers also assess the learning environment and verify family involvement and business/administrative practices. MO QRS consists of the following components: Administrator Education and Training, Staff Education, Education Specialization, Annual Training, Learning Environment, Intentional Teaching, Family Involvement, and Business and Administrative Practices. Programs were rated between January and May 2009. The MO QRS models are available at <https://www.openinitiative.org/content.aspx?file=QRSModels.txt>.

Child Measures

Because school readiness covers many aspects of development, a wide range of measures was selected, including assessments that cover vocabulary, early literacy skills, basic knowledge (shapes, colors), math skills, fine and gross motor skills, and social-emotional development.

Individual child assessments were conducted by experienced assessors in the fall of 2008 and in the spring of 2009. Each assessment session lasted approximately 40 minutes. To assess children's social-emotional development, teachers completed the *Devereux Early Childhood Assessment* (DECA) in the spring and fall.

Low, Medium, High QRS

Table 1 shows how programs scored on the MO QRS. Because few programs scored at the 1 and 5 star levels, we created three categories of quality based on star rating: Low (1-2 stars), Medium (3 stars), and High (4-5 stars). Table 1 also shows the number of children and programs associated with these QRS categories. The three QRS categories did not differ significantly with respect to gender, age, % of children with special needs, or % of children eligible for free/reduced lunch. There were significant differences in the % of minority children and mean number of monthly absences; thus, analyses controlled for differences in these variables.

Poverty

For purposes of this study, we define *children in poverty* as those whose families qualify to receive free or reduced lunch based on the Child and Adult Care Food Program. Children who do not qualify for free or reduced lunch are considered not in poverty.

Table 1. Number of Programs and Children by QRS Rating

QRS Star Rating	No. of centers	No. of homes	No. of children	QRS category	Total no. of programs	Total no. of children
1	1	0	9	Low	9	73
2	8	0	64			
3	16	3	209	Medium	19	209
4	6	2	59	High	10	68
5	1	1	9			

Repeated measures ANCOVAs, with mean number of monthly absences and minority status as covariates, were used to determine whether children from programs in a QRS category gained more from pretest to posttest than those from another QRS category.

Conclusions

(Specific results presented on opposite side.)

- This study provided preliminary evidence for the predictive validity of the Missouri Quality Rating System.
- In general, all children's social and emotional skills were hurt by low quality programs.
- Children in poverty attending low quality programs gained significantly less vocabulary than those in high quality programs.
- This study showed that children in poverty attending high quality programs made significant gains in early literacy skills and social-emotional development.

Given that the results of this study show that some aspects of children's school readiness are hurt by low quality programs, it is imperative that all children have the opportunity to attend medium or high quality programs. Children in poverty are particularly at-risk for falling behind in school readiness and thus need access to higher quality early childhood programs.

Overall Results

Low vs. High QRS Results

Compared to their peers in 1- and 2-star programs, children in 4- and 5-star programs showed statistically **significant gains on overall social and behavioral skills** ($p < .001$), **motivation** ($p < .001$), **self-control** ($p = .003$), and **positive adult relationships** ($p = .034$). Figure 1 presents these results in terms of gains. Note that children in low quality programs actually score lower over time.

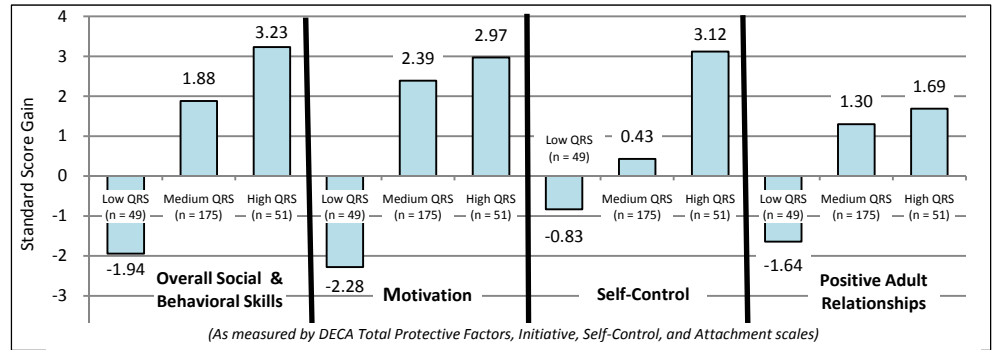


Figure 1. Average Gains on Measures of Social Skills for All Children

Low vs. Medium QRS Results

Compared to their peers in 1- and 2-star programs, children in 3-star programs showed statistically **significant gains on overall social and behavioral skills** ($p = .008$) and **motivation** ($p = .001$). For positive adult relationships, the gains were marginally significant ($p = .053$). Compared to peers in low quality programs, children in medium QRS programs showed fewer gains on knowledge of print conventions ($p = .043$).

Medium vs. High QRS Results

Compared to their peers in 3-star programs, children in 4- and 5-star programs showed marginally significant gains on self-control ($p = .064$).

Results for Children in Poverty

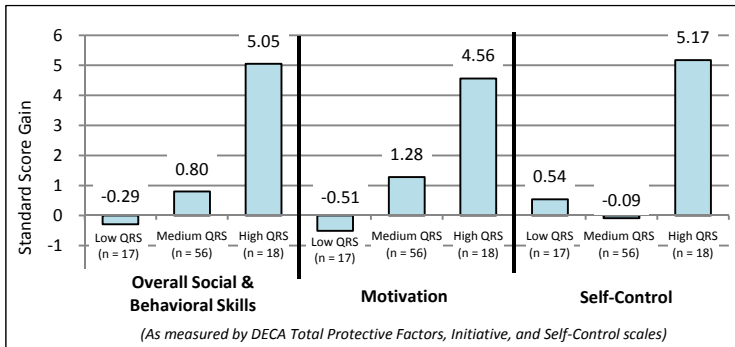


Figure 2. Average Gains in Measures of Social Skills for Children in Poverty

Low vs. High QRS Results

Compared to their peers in 1- and 2-star programs, children in poverty who attended 4- and 5-star programs showed statistically **significant gains from pretest to posttest on overall social and behavioral skills** ($p = .035$), **motivation** ($p = .037$), and **vocabulary** ($p = .022$). In addition, compared to peers in low quality programs, children in poverty from high quality programs showed marginally significant gains in knowledge of letters/sounds ($p = .063$), gross motor skills ($p = .086$), and self-control ($p = .085$).

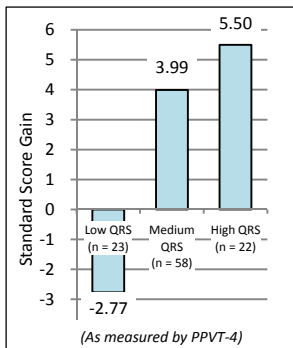


Figure 3. Average Gains in Vocabulary for Children in Poverty

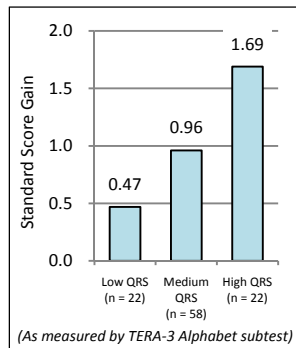


Figure 4. Average Gains in Knowledge of Letters/Sounds for Children in Poverty

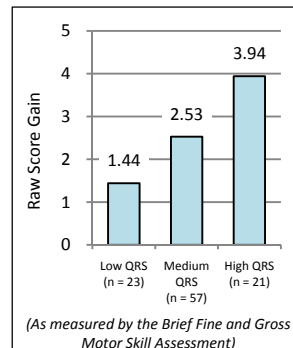


Figure 5. Average Gains in Gross Motor Skills for Children in Poverty

Low vs. Medium QRS Results

Compared to their peers in 1- and 2-star programs, children in poverty attending 3-star programs showed statistically **significant gains on vocabulary** ($p = .006$).

Medium vs. High QRS Results

Compared to their peers in 3-star programs, children in poverty who attended 4- and 5-star programs showed statistically **significant gains on self-control** ($p = .013$) and marginally significant gains in overall social and behavioral skills ($p = .079$).

Results for Children Not in Poverty

Low vs. High QRS Results

Compared to their peers in 1- and 2-star programs, children not in poverty who attended 4- and 5-star programs showed statistically **significant gains from pretest to posttest on overall social and behavioral skills** ($p = .003$), **motivation** ($p = .003$), and **self-control** ($p = .012$). In addition, compared to peers in low quality programs, children not in poverty from high quality programs showed marginally significant gains in print awareness/comprehension skills ($p = .071$); but showed marginally significantly fewer gains on fine motor skills ($p = .051$) and gross motor skills ($p = .062$).

Low vs. Medium QRS Results

Compared to their peers in 1- and 2-star programs, children not in poverty attending 3-star programs showed statistically **significant gains on overall social and behavioral skills** ($p = .004$), **motivation** ($p = .001$), and **positive adult relationships** ($p = .049$). Compared to peers in low QRS programs, children not in poverty attending medium QRS programs showed fewer gains on knowledge of print conventions ($p = .036$) and gross motor skills ($p = .050$).

Medium vs. High QRS Results

There were no significant differences for children not in poverty attending medium vs. high quality programs.