

Does Aligning Instruction Across Preschool and Kindergarten Support Students' Academic Skills? Evidence from Boston

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The problem: PreK fadeout or convergence effects

- PreK attenders have better academic and social-emotional skills than non-attenders prior to the start of kindergarten (e.g., Gormley et al., 2005; Lipsey et al., 2013; Puma et al., 2010; Weiland & Yoshikawa et al., 2013).
- Evidence from RCTs shows that differences lessen substantially as children move through early elementary school (e.g., Lipsey et al., 2018; Puma et al., 2012).
- Debate about contributors to fadeout with a number of underexplored hypotheses (Baily et al., 2017).

One hypothesis: Instructional alignment

- Kindergarten instruction may be repetitive (Engel et al., 2014).
- Teachers may spend time helping non-PreK attenders “catch up” (Bailey et al., 2017).
- Instruction may shift in kindergarten to whole group instruction & less play-based, child-directed activities (McCormick et al., under review)
- Aligned curricula tested in demonstration studies that cut across the early grades may help sustain gains that children make in PreK (Jenkins et al., 2018; Mattera, Jacob, & Morris, 2017).

Boston Public Schools' *Focus on Early Learning* curriculum & professional development model

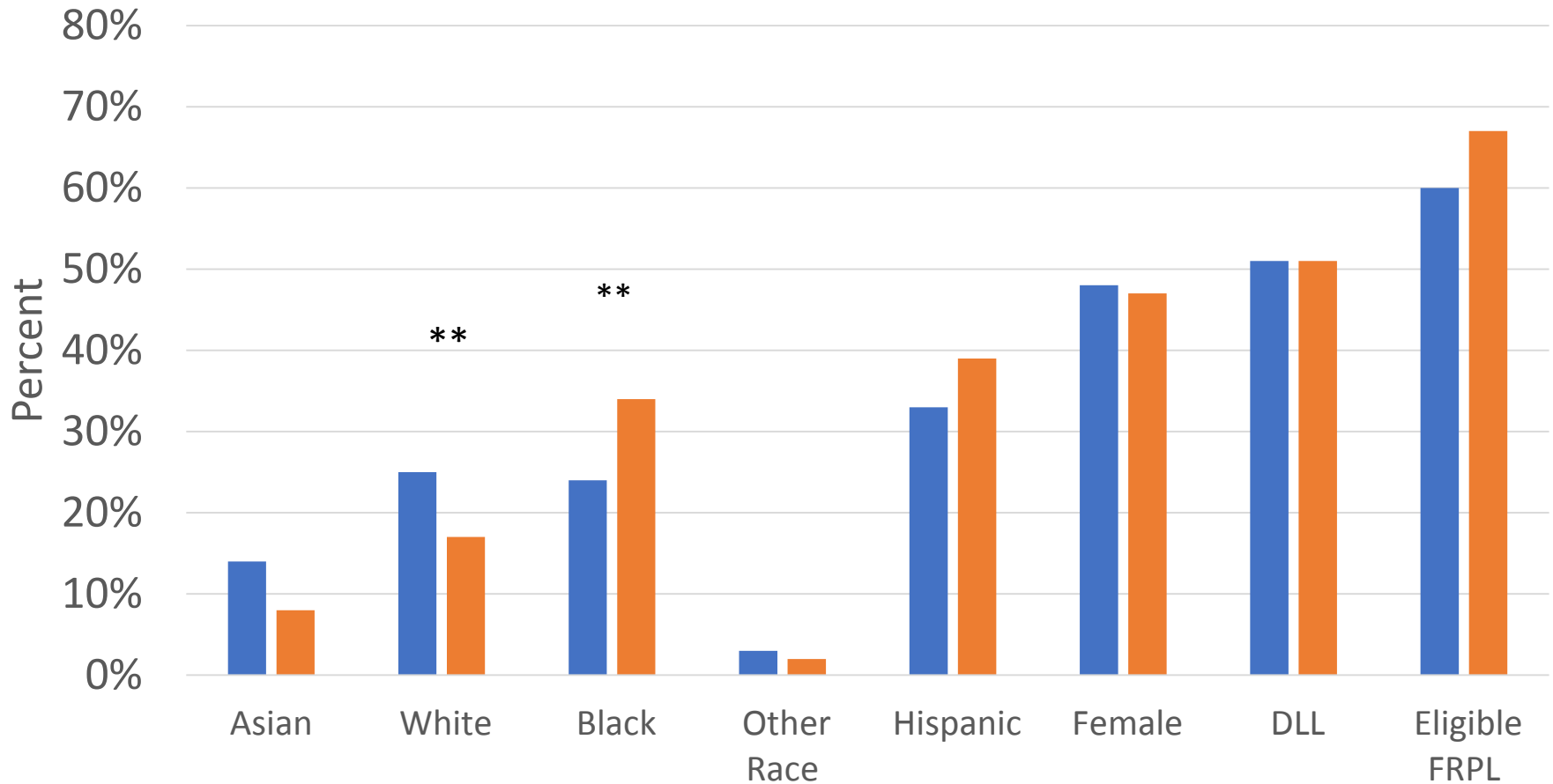
| Feature | Focus on Early Learning |
|------------------------|---|
| Content of instruction | <ul style="list-style-type: none"> • Limited redundancy • Theme-based lessons support content knowledge • Connections across subject areas • Deep content instruction |
| Format of instruction | <ul style="list-style-type: none"> • Primarily small-group • Student-directed, w/ teacher support • Project-based |
| Tailoring instruction | <ul style="list-style-type: none"> • Tailored instruction targeted at all children's level |
| PD | <ul style="list-style-type: none"> • All teachers receive some training and coaching • Monthly curriculum-focused seminars for teachers |

Research questions

1. How can intervention fidelity be used to measure instructional alignment?
2. Does instructional alignment vary by race/ethnicity, and family income?
3. Do children who experience greater instructional alignment across PreK and Kindergarten demonstrate faster gains in language and math skills between the start of PreK and the end of kindergarten?

Summary of design and sample

Study Demographics of Sample Recruited in PreK and Followed Into Kindergarten ($N = 283$)



■ Study sample

■ All BPS kindergarten students

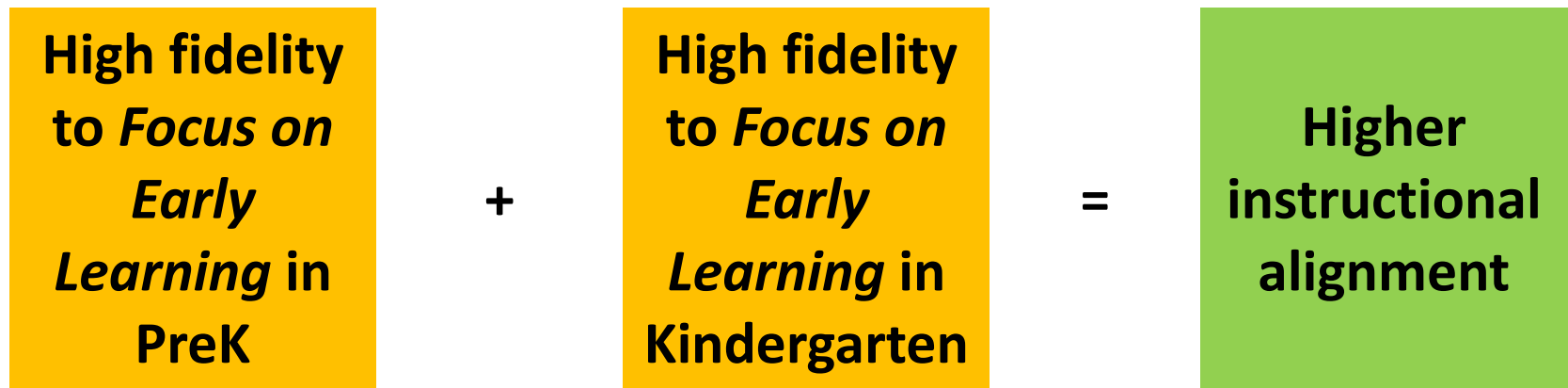


Classroom & teacher participants in PreK and K

(PreK includes public school & CBO programs; K includes only public school programs)

| Teacher characteristic | PreK %age/Mean | K %age/Mean |
|----------------------------------|-------------------|-------------------|
| Teacher age | 42.18 (SD = 9.43) | 38.37 (SD = 8.61) |
| Years teaching | 14.83 (SD = 8.86) | 12.62 (SD = 8.48) |
| Years teaching at current school | 8.41 (SD = 7.26) | 6.95 (SD = 5.89) |
| Teacher has master's degree | 71% | 82% |
| Teacher female | 96% | 91% |
| Teacher Black | 26% | 14% |
| Teacher White | 43% | 59% |
| Teacher Hispanic | 13% | 24% |
| Teacher Asian or other race | 18% | 4% |
| Classrooms per school | 1.35 (SD = .42) | 2.81 (SD = 1.04) |
| <i>N</i> | 51 | 83 |

RQ 1: Assess fidelity to *Focus on Early Learning* to create measure of instructional alignment

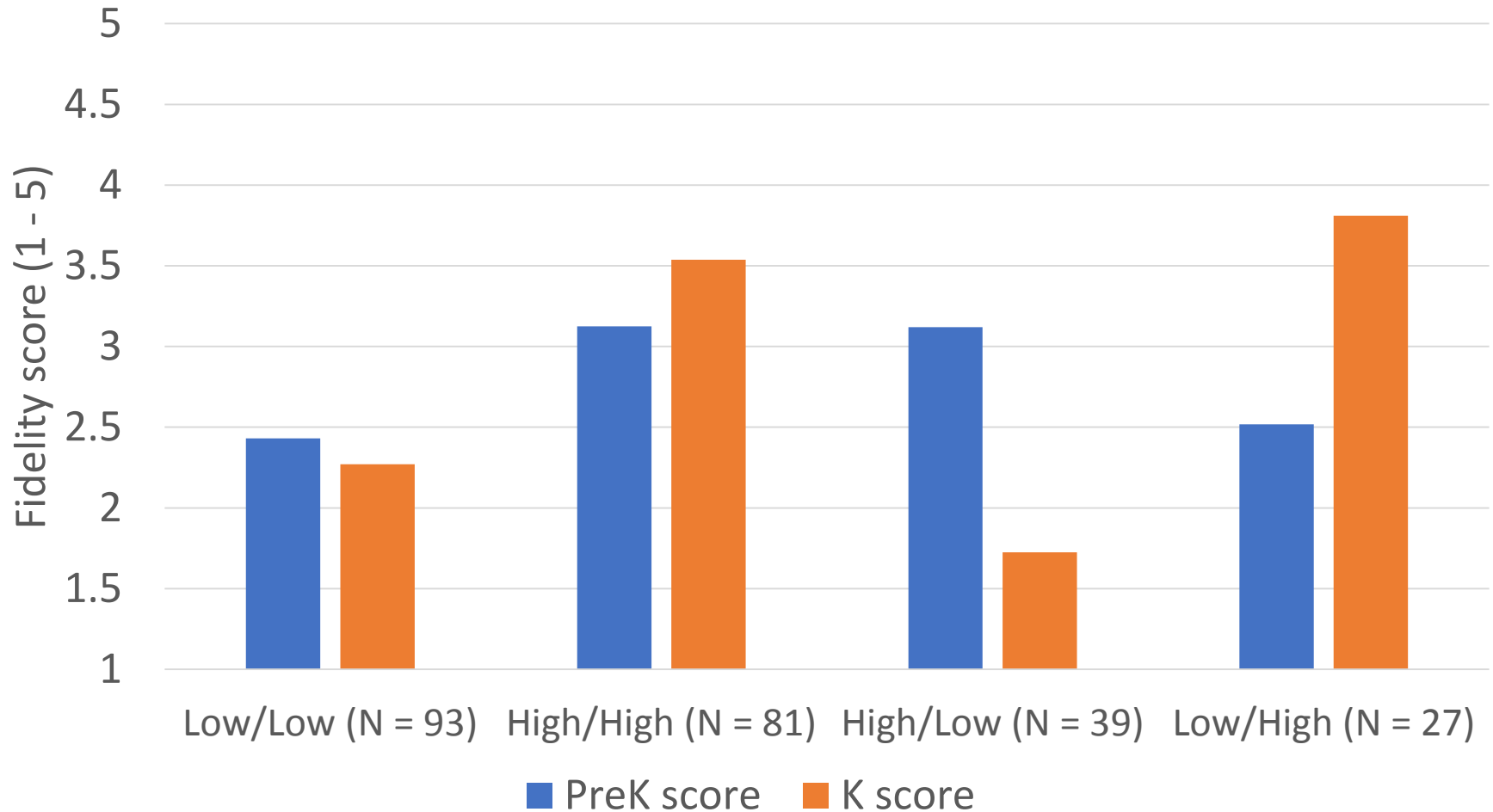


***Focus on Early Learning* model aims to align instruction across grades**

RQ 1: Measure fidelity to curriculum to create measures of instructional alignment

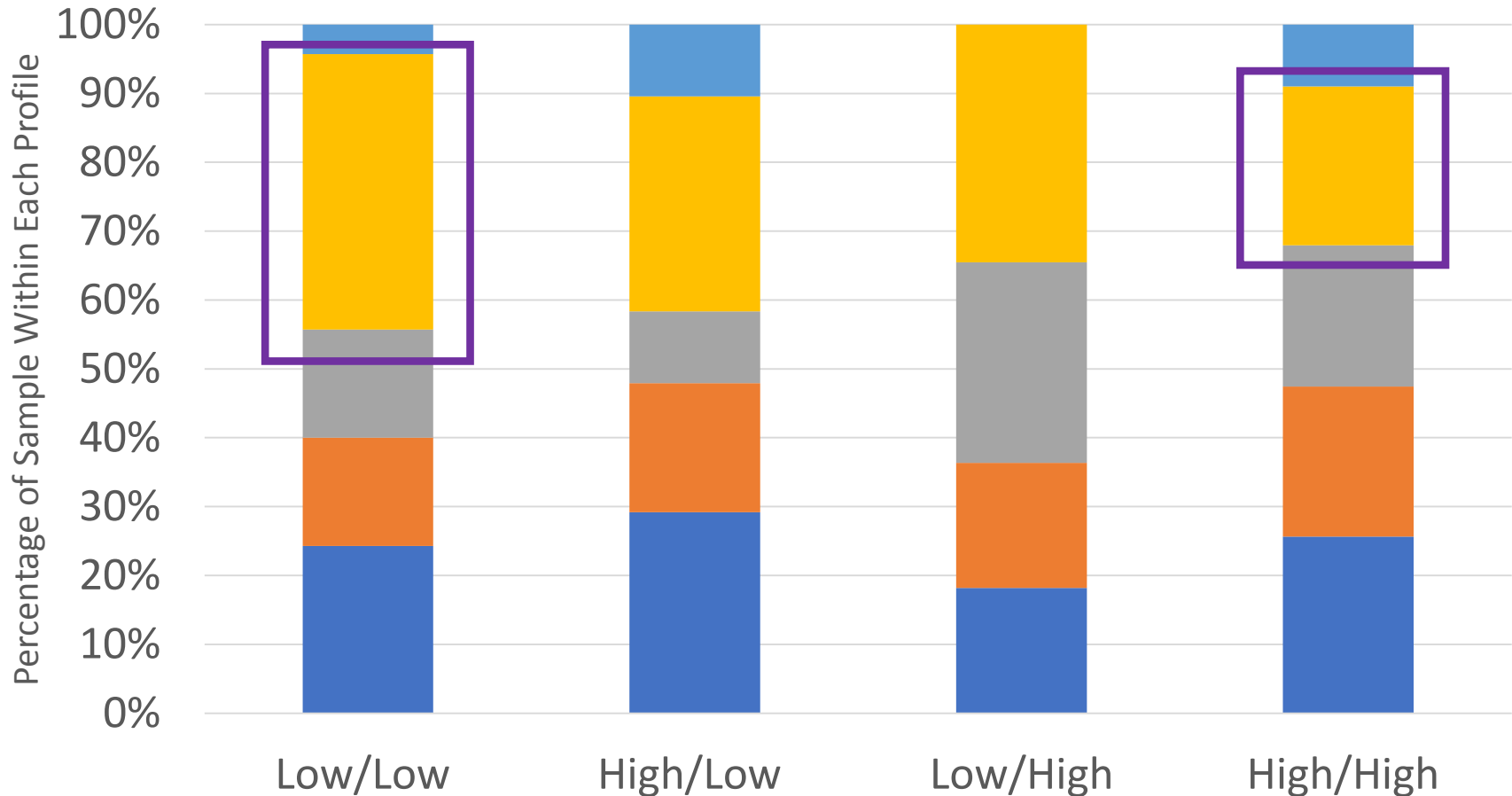
- Four “instructional moves”
 - Effectively extending/building on children’s learning
 - Use of rich vocabulary embedded into instruction
 - Making connections between instruction and outside/prior learning and effectively summarizing content
 - Scaffolding children’s learning and differentiating instruction

RQ 1: Profile Analysis Results



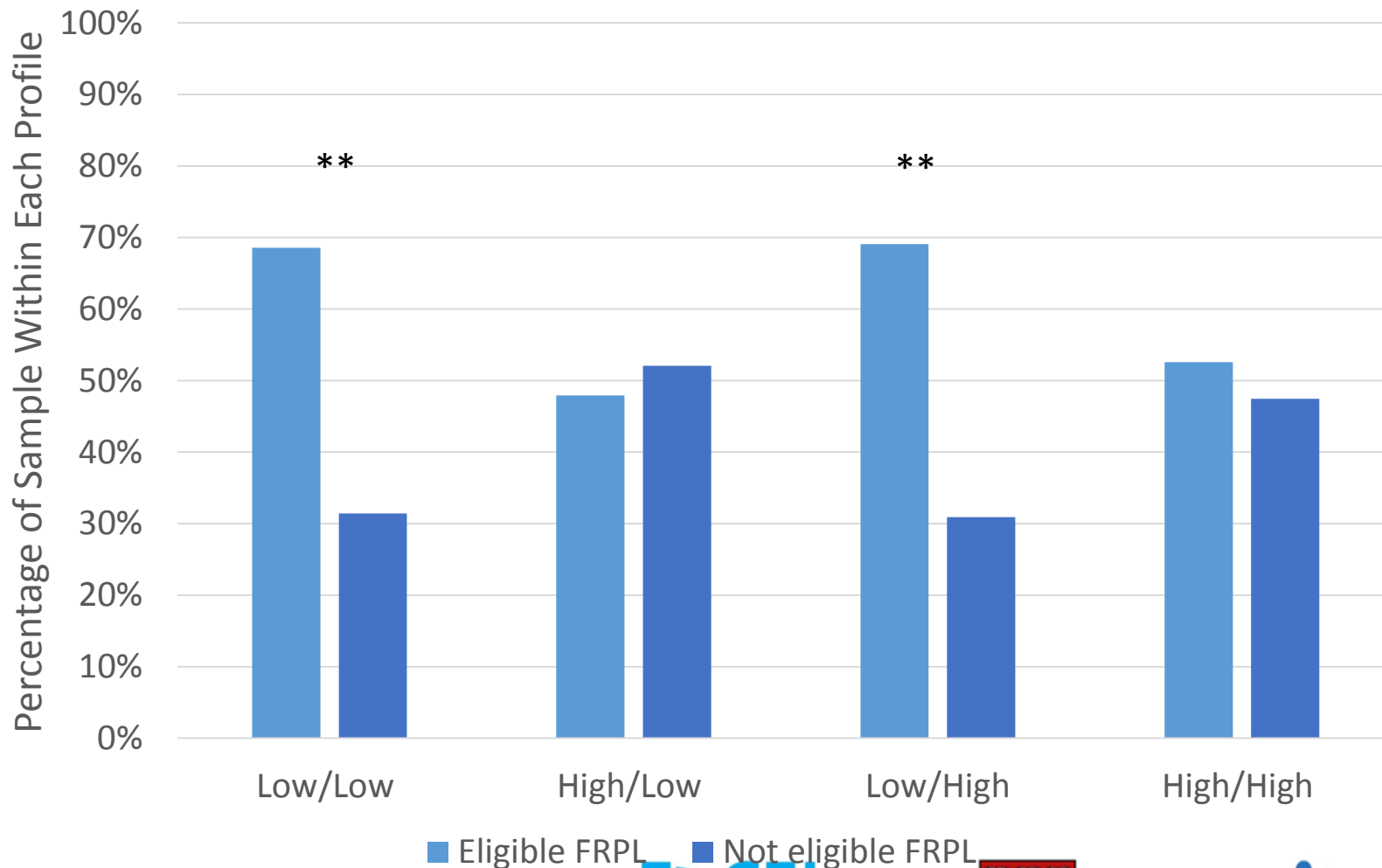
RQ 2: Does instructional alignment vary by race/ethnicity ?

Comparison of Fidelity Profiles by Race/Ethnicity

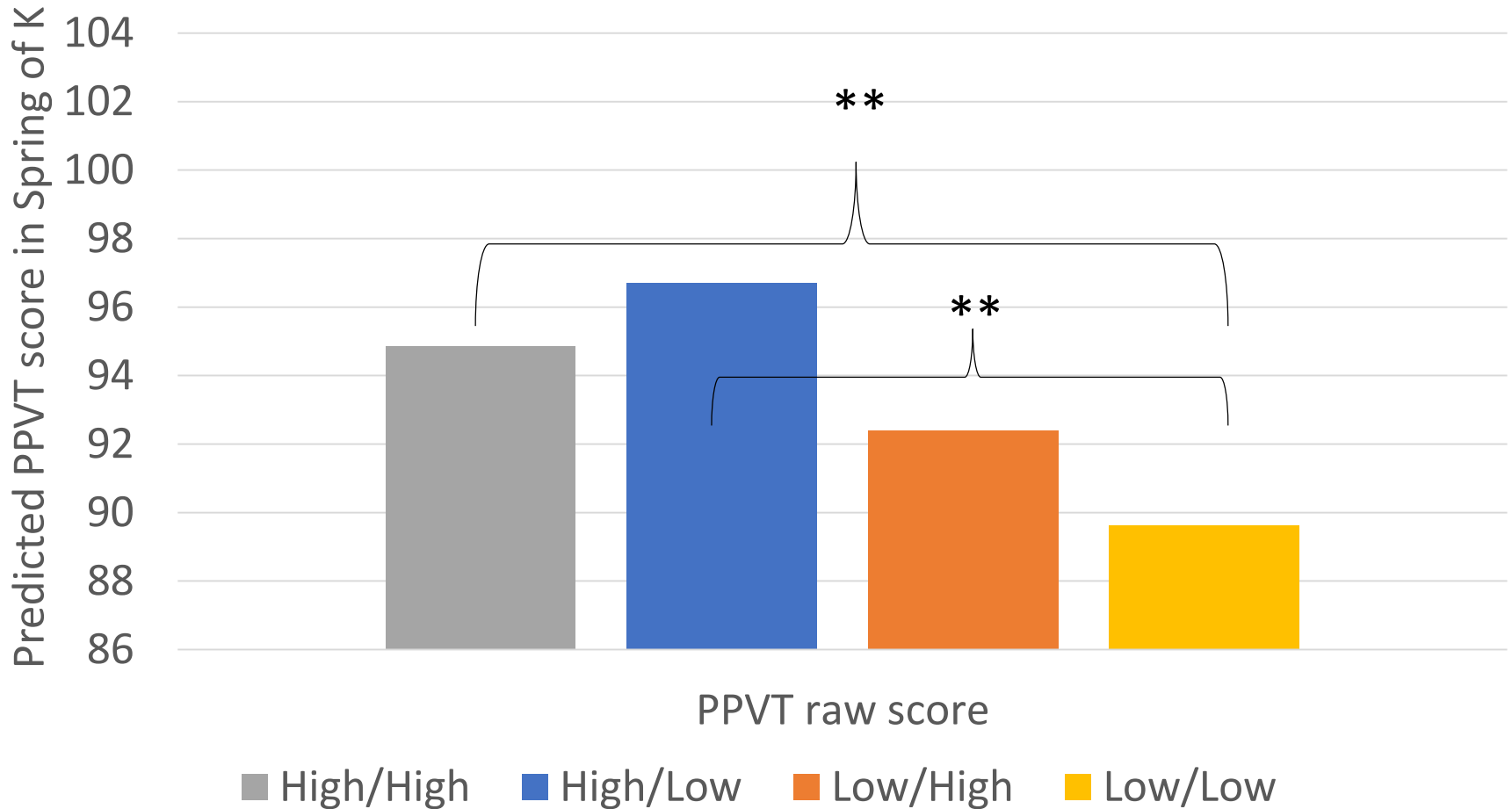


RQ 2: Does instructional alignment vary by family income?

Comparisons of Fidelity Profiles by Eligibility for FRPL



RQ 3: Effects of instructional alignment on gains in PPVT scores



Some preliminary conclusions

- Evidence that observations of instructional alignment generally match with district reports.
- Systematic variation in children's experiences with instructional alignment even in the presence of the *Focus on Early Learning* model.
- Greater instructional alignment may promote larger gains in vocabulary across PreK and K than low fidelity of implementation in PreK and K. No effects on math.

Limitations & next steps

- Findings cannot be interpreted causally.
- Teacher characteristics may drive fidelity to the Focus on Early Learning model.
- Examine variation in effects of fidelity for key subgroups.
- Investigate further set of outcomes, and consider instructional alignment across full PreK – 2nd period.
- Future work will consider a larger sample drawn from a greater number of schools and classrooms.

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