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Evaluating the "Piha Pono" Project: A Robust RTI Approach Integrating Reading, Mathematics, and Behavior Supports

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Executive Summary

This evaluation report examined the impact of the Piha Pono project—a project undertaken through a collaborative partnership between CRDG and the Hawaiʻi State Department of Education (HIDOE), Hawaiian Education Program Section—which provides early and strategic supports for reading, mathematics, and behavior through the adolescent years for Native Hawaiian students. Piha Pono was engendered by a longstanding partnership between (a) the Literacy and Hawaiian Education Section, Curriculum Research & Development Group (CRDG), University of Hawaiʻi at Mānoa and the (b) Hawaiian Education Program Office, Office of Curriculum, Instruction and Student Support (OCISS), Hawaiʻi State Department of Education. This evaluation report provides the findings from a quasi-experimental study to the director of the Piha Pono project, a robust response to intervention RTI approach integrating reading, mathematics, and behavior supports for Native Hawaiian students. It focused on the effects of Piha Pono interventions in 10 schools with larger percentages of Native Hawaiian students as well as students eligible for free or reduced-price lunch (used as a proxy for high levels of poverty) than the average across all HIDOE schools

To obtain the program's impact, we employed a rigorous statistical analysis using longitudinal data from the Hawaiʻi State Department of Education. Two major findings of this analysis are summarized below:

We detected a statistical significant effect of 4.25 points ($p = 0.04$) on third-grade HSA reading scores in favor of students from project schools. This corresponds to around 13 percent of a standard deviation (4.25/33.91 = 0.13) in our sample. Using the annual average gain from seven nationally-normed tests for grades 3 to 4—which is calculated as about 0.36 of a standard deviation as a standard reference (Lipsey et al., 2012)—we can therefore expect the third-grader in the program to gain 0.13 + 0.36 = 0.49 of a standard deviation, which is an additional gain of 36 percent (0.13/0.36) in reading achievement by end of third grade.

Second, we found a statistically significant ($r = 0.14$, $p < 0.001$) association between program dose and third-grade reading scores. Students who were in the program for more years had higher scores, on average, than their peers who were in the program for fewer years. To estimate this effect precisely we used HLM analysis, which takes into account the clustering of students within schools. Statistically controlling for kindergarten DIBELS baseline scores, each additional program year is associated with a 0.22 point increase in reading scores at the third grade level. This estimate was also statistically significant ($p < 0.001$). Our sensitivity analysis confirmed that the results were robust, and that program schools had increased their average third grade reading performance.

In sum, the findings are encouraging and provide support for further analyses in order to obtain a fuller account of the program's impact on students' long-term academic achievement. The focus on third-grade reading outcomes are in alignment with the research that

unequivocally shows reading proficiently by third grade is a strong predictor for future academic achievement. A primary aim of Piha Pono is to improve student outcomes, with an emphasis on early reading achievement, by ensuring that research-based practices are incorporated into program-schools' curricular and instructional components, and sustained over time.