PARCC Predictability Study – Longitudinal Analysis

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Research Brief

In this study, PARCC ELA scores and ISIP ER scores from a small, rural school district in the southwestern United States were examined. These scores covered the previous three school years (2016-17 through 2018-19). We examined the associations between ISIP ER and PARCC ELA scores longitudinally by analyzing ISIP ER scores from a given school year and PARCC ELA scores from the subsequent school year (i.e., 2017-18 ISIP ER scores and 2018-19 PARCC ELA scores), as well as examining the associations between multiple years of ISIP ER scores and one year of PARCC ELA scores. The district has a diverse student body. Approximately 36% are White, 61% are Hispanic/Latino, and 55% are economically disadvantaged. We conducted correlational and multiple regression analyses with these scores, and the key results of these analyses are as follows:

- ISIP ER scores were moderately to strongly positively correlated with PARCC ELA scores. Specifically, 2016-17 overall ISIP scores were strongly associated with 2017-18 PARCC ELA scores, and 2017-18 overall ISIP scores were strongly associated with 2018-19 PARCC ELA scores (r = .69 and .74, respectively). These statistically significant positive correlations indicate that ISIP ER scores have a high level of predictive validity in relation to PARCC ELA scores. These same relationships hold when examining associations between ISIP subtests and PARCC subtests.
- Multiple regression analyses found statistically significant positive associations between ISIP ER and PARCC ELA scores, after controlling for demographic variables and prior achievement on the PARCC. Specifically, a one point increase in spring 2017 ISIP ER scores was associated with an approximately one-third point increase in spring 2018 PARCC ELA scores, and a one point increase in spring 2018 ISIP ER scores was associated with a nearly two-thirds point increase in spring 2019 PARCC ELA scores for third grade students.
- Additional multiple regression analyses found statistically significant associations between multiple years of ISIP ER scores and PARCC ELA scores. Both spring 2017 (when the students were in first grade) and spring 2018 (when the students were in second grade) overall ISIP ER scores were significantly positively associated with third grade spring 2019 PARCC ELA scores, after controlling for prior achievement and demographics. These two years of ISIP ER scores explained approximately 50% of the variation in spring 2019 PARCC ELA scores. Table 1 outlines these results in more detail.
- Similar analyses, using spring 2017 and spring 2018 ISIP ER scores to predict spring 2018 PARCC ELA scores, and using spring 2018 and spring 2019 ISIP ER scores to predict spring 2019 PARCC ELA scores, showed in both analyses that both years of ISIP ER scores were predictive of PARCC ELA scores, but the current year of ISIP scores had more predictive validity. Thus, as would be

expected, spring 2018 ISIP ER scores were more predictive of spring 2018 PARCC ELA scores than were spring 2017 ISIP ER scores, and spring 2019 ISIP ER scores were more predictive of spring 2019 PARCC ELA scores than were spring 2018 ISIP ER scores.

Conclusion

ISIP ER scores were strong predictors of PARCC ELA scores. The predictive validity of ISIP ER scores remained high, even after controlling for PARCC pretest scores and demographic variables.

Table 1

Associations between Spring 2017-Spring 2018 ISIP Overall scores and Spring 2019 PARCC ELA scores, 3rd grade students

ISIP Score	Estimate	Standard error	P-value
Spring 2017 (Grade 1)	0.788***	0.097	<.001
Spring 2018 (Grade 2)	0.782***	0.129	<.001
N	427		
R^2	.502		