

Quasi-Experimental Design eligible to meet WWC group design standards with reservations

Researchers are interested in examining the effect of a novel mathematics curriculum that is currently being used in 20 fourth grade classrooms in a school district. The researchers obtain end of third grade test scores for all students in the district, and identify students who are in classrooms not receiving the intervention who have similar third grade test scores as the students in the 20 classrooms receiving the intervention. To estimate the effect of the intervention, the researchers compare the end of fourth grade test scores for the students in the intervention classrooms against the end of fourth grade test scores for the students who are not in the intervention classrooms.

- **Distinct groups?** Yes, we have one group of students who are in the intervention classrooms and a different set of students who are not in the intervention classrooms.
- **Baseline equivalence?** Yes, the groups are likely to be equivalent at baseline, because the comparison group was purposively selected to have matching end of third grade test scores.
- **No confounding factors?** Given the limited description here, it does not appear that there are any confounding factors that could compromise the internal validity of the study.
- **Summary** – This study appears to be a well-implemented QED, and is eligible to Meet WWC Group Design Standards with Reservations

Quasi-Experimental Design that does not meet WWC group design standards

An elementary school adopts a computer-based vocabulary game in fall 2013 to assist its fourth grade students improve performance on the end-of-year state reading assessment. To assess the impact of the vocabulary game, the study compares student performance on the state reading assessment for the students who received the intervention (students who complete the spring 2014 reading test), to the prior year's cohort of 4th grade students (those students who completed the spring 2013 reading test). To ensure that the groups were comparable, the study examined student achievement for both cohorts on the end of 3rd grade state tests, and the average reading scores across cohorts were nearly identical.

- **Distinct groups?** Yes, we have one group of students who received the vocabulary game intervention (the fourth grade students in the 2013-14 school year), and a different set of students who did not receive the intervention (the fourth grade students in the 2012-13 school year).
- **Baseline equivalence?** Yes, the groups are likely to be equivalent at baseline, because the study asserts that the groups had nearly identical end of 3rd grade state test scores.
- **No confounding factors?** No – this study compares two adjacent cohorts as the intervention and comparison groups. Such a design has a potential “history” confounding threat – for example, the 4th grade state reading assessment could have been re-normed between spring 2013 and spring 2014, and therefore, any difference in test scores might have been caused by the re-norming, rather than the intervention itself.
- **Summary** – Because this study compares cohorts of students at different points in time, this study has a history confounding factor. As a result, the study Does Not Meet WWC Group Design Standards.