Tennessee's Project STAR

Class size is not pupil/teacher ratio. One significant study (Boozer & Rouse, 1995) found that average class size–a more direct measure of classroom organization–was more important to academic achievement than the pupil/teacher ratio.

Tennessee's Project STAR. Project STAR, the only large-scale, controlled study of the effects of reduced class size, was conducted in 79 elementary schools in the state of Tennessee. Within each participating school, children entering kindergarten were assigned at random to one of three class types: small (S) with an enrollment range of 13 to 17 pupils; regular (R) with an enrollment range of 22 to 26 pupils; or regular with a full-time teacher aide (RA) with 22 to 26 pupils. Teachers also were assigned at random to the class groups. Teachers in the STAR classrooms received no special instructions of any sort, and the duties of teacher aides were not prescribed but were left to the teacher's discretion.

Classes remained the same type (S, R, or RA) for 4 years, until the pupils were in grade 3. A new teacher was assigned at random to the class each year. Standardized achievement tests (Stanford Achievement Tests, or SATs) were administered to all participating students at the end of each school year. Also, curriculum-based tests (Basic Skills First, or BSF) reflecting the state's instructional objectives in reading and mathematics were administered at the end of grades 1, 2, and 3. Finally, a measure of motivation and self-concept intended for young children also was administered to each pupil (Milchus, Farrah, & Reitz, 1968). In all, about 7,500 pupils in more than 300 classrooms participated in the 4-year longitudinal study.

The design of STAR, together with its magnitude and the follow-up research conducted after the 4-year period, led Harvard's Frederick Mosteller to term Project STAR "[a] controlled experiment which is one of the most important educational investigations ever carried out" (1995, p. 113).

The primary results: Differences among the three class types were highly statistically significant for all sets of achievement measures and for every measure individually.

- ***In every case, the significance was attributable to the superior performance of children in small classes, and not to classes with full-time teacher aides.***

A significant small-class advantage was found in inner-city, urban, suburban, and rural schools alike and the advantage of small classes was found both for males and females.

In sum, due to the magnitude of the Project STAR longitudinal experiment, the design, and the care with which it was executed, the results are clear:

- ***This research leaves no doubt that small classes have an advantage over larger classes in student performance in the early primary grades.***

The follow-up: the Lasting Benefits Study. After the positive STAR findings, Tennessee authorized a study to see how long the initial benefits of small classes would persist. Although all children were returned to regular-size classes in grade 4, the Lasting Benefits Study (LBS) continued to follow a significant portion of these pupils. In the 1995-1996 school year, the majority of STAR students were in grade 10 and were still being tracked.

The primary results: Students who had been in smaller classes had higher achievement in all academic areas compared to students in regular or teacher-aide classes; pupils who had been in small classes were rated as expending more effort in the classroom, taking greater initiative with regard to learning activities, and displaying less disruptive or inattentive behavior compared to their peers who had been in regular-size classes. Small classes in the early grades have significant long-term consequences for all students generally.

(from www.ed.gov/pubs)