

## What is scientifically based research?

### **(IDEIA 2004) Sec. 300.35 Scientifically based research.**

Scientifically based research has the meaning given the term in section 9101(37) of the Elementary and Secondary Education Act (ESEA).

(Authority: 20 U.S.C. 1411(e)(2)(C)(xi))

**Section 9101(37) of ESEA**, as amended by *NCLB (No Child Left Behind)*, defines scientifically based research as “research that involves the application of rigorous, systematic, and objective procedures to obtain reliable and valid knowledge relevant to education activities and programs.” The statute then explains that this kind of research:

1. Employs systematic, empirical methods that draw on observation or experiment;
2. Involves rigorous data analyses that are adequate to test the stated hypotheses and justify the general conclusions drawn;
3. Relies on measurements or observational methods that provide reliable and valid data across evaluators and observers, across multiple measurements and observations, and across studies by the same or different investigators;
4. Is evaluated using experimental or quasi-experimental designs in which individuals, entities, programs, or activities are assigned to different conditions and with appropriate controls to evaluate the effects of the condition of interest, with a preference for random-assignment experiments, or other designs to the extent that those designs contain within-condition or across-condition controls;
5. Ensures that experimental studies are presented in sufficient detail and clarity to allow for replication or, at a minimum, offer the opportunity to build systematically on their findings; and
6. Has been accepted by a peer-reviewed journal or approved by a panel of independent experts through a comparably rigorous, objective, and scientific review. (Note: practitioner journals or education magazines are *not* the same as peer-reviewed academic journals.)

The statute also requires that all SEA (State Education Agency) activities supported with program funds must be based on a review of scientifically based research, and the SEA must maintain documentation that explains why it expects those activities to improve student academic achievement.