

References and Resources for  
**Making Group-Instruction More Effective for Students with Autism**  
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*Review of Evidence-Based Practices for Autism Spectrum Disorders*

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*ASR: Research, Conceptual Papers and General Strategies*

"Active student response (ASR) can be defined as an observable response made to an instructional antecedent. To say it less technically, ASR occurs when a student emits a detectable response to ongoing instruction" (Heward, 1994, p. 286). A consistent and robust finding of educational research is that increased academic achievement is correlated with active student responding. Investigators who use group comparison or statistical inference research methodology (e.g., Fisher & Berliner, 1985) refer to this critical variable as academic learning time (ALT), while researchers using repeated measures or single-subject methodology (e.g., Greenwood, Delquadri, & Hall, 1984) are more likely to use the term opportunity to respond (OTR) or ASR (e.g., Drevno et al., 1994). The basic finding from both research camps is essentially the same, and this finding has shown generality across students, settings, and curriculum content. This finding can be summed up like this: *When students actively respond during a lesson they will learn the lesson better than if they passively attend to it.*

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### *Choral Responding*

Choral responding—all students in the class responding orally in unison to a question or item presented by the teacher— has been around since the days of the one-room schoolhouse. CR is the simplest and fastest way to increase student participation in group lessons. CR has been the response mode in numerous studies demonstrating a strong relationship between frequent ASR during instruction and improved learning outcomes (e.g., Maheady, Michielli-Pendl, Mallette, & Harper, 2002; Sterling, Barbetta, Heward, & Heron, 1997) and has been used successfully with students with disabilities (e.g., Cihak, Alberto, Taber-Doughty, & Gama, 2006; Flores & Ganz, 2009; Sterling et al., 1997).

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<i>Response Cards</i>
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Response cards are cards, signs, or other items simultaneously held up by all students in the class to display their responses to questions or problems presented by the teacher. With preprinted RCs, each student selects from a personal set of cards the one with the answer he wishes to display. When using write-on RCs, students use dry-erase markers to write their answers on blank cards that they erase between learning trials. Numerous studies in general and special education classrooms at the elementary, middle, and secondary levels have found increased rates of student responding, higher accuracy of responding, and higher scores on quizzes and tests when RCs were used compared to lessons in which the most common method for obtaining student participation during group instruction—having each question answered by individual student.

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