Practice Brief: Complex Instruction

Background: San Francisco Unified School District is in its second year of supporting its high school mathematics teachers in the use of Complex Instruction (CI). The instructional approach of CI stems from Stanford Professors Elizabeth Cohen and Rachel Lotan's groundbreaking research about group work. In two books, *Designing Group Work* (Cohen, 1994) and *Working for Equity in Heterogeneous Classrooms* (Cohen and Lotan, Eds., 1997), Cohen and Lotan argue that students' self-perception of smartness and teachers' perception of the students influence the students' participation and access to new content. Teachers overcome perceptions and improve student achievement by using specially designed, rigorous curriculum that requires multiple mathematical abilities and teacher planning that promotes equitable interactions.

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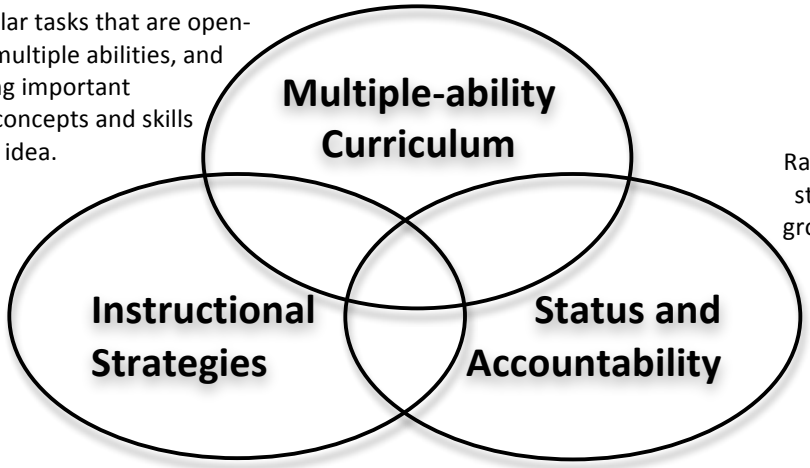
How CI works in a classroom: Teachers focus on mitigating students' status in their classrooms by using cooperative learning tasks to influence their own perceptions and students' perceptions of students' competence. Figure 1 shows the three components of CI that influence the shift in perceptions.

Figure 1: Components of Complex Instruction

Provide curricular tasks that are open-ended, rich in multiple abilities, and support learning important mathematical concepts and skills central to a big idea.



Raise intellectual expectations for all students, hold individuals and small groups accountable for learning, and intervene in status issues.

Develop autonomy of and interdependence within each group through the use of norms, roles, and teacher interventions.

CI in SFUSD: In partnership with Lisa Jilk (University of Washington), Carlos Cabana (classroom teacher at Mission HS), and Evra Baldinger (UC Berkeley and former SFUSD teacher) and through funding and support from the SFUSD's Office of Academics and Professional Development, as well as the help of Phil Daro and the Strategic Education Research Partnership (SERP), San Francisco is offering CI professional development to its second cohort of math teachers during the 2010-2011 school year. A total of 31 math teachers are actively engaged in this work. The CI professional development includes a workshop over the summer, follow-up workshops during the school year, after school support and networking, and an online community. The teachers receive six, one-on-one coaching sessions throughout the school year. Many school sites benefit from having multiple teachers participating with the intention that teachers support each other weekly.

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