

Establishing an Equitable Classroom Culture: An Introduction to Complex Instruction for Science Teachers



Transforming Mathematics & Science Education

Through this Knowles Academy course, teachers will be introduced to Complex Instruction, an instructional strategy that emerged from the field of mathematics education. Complex Instruction promotes an equitable classroom culture through the development of high cognitive demand tasks that allow students of all abilities to contribute, group work structures and teacher moves that disrupt traditional participation patterns, and techniques that help teachers develop classroom norms that promote participation and learning for all students.

Calls for student-centered classrooms that provide opportunities for students to engage in both the practices and content of science often require students to work together in groups. But group work by itself is far from a silver bullet. How do you develop tasks that are worth having students do together? How do you keep kids actually working together rather than socializing or simply working alone next to one another? Why does it seem like one student is doing most of the work? And why does group work seem to work well for some kids but not others? Complex Instruction (CI)—an instructional strategy that emerged in mathematics education—is a research-based strategy for disrupting some of the common pitfalls of traditional group work while engaging students in rigorous content. Knowles has adapted this strategy for science classrooms.

This sustained professional development course is designed for teachers who seek to promote equity in their science classrooms. Initiated by a two-day, in-person workshop—and supplemented with a one-day, closing workshop—this course will provide teachers with the opportunity to become familiar with and experience CI, plan lessons using CI, and receive weekly coaching and support as they implement components of CI in their classrooms.

Course Objectives:

- Identify the components of Complex Instruction (CI) and develop specific plans for implementing components of CI in their classroom
- Use participation quizzes, role interventions, and status treatments to disrupt traditional participation patterns
- Develop instructional tasks that use the multiple abilities treatment
- Redefine what it means to be “smart” in your classroom
- Hold all students’ accountable for group participation and intellectual contributions
- Plan, enact, collect data, and reflect on lessons that use Complex Instruction

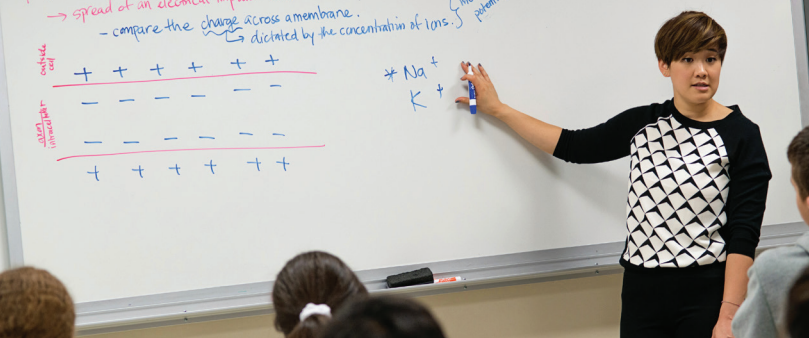
Date: Summer 2018 with follow-up dates throughout the school year (TBD)
Time: 8:30 am - 4:30 pm (coffee and lunch provided)
Location: Moorestown, NJ
Price: \$50 (\$800 value)

Optional Graduate Course Credit Available - Additional Fees Apply



“The opportunity to learn about equity was incredibly valuable in supporting my thinking on a deeper level and giving me strategies to support and analyze equity/access in my classroom.”

Carly Brown, Earth Science Teacher,
Harwood Union High School,
Moretown, VT



For Teachers, By Teachers

The Knowles Academy offers professional development services that are designed and facilitated by experienced teachers.

- 01 Teachers supporting teachers:** Teachers learn best from other teachers. All professional development that we provide includes experienced teachers as instructors and coaches.
- 02 Professional community development:** Teaching can be isolating. All of our professional development services are designed to build teacher community so that participants can continue to support each other's learning and professional growth long after the professional development experience ends.
- 03 Long-term support for sustainable change:** Effective teacher professional development must be sustained and tied to classroom practice. All Knowles Academy programs include long term support from coaches, opportunities for teachers to ground their learning in current practice, and engage with other Knowles Academy participants over an extended period.
- 04 Professional expertise and leadership:** Designing and implementing effective professional development requires a diverse range of expertise and experience. All of our professional development services draw and build on the expertise developed within the Knowles community over the last 15 years.

The Knowles Teacher Initiative supports the efforts of high school mathematics and science teachers to improve education in their classrooms and beyond. We are committed to supporting a national network of mathematics and science teachers in developing as leaders and collaborators, facilitating exploration and innovation and ultimately improving mathematics and science education in the U.S. Visit www.knowlesteachers.org to learn more.

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Agenda:

Teachers will receive ongoing coaching that is initiated by a two-day, in-person, workshop and concluded by a one-day, in-person workshop.

Day 1: Introduction to Complex Instruction

- Explore the key differences between the strategies employed in Complex Instruction and in traditional classrooms
- Develop actionable norms for classrooms
- Experience a Complex Instruction task

Day 2: Develop Lessons with Components of Complex Instruction

- Define smart(s) in class
- Shift perceptions of students' status in your classrooms
- Design science tasks that support CI
- Modify lessons to support CI

Between Workshops:

- Teach lessons and collect data based on your work from Day 2

Day 3: Refine Practice with Complex Instruction

- Analyze data collected from implementation of components of CI
- Using the above analysis, consider the implications of the enacted instruction—what have I learned about implementing CI and what have I learned about my students' engagement and learning?
- Develop "next steps"
 - » Modify/develop a group worthy/conversation worthy task
 - » Include opportunities for students to demonstrate the use of actionable norms
 - » Include components to promote the shifting of status
 - » Include strategies to hold all students accountable

All Knowles Academy courses can be customized to meet the specific needs of schools and districts.

For more information, visit www.knowlesteachers.org/knowles-academy.