

# Working Together, We Can Produce Genius

By [Peter DeWitt](#) on February 12, 2013 6:31 AM - EDUCATION WEEK BLOG...

**Today's guest blog is written by Robert Garmston and Valerie von Frank**

When Thomas Edison invented the light bulb, he wasn't sitting alone in his office thinking deep thoughts. He was surrounded by a few dozen scientists working together in the Menlo Park complex, working, in fact, in large open spaces where they could discuss ideas and collaborate. Many of the men even went home together at the end of the day to a nearby boarding house.

Despite popular conceptions that genius is solitary work, research is offering increasing evidence that collaborative groups come up with more and better ideas than do individuals working alone.

Schools have started to shift, out of necessity, from teachers working in isolation to teachers combining efforts to work more strategically. The leader's job is to maximize the potential of these groups. And the first step in maximizing potential is a foundational understanding what makes groups work--and what doesn't. Leaders can begin with three ideas.

**The group is (almost) always smarter than its members.** Working together in groups, humans have a collective intelligence that exceeds the intelligence of the smartest member or the average of the group members' intelligence, according to research. The idea of collective intelligence, the wisdom of the group, has gone from folklore (two heads are better than one, the wisdom of the crowd) to scientific inquiry with researchers from MIT and the nation's leading universities studying its existence.

Of course, when one member subverts the intention of the group and dominates the conversation, or when squabbling silences voices, the full intelligence quotient of the group is not reached. The group is wiser when individual members contribute meaningfully and without relying on decisions to be handed to them. Leaders and groups should understand the potential of the group's collective intelligence. What is collective intelligence? *"Most of the things we think of as human intelligence really*

*arise in the context of our interactions with other human beings,"* says **Thomas Malone**, a professor of management at MIT. "Most of our intellectual achievements as humans really result not just from a single person working all alone by themselves, but from interactions of an individual with a culture, with a body of knowledge, with a whole community and network of other humans." Researchers found that what we have long supposed makes good groups--motivation, group satisfaction, cohesion--actually does not produce that collective wisdom. Group cohesion, in fact, easily becomes groupthink in which members go along to get along. That inability to hear different voices and perspectives is the downfall of intelligent decision making--our next point.

**The wisdom of the group can create better decisions.** Some of the brightest minds in the country have been working together to understand the systems behavior of ants, bees and birds. Stanford University biologists are studying the swarm intelligence of ant colonies, in which no single ant dictates decisions to the others in the colony. Individual interactions lead to decisions for colonies that may include a half-million ants. There are no managers. Yet the ants work together to find food, allocate workers to different tasks, and defend their territory. From Cornell University and the University of California, Riverside come studies of honeybees' decision making. Hives have tens of thousands of bees, yet they work together to make decisions for the colony as a whole. For example, in finding a new home, a group of scout bees will make its case to try to persuade others of the benefits of the place by doing a sort of dance. As more bees become convinced, they cluster until a quorum forms on which location the group should select. The bees' decision making includes a diversity of options, competition among the ideas, and a method for selecting the final option. When birds flock, no one bird is telling the others how to avoid colliding or what direction to head. The birds stay close to one another, fly in the same direction, and don't interfere with the others' flights. From starlings to pigeons, the same thing happens. The

birds self-organize. We see the same in herds of animals on land and in schools of fish. In swarm intelligence, individuals act on local intelligence-- the information from those around them.

**Who's in the group matters.** Research out of MIT studying which groups more effectively solved a series of tasks laid out in an experiment identified three common characteristics of more intelligent groups. In two studies with 699 people, the participants took standard intelligence tests and then were assigned randomly to teams. Researchers asked the teams to complete several tasks involving brainstorming, decision making, and visual puzzles, and to solve a complex problem. The teams then were rated on how well they performed the tasks.

Smart groups that were able to solve the complex tasks had more members with higher social sensitivity (awareness of others' feelings, emotional intelligence), allowed all voices to be heard and were better able to allow turn taking, and, finally, had more women. The researchers posit that women may have higher social sensitivity, leading to this result.

A study from Northwestern found that including a mix of veterans and newcomers in the group led to greater creativity and better solutions. A second factor in success was including a few experienced people who had never worked with one another before.

These ideas have interesting implications for schools today. One way, for example, to extend a group and increase its intelligence quotient may be to rely on communities of practice beyond the school building, including educators who are networked with others either in the district or technologically. Our groups are virtually limitless.

Others emphasize creating collaboration to build collective intelligence, developing collective intelligence by encouraging openness, peering (allowing members to adapt and build on one another's ideas), sharing ideas, and acting

globally to access ideas. A group's collective intelligence determines the group's ability to engage in complex cognitive work that results in improved outcomes. Groups, particularly groups that develop their collective intelligence, are a tremendous force both for change at the individual level and in the ability to affect organizational issues. Developing group intelligence does not happen by accident. It is deliberate, planned and constructed. As a group becomes smarter, the individuals within the group also gain wisdom.

Forming smart groups is essential to what we are attempting in schools today--to educate every child in the nation to be a contributing member of our society, whether that child is born to a pair of math professors at the local university or to children of those who have fled political persecution without any formal education in their native land. If we want school to change, we have to form smart groups. As Margaret Wheatley and Deborah Frieze have written (2006), *"In spite of current ads and slogans, the world doesn't change one person at a time. It changes as networks of relationships form among people who discover they share a common cause and vision of what's possible."*

**How might you change the way you work in a group at your school as a result of these understandings?**

*For more about working effectively in a group, see "Unlocking Group Potential to Improve Schools," by Robert Garmston with Valerie von Frank, Corwin Press, 2012.*