A Vision for the Future of Instruction:
An Instructional Revolution

Some teachers learning Kagan Cooperative Learning structures encounter a surprising apparent paradox: They find something quite easy to be difficult. Resolution of this apparent paradox has profound implications for the future of instruction. After describing and explaining the paradox, we explore how its resolution will reap tremendously important research-based benefits for teachers and their students and impact the future of teaching and learning. In short, the resolution of this paradox reveals a vision for the future of instruction.

Before explaining the apparent paradox, let's peek at the vision that springs from its resolution. When Kagan Cooperative Learning structures become easy and routine, teaching and learning are transformed. Instead of only a few students at a time occasionally engaged, and usually the same subset of high achievers repeatedly engaged, all students are frequently fully engaged. Student boredom is replaced by engaged thinking and emotional excitement. Students come alive during class rather than when the bell rings. Teaching is joyful for teachers; learning is an engaging adventure for students. How do we get there? By implementing simple structures as part of every lesson—structures that once appeared difficult to implement on a regular basis, but which have become second-nature.

Resolving the Apparent Paradox

The power of Kagan Cooperative Learnings stems primarily from four transformations. 1) Students are on the same side, working toward common goals; 2) Students are held accountable for their individual contributions; 3) Students participate equally; and 4) Active engagement is maximized. In this article we focus on the last of these transformations, maximizing active engagement, and an over-learned habit that stands in it's way.

A great deal of the power of Kagan Structures results from implementing the Simultaneity Principle. That is, instead of calling on one student at a time to answer a question posed by the teacher, using Kagan Structures a teacher has many students answer the question at the same time. Let's contrast Kagan structures with the universally used traditional instructional strategy, Teacher Question Student Answer (TQSA). With TQSA a teacher poses a question, students raise their hands to be called on to be chosen to answer, the selected student answers, and then the teacher responds to the answer. In contrast, teachers using a RallyRobin have students in pairs take turns responding to the question. In the same amount of time a teacher using TQSA can call on and respond to three students, each giving one answer, the teacher using RallyRobin has every student in the class give several answers and listen to several answers from their partner! Implementing the Simultaneity Principle maximizes active engagement.

To take another example, let's contrast TQSA with another Kagan Structure, Pair Share. If it takes 30 seconds for each student to verbalize two sentences, in a class of 30 it takes 15 minutes for all students to respond using TQSA. In contrast, using Pair Share, a teacher simply

says, “Turn to your partner and each share two sentences.” With Pair Share all the students in the class have shared their two-sentence answer in a minute rather than 15 minutes!

If maximizing active engagement and learning are the goal, it is clearly better to call on everyone than to call on one or a few. What, then is the apparent paradox? RallyRobin and Pair Share are very simple: Ask a question and have students take turn verbalizing answers. Teachers learning the Kagan Structures know it is better to call on everyone than to call on one, yet some teachers find it very difficult to consistently implement RallyRobin or Pair Share in their classrooms. They continue to fall back on a well-established habit, TQSA.

The resolution of this apparent paradox is that teachers are not struggling to learn how to implement RallyRobin or Pair Share; they are struggling to break a habit. I have observed teaching and learning in over 40 countries and can say with confidence that world-wide TQSA is the most common way teachers structure having students respond to teacher posed questions. TQSA is a habit that teachers began to acquire not when then they go through teacher training, but rather when they enter school! How is that possible? Two discoveries in brain science explain why TQSA is so deeply entrenched in the repertoire of most teachers. The discoveries are *mirror neurons* and *myelination*. Mirror neurons: Every time we observe someone doing something, via mirror neurons our brains fire as if we were doing that thing.[1] Myelination: Each time a neural track fires it lays down a fatty substance called myelin forming an insulating myelin sheath, allowing the neural track to fire dramatically more rapidly and efficiently, in the same way insulation on an electrical cord ensures the electrical current reaches its destination without delay or decay. The more times a neural track is fired, the more the myelin sheath is built up. A highly myelinated neural track can fire up to 275 miles per hour compared to an unmyelinated track that fires at only 2 miles an hour![2] Because we observed our teachers using TQSA year after year as we progressed through our years of education, our brains repeatedly fired that sequence, creating a highly myelinated neural track. When we first became teachers, we used TQSA without even thinking about it. We had observed TQSA in our classrooms so many times it was a stable habit we had acquired through mirror neurons and myelination. Most all of us began teaching the way we were taught.

Because TQSA was a firmly established habit by the time we began teaching, and highly myelinated neural tracks are very difficult to change, even though many of the Kagan Structures are themselves quite simple, for many implementing the Kagan Structures on a consistent basis is at first quite difficult. Implementing something quite simple is difficult if it requires overcoming an established procedure. It involves rewiring the brain. Knowledge that it is better to call on everyone rather than call on one student at a time is not sufficient to break the TQSA habit. Knowledge that a habit is non-adaptive doesn’t break the habit. Smokers know smoking is bad for their lungs, but they continue smoking. Drinkers know drinking is bad for their kidneys but they continue drinking. The way to break a habit is to myelinate an alternative neural tack more highly. That is, to practice a substitute behavior so many times that it replaces the bad habit. Translating this into implementing Kagan Structures on a regular basis, breaking the TQSA habit, means using Kagan Structures over and over until they becomes the dominant habits.

Why Do the Work of Breaking the TQSA Habit?

There are four extremely important reasons to do the hard work of breaking the TQSA habit. When we make it a habit to use Kagan Structures to call on many students at once, we reap four powerful benefits: 1) We dramatically increase the most important research-based positive educational outcomes; 2) We radically transform our teaching and the culture of our classrooms; 3) We impact in a profound way on the social orientation of our students; and 4) We help the next generation of teachers find teaching more rewarding and successful.

1. Increasing Research-Based Positive Outcomes

By implementing cooperative learning on a regular basis, we align instruction with the most important research-based positive educational outcomes. Cooperative learning is among, if not the single most well-researched instructional methods. And the positive outcomes of cooperative learning address the most important educational outcomes including, but not limited to, A) increased achievement, B) reduced achievement gaps, C) improved social skills and social relations, D) decreased discipline problems; E) improved race relations; and F) increase student satisfaction and liking for school and learning. A comprehensive review of these positive outcomes is beyond the scope of this article. Here I spotlight a few key findings in each area.

A. Increasing Achievement

An independent research team at the State University of New York (SUNY) published a series of research studies examining the academic achievement of students when TQSA vs. Kagan Structures were implemented.[3] Results indicated Kagan Structures produced very strong improvements in achievement across all studies. The studies include students of different grade levels and in different academic content areas. A summary of the results of these studies revealed a remarkable .92 effect size that translates into a 32-percentile gain! This is an effect size substantially larger than the effect size of .59 in a meta-analysis of a comprehensive range of cooperative learning studies.[4]

Implementing just one Kagan Structure, Numbered Heads Together, in substitution for TSQA produced dramatic gains for struggling learners in high school chemistry.[5] Students in the TQSA class were performing very poorly: their baseline on weekly quizzes was below passing: 53%. When the teacher switched to Numbered Heads Together to review comprable content, achievement jumped to a weekly average of 75%!

Another example of increased achievement is provided by the algebra teachers at LeHigh Senior High School. Those teachers took the 5-day Kagan Cooperative Learning workshop and implemented the structures in their Algebra classes. In their words,

> "Algebra classrooms transformed from classes that reluctant math students dreaded, to classes they looked forward to attending. Students became learners and teachers among their peers. By the end of the year, we improved our algebra scores by 17%. This brought us from the bottom of our district performance to the top of the list."[6]

Research studies document significant achievement gains resulting from the implementation of Kagan Structures at almost every grade level, in many content areas, and with a range of populations. For examples, gains have been documented for students with disabilities;[7] adults;[8] and college students.[9] The structures result in significant gains across grade levels and academic content. For examples, research studies show significant gains in 4th Grade Writing;[10] 5th Grade Math;[11] 6th Grade Social Studies;[12] 6th Grade Science;[13] 9th Grade Science;[14] High School Chemistry;[15] High School Journalism;[16] and High School Algebra.[17] Further, several research studies reveal Kagan Structures produce substantial multi-year gains school wide.[18]

B. Reducing Achievement Gaps

There are two related important types of achievement gaps: The gap between high and low achievers and the gap between majority and racial minority students. Kagan Structures dramatically reduce both types of achievement gaps.

High-Low Achievement Gap. To take one example of the power of Kagan Structures to reduce the achievement gap between high and low achievers, consider what happened when Numbered Heads Together was substituted for TQSA:

> It is significant that no student had a failing average under the Numbered Heads Together condition, and six pupils had maintained averages above 90%. In contrast, when TSQA was used, six students had failing averages and only one child maintained an average exceeding 90%.[19]

It is critical to note that the achievement gap is reduced not by pulling the high achievers down, but by lifting the low achievers up. When the Kagan Structures are used, it is a tide that lifts all boats, but especially the boats that are sinking lowest.

Race Achievement Gap. A Kagan School was opened in the poorest area of a large district which had substantial Black-White achievement gaps. Black students were scoring 47% lower than White students in math and 43% lower in reading. After only one year using Kagan Structures, the racial achievement gaps were reduced by about to half of district averages (25% in math; 27% in reading).[20] As in prior studies, overall achievement was dramatically increased by implementation of the Kagan Structures: District percent proficient in Math: 60%; in Reading 56%. Kagan School percent proficient in Math: 81%; in Reading: 79%. Implementation of Kagan Structures drastically reduced the race achievement gap compared to district averages.

C. Improving Social Skills and Social Relations

Under the direction of principal Michael Winters, Madison Camelview Elementary School implemented Kagan Structures school wide. In principal Winter's words:

> The implementation of Kagan had a dramatically positive impact on student behavior. With full Kagan implementation, negative behaviors decreased while positive referrals skyrocketed. Students received discipline referrals for typical behaviors disrupting the educational environment and/or process. Students earned positive referrals for positive behaviors. Here are some behaviors for which students typically earned a positive referral:
>
> - Finding money on campus and turning it in
> - Helping a friend who dropped his/her books

- Picking up trash without being asked
- Helping to clean the cafeteria without being asked
- Holding a door for a teacher whose hands were full
- Being an excellent coach to a partner or team

Within three years, positive referrals more than tripled (from 75 to 280), and discipline referrals were reduced to a fourth of what they were (from 200 to 48)![21]

Stacey Magnesio conducted a study of the impact of Kagan Structures on positive behaviors in her 4th-grade class.[22] Stacey used 5-minute time sample observations of selected students, recording incidents of Listening Attentively, Praising Others, Respecting Differences, Staying on Task, and Taking Turns. The frequency of positive behaviors increased dramatically Week 1 Positive behaviors averaged about 3 per student. By week 3 they averaged around 7 per student. By Week 6 students averaged 12 positive behaviors.
Mrs. Magnesio noted

> This made a powerful impact on my classroom. Not only were the students getting better at working together as the weeks went by, I was able to spend more time teaching and less time lecturing my students about being team players and working together.

Progressive Improvement of Positive Behaviors. Positive behaviors become the norm as Kagan Structures are implemented school wide. This was revealed at Cheatham Elementary School. The school plotted the number of positive referrals for unrequested positive behaviors from 2007 to 2011. Following the implementation of Kagan Structures school-wide, positive referrals increased each year and had skyrocketed from only 46 in the 2007-08 school year to 475 three years later in 2010-11—more than a ten times increase![23]

The positive behavior of students was noticeable to outside visitors:

> We would also hear a great deal of praise from outside visitors. Literally every outside visitor, including district office staff, would comment on how polite and well-mannered our students were. At first this surprised me because dealing with the behavior issues on a day-to-day basis I didn't always see that, but they did. The positive behavior became the expectation and the norm.[24]

D. Decreasing Discipline Problems

The dramatic impact of Kagan Structures in reducing discipline referrals is illustrated by what happened at Mills Hill Primary School in the United Kingdom (Lee, 2009). When Kagan Structures were introduced, the average number of discipline referrals per class each term was cut about in half. For several years prior to implementing Kagan Structures, beginning in 2002, the school had recorded the number of discipline referrals to the headmaster (equivalent to the principal in U.S. schools). The number of referrals prior to the introduction of Kagan Structures hovered between 25 and 30 per class each term. Headmaster Darran Lee indicated this was "a significant problem." When Kagan Structures were introduced, the number of referrals dropped to about half pre-Kagan levels and maintained that much lower average for years. Darran Lee stated that within months Kagan Structures were having "a significant impact in reducing the number of behavior incidents across school."

Decrease in High School Discipline Referrals. LeHigh Senior High documented similar dramatic decreases in disruptive behavior following the implementation of Kagan Structures (Corey, 2017). At Lehigh, average student discipline referrals per class decreased 58% in one year following the implementation of Kagan Structures![25]

Decrease in Elementary Discipline Problems. In the study previousl cited, Stacey Magnesio also conducted a study of the impact of Kagan Structures on disruptive behaviors in her 4th-grade class.[26] She had been having serious problems with disruptive behavior and decided to institute three Kagan Structures: RoundRobin, RallyCoach, and Quiz-Quiz-Trade. Ms. Magnesio plotted the number of disruptive behaviors per student each week using the ABCD Tally Chart.[27] The ABCD Tally Chart records Aggression, Breaking the Rules, Confrontations, and Disengagement for each student. Frequency of disruptive behaviors declined week after week following introduction of Kagan Structures: Week 1: 83; Week 2: 63; Week 3: 51; Week 4: 32; Week 5: 19; Week 6: 7.

Progressive Decline of Discipline Problems. As Kagan Structures become part of the culture of a school, declines in disruptive behavior are progressive year after year. At Sage Elementary School, following the launch of Kagan Structures in the 2009-2010 school year, discipline referrals dropped each year. Discipline referrals per 100 students dropped across the four years: Year 1: 60.3; Year 2: 51.3; Year 3: 37.5; and Year 4: 27.5.[28]

Why Cooperative Learning Structures Decrease Discipline Problems

The reduction of discipline problems when cooperative learning is partially explained by a better match between instructional strategies and student needs. In the traditional, "call on one," TQSA format, students sit passively and are not allowed to talk except when called upon. Calling on one student at a time demands most students be quiet and passive most of the time. But students want to talk, move, and be active. Those students who persist in talking and moving in the traditional classroom are defined as discipline problems. When Kagan Structures are implemented, students talk and move on a regular basis, so they do not have to be disruptive to get their needs met. The structures align with, rather than prevent students from meeting their basic needs. That is one of the reasons why students are more satisfied with class when Kagan Structures are used, as we will see below.

A second important reason why discipline problems are reduced when cooperative learning is implemented is that students are encouraging, helping, tutoring, and praising their teammates and classmates. Students engage in teambuilding and classbuilding and learn to know and care for each other. Students acquire a kind and caring orientation toward their fellow classmates. Interpersonal and racial conflicts are drastically reduced when students know and like each other.

E. Improving Race Relations

To test the impact of cooperative learning structures on race relations, thirty-five student teachers were randomly assigned to teach using either cooperative learning structures or

traditional instructional strategies for six weeks. The student teachers taught approximately 900 students. The students were 66% White, 20% Mexican American, and 13% Black, proportionally divided in the traditional and cooperative learning classes.[29]

The Interpersonal Relations Assessment Technique (IRAT) was administered to all 900 students to assess the impact of cooperative learning on race relations. The IRAT has been validated on thousands of students; it is a unidimensional scale with high coefficients of reproducibility and scalability.[30] The IRAT allows each student to indicate their willingness to engage in different intimacy behaviors with each of their classmates by writing a 1 or 0 under each intimacy item for each classmate. Five intimacy items were used, as follows from low to high intimacy:

Willingness to:

- Sit next to him or her in class
- Loan him or her a pencil or book in class
- Invite him or her to your home
- Be his or her best friend
- Tell secrets to him or her

This large-scale study revealed cooperative learning results in dramatically improved race relations compared to the traditional TQSA classroom.

Race Relations in TQSA Classrooms. In classrooms using TQSA, students at grades 2-4 were color-blind in their friendship choices. They chose classmates of their own race only 5% more often than classmates of other races, a non-significant difference. In contrast, by grades 5-6, students chose friendships in part based on the race of the other: they chose their own-race classmates 26% more often than classmates of other races, a highly significant difference. Further, the older students almost exclusively reserved the highest-level intimacy choices for students of their own race. In short, TQSA led to self-segregation along race lines.

Race Relations in Cooperative Learning Classrooms. In the classrooms using cooperative learning, the picture was quite different. Race was not a significant predictor of friendship choices at both the younger and older grades. That students choose their friendships without significant regard to race of the other, indicates cooperative learning led to far greater integration of students along race lines. This difference in self-segregation among students in the cooperative vs. TQSA classrooms was highly significant statistically, $p < .0001$. Race was not a basis for intimacy choices in cooperative learning classrooms at any age.

Results demonstrated that in only six weeks, race-relations were radically improved when cooperative learning structures were implemented. In classrooms taught with TQSA, with age students increasingly self-segregated along race lines; in classrooms taught with cooperative learning methods, self-segregation did not occur: friendship choices remained integrated.

Of note, there were no special race relations or anti-racism programs taught in the cooperative learning classrooms. The near eradication of racial discrimination in intimacy choices was the

result of students working cooperatively in mixed-race teams. Working together in cooperative learning structures virtually eliminated race-based intimacy choices. When asked who they want to sit next to or invite home, students who had worked together in cooperative learning teams and in classrooms with cooperative learning decided based on knowing their classmates as individuals, not just as members of a racial group. In essence, cooperative learning makes possible the vision of Martin Luther King, Jr., who dreamed of a time when people would relate to each other by the quality of their character not the color of their skin. The ability of cooperative learning to eliminate self-segregation of students along race lines has extremely important implications for the future of race relations.

F. Increasing Student Satisfaction

Students like cooperative learning structures more than TQSA. After experiencing the Kagan structure Numbered Heads Together and TQSA, over 80% of the students agreed that the Kagan structure,

- Better helped them learn
- Was fair for all
- Helped them get along better with others
- Should be used in other classes, and
- Other students thought them smarter![31]

To test preferences for instructional strategies, researchers adapted the Kagan structure Spend-A-Buck to assess student satisfaction among sixth-grade students in a science class. Students were given play money and were asked to spend it on which instructional strategy they preferred, TSQA vs. Numbered Heads Together. Results indicated very strong preference for the Kagan Structure: Students spent an average of 79 cents on TSQA and an average of $18.71 on the Kagan Structure—a ratio of 23.7 to 1 in favor of the Kagan Structure![32]

Student attitudes toward using Kagan Structures, Danielle Gradone, an elementary teacher, assessed the impact of using a wide range of Kagan Structures in every lesson. After eight weeks of using the structures, she administered a questionnaire to her students. Students responded very favorably toward Kagan Structures. Comparing combined Strongly Agree and Agree responses with combined Strongly Disagree and Disagree responses, results were as follows:[33]

Statement	Agree	Disagree
Structures are fun.	20	0
Structures make topics more interesting.	19	1
Structures help me communicate.	18	2
Structures help me feel comfortable with my peers and teacher.	16	4
Structures help me participate more in class.	18	2
Percent of Total	**91%**	**9%**

These studies reveal that a very high percent of students like cooperative learning structures and believe the structures help them learn and improve peer relations.

In Sum, Kagan Structures Increase the Most Important Educational Outcomes

The research-based outcomes of using Kagan Structures are remarkable because they address the most pressing issues in education and society. The success of any country depends on ability to increase achievement for all students and reduce achievement disparities among groups. Improving race relations is one of, if not the single most important issue facing our country today. By decreasing discipline problems, teachers are freer to teach. When students are more satisfied with school and enjoy learning, they are more likely to become life-long learners, a quality essential for success given the accelerating change rate. In a fast-changing job and technological world, students will be successful to the extent they are life-long learners.

2. Radically Transforming Our Teaching

At first, as we have noted, for some it is difficult to break the TQSA habit. Habits are powerful. Anything we do repeatedly, we can do with less effort. With enough repetition a neural track becomes so fully myelinated that we can perform that action without thinking. That is how we drive to work and arrive realizing we were thinking about something else during most of the drive. The car drove itself. The brain is smart. If I am to do this over and over, let's myelinate those tracks so well they can be run off without thought. As we spelled out in the intro to this chapter, that is why when we first became teachers, we did not have to think about the steps of TQSA, we had seen it done so often (and via mirror neurons, had practiced it so often) that we could do it without thinking.

So, breaking the TQSA habit can be difficult, as is overcoming any habit. But once we begin to call on everyone rather than just one, our class is transformed. Students, as the research documents, are achieving more, liking class more, disrupting less, and acquiring social skills. Students feel everyone's input is valued; everyone is included. The culture of the classroom is transformed: students experienced themselves as on the same side, encouraging, helping and tutoring each other. Because the structures become a habit, as teachers we no longer think about the steps of the structures, we are free to think about what we want to teach and enjoy the positive interactions among our students. Teaching becomes a dream.

3. Impacting Social Orientation

Although the positive research-based outcomes of Kagan Cooperative Learning structures are extraordinarily important, there is one outcome of Kagan Cooperative Learning that in my mind is even more important. To support this outcome, I have at this point only my observations and those of the educators who have observed what happens when Kagan Cooperative Learning structures are used on a regular basis. I am referring to a transformation in social orientation. There are only three primary ways we can orient toward others: Against, Alone, and With. How we structure the interaction in our classrooms fosters different social orientations.

Fostering the "Against" Social Orientation. In the TQSA format, a teacher asks a question of the class and those students who want to answer raise their hands, hoping to be

called upon. In many classrooms, the competition for the teacher's attention is obvious as students call out "me, me, me," or wave their hands. One student is called upon and the others lower their hands, often making a sound of disappointment. If the student who was called upon begins to falter, not coming up with the right answer, the hands of the other students shoot up: "I know, I know." Students are excited when a classmate fails as it gives them another chance to shine. Inadvertently, the structure sets students against each other: the failure of one increases the probability of success of another. This occurs also when graded test and quizzes are passed back to students. There is a social comparison process as students compare grades, each hoping to have done better than their classmates. Students are pleased if a classmate has not done as well as they have. Students repeatedly placed in these situations do not hope for the success of their classmates; they adopt an Against social orientation, hoping to be better than others.

What is the relation between an Against social orientation and a competitive attitude? There are two distinct types of competitiveness. Healthy competitiveness is a drive to be the best one can be—a drive for excellence. Unhealthy competitiveness is the drive to beat others. Healthy competitiveness strives to enhance one's own performance; unhealthy competitiveness includes the desire to diminish the performance of the other. With an unhealthy competitive attitude, a tennis player is pleased when their opponent sprains an ankle and loses the match. It is an opportunity to beat the other. In contrast, with a healthy competitive attitude, a tennis player is sad when their opponent sprains an ankle because it deprives the player from a good match and an opportunity to hone their skills. A individuals with an Against social orientation take pleasure in the failures of others. A healthy competitive attitude is not associated with an Against Social Orientation. We can encourage a healthy competitiveness while discouraging an Against Social Orientation.

Fostering the "Alone" Social Orientation. Much of traditional instruction is characterized by working alone. Students work alone to practice math problems, write a story or essay, read passages and respond to chapter review questions, study for a test. During solo worksheet work, talking and sharing is defined as cheating. Whether explicitly stated or not, students learn to "worry about yourself, not about your neighbor." The traditional way student desks are arranged in the classroom, in rows and nailed down, causes students to orient to the back of the person in front of them. This physical arrangement conveys the message that students are to do their own work, not communicating with others. Structuring learning so students work alone and focus exclusively on their own outcomes fosters an Alone orientation.

Fostering the "With" Social Orientation. In Kagan Cooperative Learning students work together to master their learning and produce products. Students work in pairs and teams encouraging, tutoring, helping each other. They coordinate their efforts. The success of one is seen as contributing to the success of the team. Through cooperative learning, students discover no one of us is as smart as all of us. Students learn the power of cooperating to achieve. Students learn to appreciate the unique gifts and contributions of others, including those of different races, cultures, and socio-economic backgrounds. Interdependence teaches we need each other. Cooperative learning foster a With Social Orientation.

Why Social Orientation is So Important?
If year after year throughout their schooling students are in situations that foster an Against, Alone, or With social orientation, they eventually leave school influenced by the social orientation fostered in their classrooms. As teachers we cannot stay out of the business of fostering a type of social orientation in our students—how we structure learning in our classrooms on a daily basis impacts the social orientation of our youth.

Why is social orientation so important? Imagine a student who has just left the schooling system and the student encounters a stranger who for some reason is struggling. If the student has an Against social orientation, the student is likely to have a secret smile, think and feel, "Boy I am glad not to be him. I am better than he is." If the student has Alone social orientation, the student walks on, thinking, "He is not my problem. I need to take care of me." If the student has a With Social Orientation, the student turns to the stranger and asks, "How can I help you?"

Now multiply that interaction by all the interactions that students will have over a lifetime with strangers, friends, co-workers, and even family. Think also about how students will think about international relations if they have acquired an Against, Alone, or With Social Orientation. With the simple cooperative learning structures used on a regular basis we transform social orientation and make it a better, kinder, more peaceful world.

4. Helping the Next Generation of Teachers

An additional benefit of breaking the TQSA habit is that it impacts in a powerful way on future teachers, improving their teaching, making it much easier for them to obtain excellence. New teachers begin by teaching the way they were taught. Through mirror neurons they imprint on the methods of their own teachers creating well-practiced habits even before they step in front of a classroom.

When teachers today use Kagan Cooperative Learning structures as part of every lesson, their students are observing a different way to teach. They are imprinting a different model of what teaching is. To the extent teachers today use the Kagan Structures instead of TQSA, the subset of students in their classrooms who later will to decide to become teachers, will enter the profession having (via mirror neurons) practiced a different way to teach. With little effort they will use structures as part of every lesson! As teachers today we do the hard work of breaking the TQSA habit, so the teachers of tomorrow won't have to!

There is evidence that this vision will materialize. Teachers who regularly use the Kagan Structures in their classrooms report that it has transformed how their students do presentations. Without being told to do so, while presenting their projects to the class, teams incorporate RallyRobin, Timed Pair Share, and other structures to generate engagement among classmates! It is natural for them to call on everyone! Teachers of the future won't dream of using TQSA; they will teach the way they were taught.

The implication is that while we do the hard work of breaking the TQSA habit, we are doing much more than improving our instruction, reaping the benefits of research-proven positive outcomes, and making teaching and learning more joyful in our classrooms. Through modeling, we are improving the instruction of future teachers.

The Vison

In sum, we at Kagan have a vision. The vision is of a time we have completed an instructional revolution. We look forward to a time when calling on one appears strange—something from the past. Why, after all, would we want to call on one and increase the achievement gap, when with little effort we can call on everyone, reducing the achievement gap, improving social skills and relations, creating frequent engagement of all students, transforming social orientation, and increasing love of teaching and learning?

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