Why Call on Just One When We Can Call on Everyone?

This year, when I finished my trainings in Morocco, I took count. Morocco is the thirtieth country in which I have worked with educators. My focus is sharing instructional strategies that engage all learners. What amazes me is that in every country, the most common instructional strategies engage some learners while leaving a large subset of students disengaged. It is an enormous waste of potential. Inadvertently, teachers worldwide call on high achieving students to respond while allowing the low achieving students to hide, to slip through the cracks. This inequitable engagement creates a progressive achievement gap: Each year, low achieving students fall further behind. In the early years of schooling the low achieving students disengage within class; in the later years, within-class dropout becomes school dropout. If we analyse the dominant instructional strategies used in classrooms, the drop out phenomenon is no mystery. Because teachers are teaching to and engaging only the high achieving students, it is predictable that low achieving students become bored, disengaged, discipline problems, and drop-outs.

This dismal picture can be remedied rather easily. Teachers can abandon traditional, inequitable instructional strategies, adopting instead simple, proven strategies that engage all learners equally.

Let's ask ourselves four simple questions:

1. *Do we want to teach students to hope for and delight in the failure of their peers?*
2. *Are we satisfied creating classrooms in which students can do nothing, hide?*
3. *Do we want to call most on those who least need the practice and call least on those who most need the practice?*
4. *When we ask a question of our class, do we prefer to call on one student to respond when we could call on all students to respond?*

The answer to each of these questions is clearly "No!" Yet in every country I visit, teachers overwhelmingly favour instructional strategies that predictably set students against each other and produce disengagement and failure among low achieving students. In every country, after asking a question, teachers choose among the high achieving students to respond, leaving the low achieving students to daydream. In the same amount of time, if those teachers adopted simple engagement strategies, they could have every student respond. Why engage one student when just as easily we could engage all students? Neuroscience reveals a fundamental principle of brain development: You use it or lose it. Dendrite connections that are not used are pruned. By failing to engage the brains of large segments of our student populations, rather than promoting brain development, we are actually allowing brain atrophy! Further, without intending and without realizing it, teachers worldwide are structuring the interaction in their classrooms so students actually hope for and take delight in the failure of their peers.

What creates anguish in me is that the remedy is so simple. It is within the grasp of any teacher to transform their classroom so:

1. *Students take delight in and help create the success of others.*
2. *No student can hide.*
3. *All students participate equally.*
4. *Not one, but all students respond to each question.*

Traditional Strategies Vs. Engagement Strategies

Let's contrast two teachers, one that uses traditional instructional strategies and one that uses structures for engagement. Structures for engagement are instructional strategies carefully designed to maximize engagement among all students. Here they are simply called engagement strategies. We will examine these two teachers in three scenarios as they attempt to reach different educational objectives using traditional vs. engagement strategies.

Objective 1: Oral Review

Regardless of grade level, often we have students review content that has been covered. We know from brain research that neurons that fire together, wire together. We know the more times a student reviews the

content, the stronger the dendrite connections become and the greater becomes the probability of those neurons firing together in the future, increasing the probability of recall. Recall is improved dramatically by oral review: students remember far better that which they say than that which they are told.

The content for oral review is as varied as is the range of our curriculum. Young children may be naming letters; middle grade students may be asked to name rainforest animals; older students may be naming prime numbers. Young students may be recalling events in a story; older students naming events from the history chapter or facts from a science article.

Oral review may include more than simple recall; it may involve different types of thinking as when students are asked to name possible causes or consequences of an event, alternative hypotheses to explain a phenomena, or things we can do to protect and preserve our environment.

Traditional Strategy: *Teacher Question; Student Answer*

The most common instructional strategy used for oral review is **Teacher Question; Student Answer**. The teacher asks a question such as, "*Who can name a rainforest animal?*" Students wishing to respond raise their hands. The teacher calls on one. That student answers. The teacher then responds to the answer, praising or correcting. The teacher may then call on another student to respond, repeating the sequence.

Structuring the interaction in the classroom this way has predictable, negative consequences:

1. The high achieving students raise their hands to be called on while the low achieving students avert the teacher's eyes and hide.
2. The teacher thus ends up calling most on those who least need the practice and least on those who most need the practice.
3. Because a number of the high achieving students are vying to be called on, and only one receives the opportunity to respond, a number of students are disappointed when the teacher calls on one. Students register their disappointment with dejected sighs as they lower their hands.
4. If a student misses the question, the others who wanted to be called on are happy; only if the chosen student misses can they shine, so they begin to hope for and delight in the failure of their peers.
5. If a student always has the right answer that student gets labelled, "nerd," "teacher's pet," "brainiac," or "brown-noser." Someone who achieves too high makes others look bad by comparison. The labels are peer pressure to conform to the norm of mediocrity, not to make others look bad by comparison. To enforce this norm, the class does what any group does when an individual violates the norms of the group — they punish offenders. The nerd labels are a way of communicating and enforcing the norm: "If you continue to make us look bad by comparison, you will pay the penalty of being ostracized." Given the choice of being the best they can be or being liked, some high achievers are afraid to come out, to be their best. (For articles on this topic, web search "Nerd penalty.")
6. The meta-communication in the class is that some students are smart and others are not, that some students have something of value to contribute whereas others do not. This lowers the self-esteem and identity of lower achieving students: *"I am not one of the smart ones."*
7. A great many of the low achieving or less motivated students are "off task," that is, while the high achieving students and teacher play question and answer, the minds of the other students are wandering.
8. Teachers using **Teacher Question; Student Answer** hear only from the high achieving students. They are taking an unrepresentative sample of the class. This creates for the

teacher an illusion that the class understands the content better than they actually do. This is inauthentic assessment.

9. The most important negative consequence of the traditional structure is lack of engagement among many students: Only a few students have the opportunity to respond. The teacher calls on and responds to one student at a time, leaving the other students semi- or fully disengaged. Because the teacher talks twice for each time a student talks (first asking the question and then responding to the answer), the teacher talks about 60% of the time. Thus in six minutes of **Teacher Question; Student Answer**, the teacher has time to call on no more than three students, each giving one answer. How do the other students spend their time?
   —Looking at the back of the head of the student who is answering the teacher!

Engagement Strategy: *RallyRobin*

One engagement strategy that is an alternative to **Teacher Question; Student Answer** is **RallyRobin**. In RallyRobin, students are in pairs. They take turns stating answers. For example, given the task of stating rainforest animals, in each pair Student A would name one rainforest animal; Student B would name a second animal; Student A would name a third, and so on. For higher level review, students might take turns stating possible alternative hypotheses to explain a character's behaviour.
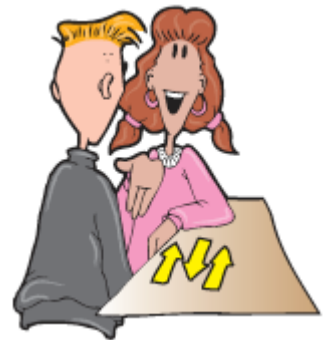
Structuring the interaction in the classroom this way has predictable, positive consequences:

1. Most importantly, in the same amount of time that the teacher using **Teacher Question; Student Answer** can call on and respond to only three students in the class, the teacher using **RallyRobin** can have every student respond.
2. Students responding in **Teacher Question; Student Answer** state one answer each. Students responding in **RallyRobin** verbalize many answers.
3. When **Teacher Question; Student Answer** is used, students think of one answer and stop thinking; when **RallyRobin** is used after thinking of one response, students are pushed to think of another and another, promoting thinking skills.
4. Students learn to take turns.
5. Because students cannot repeat the answer of their partner, the structure demands listening skills.
6. Students are fully engaged in face-to-face interaction, not isolated from each other, talking only to the teacher.
7. A higher percentage of students are "on task." After their partner gives a response, their partner waits for them to give a response. The structure requires full participation of all students so no one can hide.
8. High- and Low-Achieving students participate equally.
9. Walking around and listening to the responses of students, the teacher hears from high, middle, and low achieving students, taking a representative sample of the class. There is more authentic assessment.
10. The meta-communication in the class is that all students have something of value to contribute.
11. Equal participation creates equal status.
12. There is no competition for teacher's attention and no disappointment when one student is called on.
13. Students are not hoping for the failure of their peers; they actually appreciate the contributions of their peers — peer norms shift toward achievement. Students feel they are on the same side.
14. The full engagement of the lower achieving students decreases the achievement gap between low and high achieving students, in contrast to the increased achievement gap created by the high percent of low achieving students who do not participate during **Teacher Question; Student Answer.**

Objective 2: Elaborated Thinking

At all grade levels teachers sometimes want students to elaborate their thinking on a topic. For examples, younger students may be asked express and defend their opinion of a character in a story; middle grade students might be asked to evaluate the pros and cons of a law and/or and how they might modify the law to improve it; older students might be asked how they would go about testing a hypothesis or solving the problem of world hunger.

Traditional Strategy: *Teacher Question; Student Answer*

Teachers not trained in engagement strategies most often use the same **Teacher Question; Student Answer** approach for elaborated thinking as they do for oral review. They simply call on one student at a time to verbalize their thinking.

Structuring the interaction in the classroom this way has the same predictable, negative consequences as when **Teacher Question; Student Answer** is used for oral review: Only a few students have the opportunity to respond, leaving others disengaged. The teacher gets a biased sample of the class, hearing only from the high achievers. In addition, if a long, elaborated response is called for, the teacher usually can permit only one or two students to respond, knowing that during long responses from one student the rest of the class becomes bored and restless. This puts pressure on the teacher to curtail very long responses, short circuiting the very goal of elaborated thinking.

Engagement Strategy: *Timed Pair Share*

An excellent engagement strategy for elaborated thinking is **Timed Pair Share.** Students are in pairs. In response to the teacher's question, first Student A responds for a predetermined amount of time, say one minute. Student B is asked to appreciate Student A's response. Then Student B responds to the question. Finally, Student A appreciates Student B's response.

Structuring the interaction in the classroom this way has predictable, positive consequences:

1. In the same amount of time that a teacher using **Teacher Question; Student Answer** can call on and respond to two or three students, a teacher using **Timed Pair Share** can have every student respond.
2. Because not just the high achieving students are responding, all students are engaged, with positive consequences for thinking skills, self-esteem, identity, and achievement.
3. Students acquire listening skills.
4. Students learn to appreciate and compliment the contributions of others.
5. Because all students are engaged, the teacher can allow long, elaborated responses without running the risk of boring the rest of the class.

Objective 3: Practicing a Skill

Often we use direct instruction to demonstrate a skill. Following direct instruction, we want students to practice the skill that has been demonstrated. For example, we might want younger students to practice punctuation, middle level students to practice graphing coordinates, and older students to practice balancing chemical equations.

Traditional Strategy: *Independent Practice*

The most common strategy to have students practice a skill following direct instruction is **Independent Practice**, usually individual worksheet work. The teacher gives each student an individual worksheet, has the student work alone

either in class or as homework, and then students pass in their worksheets for teacher correction and grading.

Structuring the interaction in the classroom this way has predictable, negative consequences:

1. When the worksheets are passed out in class, some students who did not understand the direct instruction are too embarrassed to ask the teacher or classmates for help and struggle with the worksheet without someone to help them.
2. When the independent practice is to be done as homework, some students do not discover they do not fully understand the skill until they attempt the homework problems. They have no one to turn to, become frustrated, and dislike the content and/or feel bad about their lack of ability.
3. For some students working alone is boring or difficult. The minds of others easily drift. All of these students often have their pencils on their worksheet, but their minds are somewhere else.
4. Some students who did not understand the direct instruction choose to rationalize not doing the work, saying, "This work is dumb." They save face, preferring to say "This work is dumb," rather than "I wish I understood, but don't."
5. Some students, knowing they have performed poorly on the homework, are too embarrassed to turn it in.
6. Some students think they know the skill, but don't so they practice wrong. Wrong practice is more harmful than no practice, strengthening dendrite connections that become likely to fire again. Unlearning an incorrect response is more difficult than simply learning a new response.
7. Some students who think they know the skill, turn in their worksheet expecting a good grade, only to receive a bad grade and have their expectations dashed because they have practiced wrong.
8. Some students know the skill well, so they finish in class substantially before other students. They may become something of a management problem: *"What do I do now."* Other students seeing they are slower feel bad about themselves.
9. When students get their papers back, they glance at their papers for a grade and then engage in a competitive social comparison process looking around to see who they beat and who beat them. The result: lower self-esteem for students with poorer grades.
10. When students are asked why they did the worksheet, the most common response is *"For a grade."* Learning is viewed as merely the means; the bottom line is getting a grade.

Engagement Strategy: *RallyCoach*

One of several engagement strategies is **RallyCoach**. Students work in pairs with one worksheet and one pencil for each pair. Student A does the first problem, verbalizing their thinking. Student B watches, listens, and coaches if necessary. The coach offers help when necessary and compliments their partner when the problem is finished correctly. Then students switch roles. Students continue switching roles to complete the additional problems on the worksheet.

Structuring the interaction in the classroom this way has predictable, positive consequences:

1. If students need help, they get immediate coaching.
2. Students can't practice wrong.
3. Anxiety is lowered as students know they can receive help if they need it.
4. Often students can use "kid language" to explain a procedure, communicating better than the teacher.
5. The work on mirror neurons demonstrates that modeling is a very powerful way to learn. In **RallyCoach** every second problem is modeled for students.
6. Students get more frequent feedback correction opportunities, and reinforcement — after every problem, not every worksheet.

7. Students receive immediate correction and reinforcement rather than delayed feedback only after the teacher has time to correct the papers.
8. Students feel supportive of each other; they feel themselves to be part of a community of learners
9. **RallyCoach** allows differentiation: pairs can be working on different content.
10. Students learn social skills including: taking turns, listening, coaching, and complimenting
11. Students do not feel they are working for a grade and/or to beat each other; they feel they are working to learn and to help each other.
12. When students are asked why they are doing **RallyCoach**, the most common responses are *"To learn,"* and *"To help each other."* Learning is not merely the means to a grade, it is the bottom line.

Why call on only one?

As we allow volunteer participation in our classrooms and call on one student at a time to respond, we necessarily call most on the high achieving students. This inequitable participation increases the achievement gap. We increase the achievement gap also when we hand out the worksheets for students to practice a new skill without offering a safety net for those who did not fully understand the direct instruction. Again the high achievers get the best practice while the low achievers struggle or become disengaged. Widely accepted instructional strategies are unacceptable!

The three engagement strategies described here, **RallyRobin**, **Timed Pair Share**, and **RallyCoach** are but three of over 200 "Kagan Structures for Engagement." The steps of these structures, their research support, as well as their theoretical rationale are spelled out elsewhere[1]. A teacher need only use several of the structures to radically transform a classroom: A large subset of disengaged students become part of a community of learners, increasing overall achievement and reducing the achievement gap between high and low achievers.

Admittedly, unlearning behaviour is more difficult than learning a new behaviour. Because of our mirror neurons, all of us who have become teachers have had years of training in the traditional strategies before we ever became teachers. Year after year we observed our own teachers calling on one and we just adopted that approach when we became teachers. We use the "Call on One," and "Individual Worksheet Work" approaches because we tend to teach the way we were taught. Here we are calling for a revolution: An Instructional Revolution[2]. It takes courage to leave the beaten path and set off on a path less travelled. But the rewards are tremendous. Teachers adopting the engagement strategies often state that the new way of teaching not only produces radically improved achievement and decreased discipline problems, but that it has changed their attitude toward teaching: *"I used to look forward to retirement, and now I look forward to each day of teaching."* Improved achievement among students when the engagement strategies are used has been summarized in published research studies and on the Web[3]. The decreased incidence of discipline problems also has been documented[4].

From my own perspective, the most important outcome of using these powerful structures for engagement is to change social orientation. Students learn in our classrooms how to interact with others. When meeting someone new, students leaving traditional classrooms are more likely to engage in a social comparison process: *"Who is better, who is worse?"* Or even worse, they may hope for the failure of others to look good or to inflate their self-worth. Students leaving classrooms in which they have learned to work together and support each other are far more likely to ask, *"How can we work together; how can we help each other?"*

Engagement strategies give teachers leverage. With a good lever, little effort produces big results. These engagement strategies are powerful levers. With little effort, by adopting these simple, easy-to-use cooperative engagement strategies we can radically transform classroom interactions, create more equitable outcomes, and positively transform social character!

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