

A Focus on Cooperative Learning: Implementing Systems to Impact Student Engagement

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This article explores how one school in Abu Dhabi, UAE implemented the Kagan model of cooperative learning as a school wide strategy to increase student engagement, communication, critical thinking and teamwork skills. The first part discusses the four principles that differentiate cooperative learning from group work. These principles as embodied by the acronym PIES (positive interdependence, individual accountability, equal participation and simultaneous interaction) outline the conditions that must be met when designing learning experiences that are cooperative in nature. The latter part takes a look at four leadership principles i.e. creating focus, influencing others, establishing expectations and providing support that form the basis of creating systems that facilitate school wide implementation of Kagan cooperative learning. Examples of specific tools and strategies that were deployed to impact student engagement on school wide level through cooperative learning are discussed.

Why Cooperative Learning:

In the school's last inspection report, the Abu Dhabi Education Council (ADEC), the inspection body of schools in the emirate of Abu Dhabi, identified increasing student engagement as active learners in lessons as a key priority to improve the quality of teaching and learning (ADEC, 2015). As a school, we have identified cooperative learning as playing a pivotal role in raising student engagement. When fully implemented, cooperative learning has the potential to positively impact a range of academic, personal and social outcomes for students, such as, improved attainment, reduced achievement gap between the highest and lowest performing group of students, improved interracial peer relationships, positive classroom climate and increased motivation to name just a few (Kagan, 1999).

In order to embrace a cooperative model of teaching and learning, interaction patterns between teacher and students and amongst students need to evolve. Traditional patterns of teacher student interaction are characterized by teachers posing questions and asking students to volunteer for answers. This interaction pattern results in a handful of students voluntarily participating with majority of students content to "hide" and stay disengaged with the learning process. There is a need to create more equitable learning environment and making every student accountable for their learning as opposed to a select few. When used appropriately, cooperative learning strategies raise the accountability level for all students and create engagement, thereby improving their outcomes. When students interact with each other in the

learning context rather than passively listen to the teacher, there is a constructivist shift in learning. The latter point aligns with the additional target given to the school by ADEC (2014) which was to improve the development of students' 21st century skills. It is anticipated that through the implementation of a cooperating learning model, there would be an improvement in students' communication, critical thinking and teamwork skills, all part of 21st century skills.

With a plethora of educational research documenting the range of benefits of cooperative learning, (Marzano & Pollock 2001; Slavin, 2010; Johnson & Johnson, 2014; Gillies, 2016), the question that this article seeks to explore is how did one school in Abu Dhabi implement systems that impact student engagement through cooperative learning (CL) as the identified high leverage strategy.

With this in mind, the next section offers an insight into what makes cooperative learning work with particular regards to the Kagan model of CL that the school has adopted. While outlining the principles of CL, this section also explores how the school has managed the change inherent in implementing and embedding a new initiative. This section is divided into two parts. The first part aims to explore what is and what is *not* cooperative learning (CL). It seeks to outline the basic conditions that differentiate CL from group work. The second part identifies the leadership principles with examples of tools and strategies that the school has utilized to lead and manage change that positively impact CL implementation efforts and ultimately student outcomes.

What Makes Cooperative Learning Works – Basic Principles PIES

There are many approaches to CL (Aronson, 1978; Slavin, 1980, 1986; Kagan, 1985; Thele, Sharan & Sharan, 1994; Cohen & Lotan, 1997; Johnson & Johnson, 1999 all cited in Kagan & Kagan, 2009). To support the focal school's strategic vision the school has adopted the Kagan model for CL implementation. "What primarily distinguishes Kagan CL from the other approaches is the emphasis on simple structures that can be used as part of any lesson... because the approach relies on simple structures, takes no special materials, takes no special preparation, and no change in lesson design or lesson content, cooperative learning becomes integrated into every lesson." (Kagan & Kagan, 2009).

The most powerful tool that helps us understand the model of Kagan cooperative learning is symbolized by the acronym PIES and embodies four principles that contribute to the positive outcomes associated with CL (Kagan & Kagan, 2009). In a nutshell, PIES principles form the backbone of CL, and hence, understanding these is essential to view learning tasks that are designed with the intention of promoting CL amongst students. These principles are informed by the research and theories on CL and its practical application.

The following section will take a look at each of these principles in turn and consider the key question that represents the critical idea of each of the four principles as it relates to Kagan cooperative learning model.

1. Positive Interdependence

Positive interdependence has two distinct concepts – positive correlation and interdependence:

1a. Positive Correlation

Critical question: Does one doing well helps the other?

Consider the following sequence to understand this principle. During a lesson, teacher poses a question, gives think time, then asks students to respond. Students volunteer to respond by raising their hands. Teachers selects students to respond and teacher gives feedback. In this classroom, students are competing for teacher’s attention. When one student is selected to answer, it reduces the opportunities for other students to be chosen and receive recognition by the teacher and peers, in turn creating a competitive rather than cooperative environment. Gain of one student becomes a loss for another resulting in negative correlation of outcomes. The idea of positive correlation can be summed up by the gains of one student resulting in gains for others. CL tasks are structured in a way that gain of one student becomes gain of another which in turn makes the students feel that they are on the same side.

1b. Interdependence

Critical question: Does task completion depend on everyone?

To understand interdependence, consider the following scenario. Teacher poses a question, gives think time, then asks the students to discuss the answer in their teams. What typically follows in a group discussion is that the most confident and articulate student dominates the discussion and the less confident student is happy to sit back and let the others take over. More often than not, the students who are content to stay quiet are the very students who need more opportunities to speak and express their thoughts more often. Unstructured team discussion can easily be completed without everyone in the team required to participate. Task completion does not depend on everyone to their part, hence, interdependence is absent.

On the other hand, if team interaction is structured through, for example, “Timed Round Robin”, (a Kagan CL structure), then each member of the team is required to contribute their thoughts for a specified amount of time and at the same time benefit by listening to the ideas of others in the team. “Timed Round Robin” cannot be completed until everyone does their part, thus creating mutual interdependence.

Positive Interdependence promotes cooperation by creating the feeling amongst peers that “we need each other.”

1. Individual Accountability

Critical question: Is individual, public performance required?

Unstructured group work where norms of CL are not defined. For example; in situations where students have to work in teams towards an end goal without an understanding of group norms, it is common to see the most assertive or higher achieving students doing most of the work

coupled with a “free rider” effect on those students who are unmotivated or perceived to be lesser achieving. The end product or the goal of the group is met without accountability of individual students which creates illusion of achieved competencies while students’ individual performance is compromised.

Contrast this with situations where students’ interaction is structured, for example, through “Round Table Consensus”, (another Kagan CL structure), where students work in cooperative teams of four. Each student is required to write an individual response which the group members discuss to arrive on a consensus. The student writing the response receives coaching from the group if response needs to be developed and is praised for the effort by the next student in turn. The structure “Round Table Consensus” ensures that each group member is accountable to his/her group for producing a written response on which he/she receives coaching and praise from the group. This eliminates both, the “know it all” and “free rider” effect commonly found in group work.

Where learning tasks are structured in a way that individual accountability is high, students feel that they cannot “hide.”

2. Equal Participation

Critical question: Is participation approximately equal?

Traditional call on one student teacher interaction pattern invariably creates an environment where participation of students is largely unequal. When the teacher calls on students to indicate, for example, by putting their hands up if they would like to respond, the only students who are participating overtly are those minority of students who are higher achieving and volunteer to engage in a conversation. It is rare to see the less achieving students volunteering for a response. Yet these are the students who are most in need of participating. The traditional classroom interaction patterns are designed to provide a perfect context for these students to opt out of engaging in the learning process and hide. Equal participation is the principle of CL that reverses this. Research in CL finds the strongest gains made are by the lowest achieving students. “Equal participation operates in tandem with individual accountability to reduce achievement disparity.” (Kagan & Kagan, 2009).

When equal participation is in operation, students feel they have the same status in the classroom.

3. Simultaneous Interaction

Critical question: What percent of students are overtly interacting (talking or writing) at once?

In cooperative classrooms, student to student interactions are structured in a way that allows for many students to be interacting at a given point. To fully understand this, let us assume that there are thirty students in a classroom. The teacher calls on one student at a time and the student responds followed by teacher’s feedback. With this structure in place, there is 1/30 or 0.33 percent of students engaged in an overt interaction (talking around the learning content)

in the class at a given point. Contrast this with a simple CL Kagan structure, “Timed Pair Share”, where teachers ask a question, tells students that they will be sharing their responses with a partner for a predetermined amount of time, gives think time to students to prepare their responses, then structures partners to interact with each other. Each student takes it in turn to verbalize their response in front of their partner. Listening partner responds by paraphrasing what was said and praises the talking partner. With this structure, 50% of students are overtly interacting at a given point. Simultaneous interaction in CL structures causes the engagement factor in a class of 30 students to move from 0.33 to 50 percent, in turn causing a significant decrease in teacher’s talk and an increase in students’ talk.

The result is that the students in CL classrooms feel actively engaged with the learning process.

Understanding the PIES principles is critical as it provides the lens through which an objective criteria for CL is derived. For any learning task or activity to be qualified as cooperative in nature, each of the four basic principles must be present.

With this background in mind, the next part of the article takes a look at how the school implemented systems to initiate and embed CL as a research backed instructional strategy. This section focuses on three main leadership principles that were crucial to the process of leading and managing this change.

Leading and Managing Change

Creating focus

Shifting patterns of student teacher interactions from one that stem heavily from the traditional type of “call on one student at a time” to one that embodies PIES principles is a change. When it comes to implementing change, experts caution us to consider less as more. Reeve’s (2010) Law of Initiative Fatigue states that “when the number of initiatives increases while time, resources, and emotional energy are constant, then each new initiative—no matter how well conceived or well intentioned—will receive fewer minutes, dollars, and ounces of emotional energy than its predecessors.” This point is reflected upon by Minor (Issue #55) who notes that in today’s educational landscape, where it is common for schools to have the repeated introduction of initiative after initiative, it is of little wonder that many staff members have adopted an attitude of “this too shall pass”? Because “this too does pass”. There is no need for this to happen if initiatives are considered carefully. Because of its robust nature, CL curbs the need for schools to adopt a host of competing programs and initiatives. Its impact because of its multifaceted nature is in line with Reeve’s (2011) notion of leverage that suggests focusing on few carefully selected and research supported initiatives that affect multiple variables, thereby creating efficacy in the system.

Inherent to creating focus is developing a shared understanding of what constitutes as CL and what differentiates it from unstructured group work. In this regard, it was critical to involve teachers from the outset in viewing student interactions through the lens of PIES principles. PIES was identified as the driving factor that demarcated CL from unstructured group work. This created focus on two levels. At the teaching level, it gave the educators a tool to gauge

student engagement and at the leadership level, it provided a benchmark to provide objective feedback and subsequent support to teachers. Fullan's (2002, *Understanding Change*, para 1) view that "Having the best ideas is not enough. Leaders help others assess and find collective meaning and commitment to new ways" resonates with the ways the school created focus through creating shared understanding, not just during the initial stages of implementation but carried it throughout the process.

Influencing others

The idea of influencing actions is one of particular importance as it has the potential of providing the right conditions in which change can be led and managed effectively. Fullan (2001, p126) describes "Learning in the setting you work or learning in context is the learning with the greatest payoff because it is more specific (customized to the situation) and because it is social (involves the group)...Such learning changes the individual and the context simultaneously." One way through which Fullan's idea of learning in context was conceptualized by the current school was through flexible use of tools designed to implement CL on a school wide basis. An example of one such tool that helped gauge the levels of implementation of CL was the use of walk through observation forms specifically designed to analyze the PIES principles when monitoring student interactions. Besides providing an objective measure of student engagement levels, these walk through observation forms also served as an instrument to catalyze a reflective dialogue between the observer and the teacher observed provided they were used in a non-evaluative context. It is critical to understand the need for building relationships in order for such practices to be meaningful. James Hunter's ideology of servant leadership helps us appreciate the power of positive relationships. Hunter's (1998, p30) definition of leadership as "the skill of influencing others to willingly do what you want them to...not because you hold power over them, but because you have built a relationship with them," resonates on many levels. Best explained by Liz Wiseman (2010), this model of leadership has the potential to motivate educators to share ideas and best practices, in turn creating a 'multiplier' or amplifying effect on what cannot be achieved through a top down approach.

Another means that was beneficial in creating positive influence on others was the idea of catalyzing professional dialogue through peer observations. In the author's experience, this was possibly the most valuable means in terms of providing the fodder for positive change. When teachers open their classroom doors and invite colleagues to see learning in action, it has a powerful effect in terms of influencing instructional practice. The process of peer observation provides opportunities for colleagues to see a CL strategy in action which in turn serves to influence teachers to consider alternative contexts to enhance their own practice. This was observed first hand when a grade 5 teacher opened the classroom doors to see the strategy "Cooperative Team Projects" in action which inspired a group of grade 4 teachers to consider this strategy within their later units of instruction. This brings us back to the idea advocated by Fullan (2002) that organizations cannot truly flourish on the actions of the top leader alone. It is only when leaders are able to build relationships and bring together the expertise of people that sustainable change can take place.

Establish expectations

Providing quality professional development opportunities where educators experience the power of CL first hand and understand the PIES principles as the backbone of CL structures is an essential step in taking the ambiguity out of what is and is not CL. However, this is just the starting point. School wide initiatives require systems to be in place where teachers are supported inside their classrooms. Joyce and Showers (2003) advocate a strong case for coaching to be in place if theory practice gap between professional development activities and classroom practice is desired. In the focal school, Kagan coaching model has been put in place as a means to ensure classroom success with new CL strategies. The Kagan model of teaching has at its heart the need for teachers to know immediately what they are and are not doing correctly when trying a new instructional strategy. In this sense, the model can be compared to that of a sports coach where assistance is given in the moment resulting in time efficient and effective approach to improving teaching and learning (Kagan, 2006).

Besides quality professional development and coaching, adopting a model of CL during faculty meetings sends out a strong message- we practice what we preach. Today's schools require leaders to be equipped with tools that allow them to lead 21st century schools. Considering parallels between a staff faculty meeting and a classroom may illustrate this point better. In both situations, there is an audience and a person leading the audience. If faculty meetings are led predominantly in a "chalk and talk" style, there is an unintentional discrepancy between what the school values and what it actually does. Kagan (2004, para 3) notes that "They both (faculty meetings and traditional classrooms) lack interaction, active participation by its members, a sense of belonging and control. They both lead predictably to disengagement, frustration, and alienation." Reeves' (2010) words, "Vision without implementation is counterproductive" are a reminder that if schools value active participation and engagement of students in their learning process and wish classrooms to be a dynamic place, then leaders must lead by example and restructuring the dynamics of faculty meetings is one way of doing so.

In addition to the above, there are other tools that are useful to establish expectations by getting educators to collaborate on exploring new instructional strategies. Structure a Month or S.A.M clubs are one such example. Essentially, S.A.M clubs are professional learning communities (PLCs) where the faculty comes together and works collaboratively to consider new ways to apply a focused CL strategy in context. Reeves (2009, p47) notes that "Every collaboration... must have defined results with specific and measurable adult actions. Just as students should be able to articulate, "If I learn this lesson well, I should be able to..." so, too, educators and administrators should be able to say, "If this meeting is successful, then we should be able to..." To this end, S.A.M meetings are structured to focus on a selected Kagan structure, experience it in action during the meeting, analyze it for PIES principles through, for example, watching classroom video clips and collaborate with colleagues to explore ideas for classroom applications across different subjects and grades with the goal of bridging the theory practice gap in classroom practice.

Providing support in successful implementation of CL

It is important to realize that the positive outcomes associated with CL can only be seen with its full implementation. Too many times, schools engage in initiatives that are implemented to some degree before they are replaced by something new. In his book, Reeves (2009, p43) challenges popular leadership myths, one of which is that "Just a little bit better is good

enough.” Considering the context of implementing CL, it is easy to see the implications of Reeve’s comment. During the initial stages of CL implementation, it is common for teachers to experiment with one or two CL structures on an occasional basis with the perception that CL model is being implemented. It is at this stage that they need to be supported though, for example, through lesson design ideas to create multi-structural lessons, peer observations, in class coaching sessions and focused team meetings to consider purposefulness of different CL structures to suit the varying functions of lessons. This type of support is geared towards raising the efforts in effective implementation of CL at classroom levels through practical, hands on tools and strategies. Research outlines that little or moderate implementation is no better than the absence of implementation. It is only with full implementation that the positive outcomes on students’ achievements become a reality (Reeves, 2009).

In this vein, CL implementation rubrics are yet another tool that helps teachers gauge the levels of implementation of CL in their classrooms against its key elements. At the same time, the rubrics are a helpful tool at the leadership level to ascertain the extent to which the school is successful in implementing the initiative, the key strengths and next steps in moving forward.

Way forward...

Cooperative learning is backed up through a wide base of research that documents its positive impact on students’ academic and social outcomes. The focal school I discuss herein has taken the initiative to embrace a cooperative model of teaching and learning to address engagement levels of all students while developing the 21st century skills of communication, collaboration, critical and creative thinking in all subjects at all grade levels. While there are several models of cooperative learning that exist, the school has chosen Kagan Cooperative Learning as its focus model. With easy to implement strategies that are content free and require little or no special preparation, Kagan structures allow students to interact with curriculum standards and with each other at the same time. “Kagan structures enable classroom teachers to address many dimensions of student learning with a single instructional practice.” thereby reducing the burnout associated with too many parallel initiatives (Minor & Minor, p4). The understanding of PIES principles (positive interdependence, individual accountability, equal participation and simultaneous interaction) is critical in differentiating CL from unstructured group work and forms the objective lens through which learning tasks are viewed and students’ engagement levels are measured.

In order for the school to be effective in its implementation of CL, systems have been put in place to lead and manage the change. Through creating focus at the start of the process, establishing expectations throughout the journey and influencing and supporting teachers in their implementation efforts, the school has been successful in moving towards the path of becoming a cooperative school. There are several tools utilized by the school to help with effective systems implementation, such as, the walkthrough observation criteria, in class coaching, peer observations, S.A.M. clubs, cooperative meetings and CL implementation rubrics. At the time that this article is written, further work needs to be done in terms of deploying these tools and processes more effectively towards full implementation. If the range of the positive outcomes associated with research on CL are to be realized, processes need to be in place that in Michael Fullan’s words “can create a system where positive change is almost inevitable” (Fullan, 2002).



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