Organizzare efficacemente il Cooperative Learning in tutte le classi: l'utilizzo del "Dual Objective" per ottenere migliori risultati affettivi e cognitivi

Well-structured Cooperative Learning in all classrooms: using the Dual Objective to maximize affective and cognitive gain

Paul Vermette
Niagara University – USA - pjv@niagara.edu
Cindy Kline
Niagara University – USA - cmckline@roadrunner.com

ABSTRACT
The authors contend that the research evidence involving Cooperative Learning as a powerful teaching strategy is unprecedented in educational history and is voluminous in breadth. They say that the research supports its use across diverse nations and cultures, across disciplines, with both genders and with all age groups (including higher education). They lament that more educators don't use it, but they also fear that a greater concern is teachers using badly designed attempts: usually conceptualized as "groupwork", which fails to meet the specs of the research studies and holds no special promise of success. However, the design and implementation of well-structured Cooperative Learning, as exemplified in their model called The Dual Objective, results in greater conceptual gain, cognitive skill improvement, social skill development and better self-management by students. This paper explains both Cooperative Learning (CL) as a general category of instructional design and the specific features of the Dual Objective (DO).

Gli autori sostengono che le innumerevoli ricerche che presentano il Cooperative Learning come una potente strategia di insegnamento è senza precedenti nella storia educativa, soprattutto per il loro numero. Le ricerche documentano come il cooperative learning sia interculturale, poiché il suo utilizzo è trasversale in diverse nazioni e culture, attraverso le discipline, con entrambi i generi, e a tutte le età della vita. Gli autori consideravano che pur alla luce degli effetti positivi, il cooperative learning viene poco utilizzato, ed esprimono anche il timore e la preoccupazione che molti insegnanti realizzano tentativi mal progettati: solitamente infatti il cooperative learning viene concettualizzato come "lavoro di gruppo", che non riesce però a soddisfare le caratteristiche espresse dagli studi di ricerca e che ne permettono l'efficacia. Tuttavia, la progettazione e l'attuazione del Cooperative Learning ben organizzato, come esemplificato nel loro modello chiamato "Dual Objective", si traduce in un arricchimento della prospettiva pedagogica, un miglioramento di abilità e competenze, lo sviluppo di competenze sociali e una più efficace autogestione da parte degli studenti.

KEYWORDS
Affective skills, assessment, Cooperative Learning, Dual Objective, feedback, groupwork, Habits of Mind, positive interdependence, process/product.
Abilità sociali, valutazione, Cooperative Learning, obiettivo duale, feedback, lavoro di gruppo, disposizioni della mente, interdipendenza positiva, prodotto/processo.

1. Introduction: What is Cooperative Learning?

Please carefully consider the descriptions of two 8th grade classrooms in which students are learning math. Please compare and contrast the two classrooms.

> Room 101
> During the one-hour class, students work in small groups of 3-4 that have been used during a portion of each day for the past three weeks. Students were assigned to the various groups by the teacher, who gave every student a specific role: group leader, materials handler, recorder/scribe, and perception-checker. Four separate times during class, the room changed from a large group to these teams, and during the team time, the students (a) solved a batch of problems related to the new content, (b) checked each other's developing understanding of the material (c) designed new practice problems for fellow classmates to solve, and finally (d) jointly filled out a reflection sheet that showed what they had learned and how well they had worked together. The teacher did some large group presentation work, but her major role during the class session was moving from group to group asking pointed questions to individuals about what they learning, what others in the team were thinking, about other possible solutions to the problems, how they were feeling about the group's effectiveness and/or providing feedback as appropriate.
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> Room 102
> Working at the same time and with the same resources, students in this room spent the first half of class watching the teacher demonstrate solutions to various mathematical problems. Twice the students were told to stop their thinking and get in small groups (on their own), to figure out how to solve the problems. After 15 minutes of the groups doing the given task, volunteers from each group were asked to go to the board and write their answers to various items, until all were shown. In the second group activity, the teams were given a 20 point quiz and asked to take it together, turning in one paper with all four names on it. This teacher did not want to interfere with student learning, so he used the group time to correct the previous night's assignments in order to return them before the end of class.

While we are not sure of what you may have seen as you compared these two scenarios, we saw vast and important differences. While both classes appeared to be active and using student-to-student interaction, the first fits our understanding of Cooperative Learning and the second can best be called groupwork. The research base on well-structured Cooperative Learning is enormous and suggests that it is the single most powerful intervention we can use in any subject and at any level of education (Ellis, 2005); that same thing cannot be said of groupwork. We hope by your reading this article, that you will discover, or confirm how to do the latter effectively in your own classes.

So let's return to our classrooms as examples….what **differences** did we see in the two scenarios? While there are many, here are three which are key:

In scenario one, the teacher moves about the room, interacting with individuals and teams, effectively giving feedback while learning and student activity were actually happening. In scenario two, the teacher assigned tasks and stepped away, leaving the students to work alone, without the benefit of his interven-

tions. Compared to groupwork, teachers using well-structured CL are far more likely to ask good thought-provoking questions, use warmer and more inviting language and do less "disciplining" (Gillies, 2006), resulting in a more productive learning environment.

In scenario one, the teacher has carefully and thoughtfully created the teams herself, assuring that the students will encounter challenging ideas, meet and deal with interesting people unlike themselves and have opportunities to experience the benefits of diversity. Left to their own devices to build teams, as was done in scenario two, students will seldom leave their comfort zones, rarely encounter people unlike themselves, and have little need to work through a difference of opinion with a colleague, or to have to explain their ideas with great care. Mitchell, Reilly, Bramwell, Solonosky and Lilly (2004), suggest that they create "play" or "friend" groups. Simply put, when students self-select their groups, they might be happy, but they will think deeply less often, less carefully and they will lose opportunities for affective growth from real (potentially dissenting) discussion, as is encountered in everyday life.

Finally, if you look closely you will see that the structure in room 101 forces every student to be held accountable for learning the new material. In groupwork, one student often does the work (and therefore, the learning) while the others take credit without learning for themselves. Also a system has been designed in room 101 where for one student to succeed, others in the group must do so also. This factor is called positive interdependence (Johnson and Johnson, l989) and is a huge difference in the way work gets done and the way relationships get built in the two scenarios. Students are far more likely to care about each other and help each other in a well-structured CL setting than in "small group learning" (Gillies, 2004; Webb and Farivar, l994).

If you saw these three differences (and maybe others), wonderful! You will enjoy reading the rest of the article for it will validate your beliefs and practice and maybe push you to rethink a few of your specific strategies, or include some new ones. You are probably committed to developing 21st Century skills in your students and wish them to succeed in all of life's challenges, not just passing examinations. You may recognize the real purpose of education as rooted in the development of dispositions or Habits of Mind (Costa and Kallick, 2014), which CL facilitates very effectively.

If you saw none of these differences, please read this article carefully and again several more times. Talk to a colleague about what you think the article says and ask what he or she thinks of the suggestions offered. Visit a CL-based classroom and think about the two math classes you read about here. But, please do continue reading now; it may change your world.

If you saw some of the differences we cited or had a sense of the differences, continue reading with the distinct notion of experimenting within your existing practice. Perhaps ignore the theory (although it offers a mountain of evidence) and concentrate on practical changes to your current strategies considering the way young people construct knowledge through experience. Perhaps concentrate efforts on the development of a classroom environment where students can actively practice working through the social skills they will need for success in life, in tandem with their academic knowledge. Perhaps create the classroom where students experience the promise of "community", and recognize their part and value in it. Perhaps provide the experiences where young people are shaped by their interaction with others. Well-structured CL builds a sense of community WITHIN A CLASSROOM (Glasser, l986) which allows students to experience fun, freedom, power, and a true sense of belonging. Best of all, the affective skills

practiced (and learned) through well-structured CL are immediately accessible, completely transferrable and linked directly to academic gains.

To us, well-structured Cooperative Learning is best described as follows:

> Cooperative Learning teams are relatively permanent, teacher built, 2,3 or 4 person teams of diverse students working together to solve problems, (individually) master new ideas, hone social skills, develop intrapersonal habits of thinking and acting and who are partially responsible to and for their teammates.

No matter which category you fell into while doing the room comparisons, keep reading and thinking about these differences, our description above, and consider the possibilities.

2. Why do Cooperative Learning?

There are four major reasons to develop a teaching style that features cooperative learning in philosophy and practice. As you continue, identify opportunities that are relevant to your particular situation and consider where opportunities exist within your own curricula.

2.1. Talk leads to learning

Despite the old school adage, "keep quiet and listen…and you'll learn something," a better suggestion is to have learners talk about the content in order to learn the content. Our colleague from Ontario, John Myers, has created the chart shown in Figure 1. He posits seven types of opportunities for educators to take advantage of the power of "student talk".

The chart below shows which types of tasks lend themselves well to a collaborative learning experience and the benefits derived from doing so. *Excerpted from J. Myers' Co-operative Learning: An Inadequate Introduction- a core article for the Models of Teaching Related Studies course (OISE, 2009). Modified by Kline (2010).*

Tasks involving exploratory talk	Sometimes you may want students to struggle with new information by talking through ideas. Small group brainstorming to generate ideas and reactions to a provocative question posed by a teacher (or another student) are two examples.
Tasks involving checking for understanding	You might have a student turn to a partner and review the key points of a film or a presentation. Students are typically more willing to express uncertainty in a small group or with a trusted partner than in front of a whole class. That's why the often-used "Any questions? Any comments?" directed to an entire class may not work.
Tasks involving problem solving and/or decision-making	Members of a small group can combine different perspectives, either based on their own experiences or based on the resource-interdependent task you have created. They must talk it through in order to achieve a consensus and in so doing achieve a deeper understanding.
Tasks in which a variety of abilities are required	Different students bring different talents and experiences to a task. For example, if students create a propaganda poster for World War I, some students draw while others work on the captioning, While working from strength is important, the ultimate goal is to help students develop strengths in many areas of learning.
Tasks involving review of previously encountered ideas or material	If you ensure individual accountability, students can review material in small groups prior to a quiz or major test. This is particularly beneficial if direct instruction or another whole-class approach to initial learning was used. After all, students who mastered the work the first time do not need review, while those who struggled with a teacher-centered approach the first time are not likely to learn through more of the same. In mixing them, deeper understanding is facilitated.
As a substitute for individual practice in a direct instruction lesson	Some co-operative approaches (e.g. Slavin, 1986) consist of peer-tutoring in the practice phase of direct instruction. By using a cooperative, rather than an independent experience, the "closet confused" often surface and receive the help they need without the embarrassment of making this publically recognized. Those in the tutoring role, benefit as well by learning empathy.
As a vehicle for reflection on the learning	This works in the same way that people talk after a movie, play, concert, or sports event by promoting a synthesis of information.

Figure 1 – Making Work Collaborative

Consider the following classroom scenario, as you read, determine which of the purposes for productive talk from above are at play.

> Ms. Carthwait begins her 3rd period 9th grade English class by directing the 25 students to look at the front board and silently read the quotation from a book they are reading: "a man is judged by what he does for others." After 8 seconds she states," Now, get into your 'study-buddy pairs' and do three things: (l) translate this into your own words (2) explain the implications on your own lives and (3) assess whether or not you think that people in our country behave in accordance with this saying. Be respectful as you explore the ideas: each of you has to be ready to report out in about 15 minutes." During the final minutes, many kids are busy reviewing and then just chatting. She stops them and says, "Now…find another buddy pair…and take five minutes to explain your insights…record in your journal agreements and disagreements as we always do."

In the first section, where the students are charged with considering the quote, in order to accomplish the three tasks, they must generate and talk through ideas, and question one another. Then they must make decisions as a group about the connection between the quote and todays' society. This involves two of the elements above; tasks involving exploratory talk and tasks involving problem solving and/or decision making. In the end, after they have exchanged ideas with a second buddy pair (very good strategy for deepening observations and understanding), they document in their journals, which serves as a vehicle for reflection on learning.

Adapting your practice to a more collaborative style is as simple as conside-

ring activities you may have used previously, or those which you are developing and thinking of the actions you want your students to complete. A quick comparison using the above chart will provide you direction.

A very common classroom application which can effectively be converted to a collaborative style is the checking of homework. Often teachers assign homework, and then on the day it is due, they take great pains to review every question with the class as a whole to assure everyone has the correct answer. Granted, this does provide accurate answers, but it falls short of facilitating understanding because the students are not engaged in making the conversion with their own minds. Giving an answer is never as powerful as finding an answer. The struggling with old misconceptions as they move to new meanings is where the learning occurs. Many students will not ask the questions they need to make meaning in the public forum of a whole-class review. If instead, students were to compare original answers in small workgroups, discrepancies could be uncovered, discussed and addressed, until consensus is reached on the correct answer. Teacher intervention can then be targeted toward remaining inaccuracies, or to challenge application. Time is saved, learning is personalized, and understanding is deepened.

The more tasks within each activity that you make collaborative, the more discussion will ensue, and the more likely deep learning is to occur.

2.2. Collaboration builds community

At many levels, relationships are the most important thing about the schooling process. College students may drop out because they don't connect with others (Astin, l993); urban students may do so for the same reason (Boykin and Noguera, 2011). A mountain of studies by the Johnsons (see Johnson and Johnson, 2009, for the latest version of this point and/or take a look at Qin, Johnson and Johnson, l995, for an older but more formal review) show that competitive classroom structures are NOWHERE NEAR AS POWERFUL as are COOPERATIVE ones.

> By definition, a community is a group of people who work with one another building a sense of trust, care, and support. This means that in our classrooms, part of our job is to provide opportunities and structures by which students can help and support one another. It also means that we provide explicit instruction and support so that students learn *how* to do this (Hattie, 2006).
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> Scholarship reveals that the student who feels emotionally supported and interested (both increased by a positive sense of community) has an increased likelihood of deep and meaningful cognitive engagement. Emotionally secure classroom environments, in a context of academic expectations, foster the deep engagement necessary for each student to maximize his or her potential (Vermette, 2009).

Studies show that if the school is trying to help diverse learners become comfortable with each other, they must work together in a successful and interdependent joint experience (Slavin and Oickle, l981): members of groups that are self-selected are not as likely to accomplish this goal. Left to their own devices, students will select homogenous groups where the benefit of dissenting views may never become part of their practice. Dissention creates an environment of challenge that must be dealt with, particularly when consensus must be reached.

Research across genders (Slavin and Karweit, l984; Webb, l984; Johnson, Johnson, Scott and Ramolae, l985) across religious boundaries (Hertz-Lazarowitz, l993) and across social-economic lines (Cohen and Lotan, l995) suggest that the differences within a group can be used to build cohesion, maximize cognitive effort and gain and enrich the schooling experience for all participants. Diversity is a strength that is often underestimated and successful interaction is its own reward (Johnson, Johnson, Buckman and Richards, l986)!

3. Collaboration develops 21st Century skills

> Education in the U.S. reflects our values and priorities as a society. This includes dedication to democratic ideals, a commitment to individual freedom and a respect for diversity within our population. The U.S. has as its goal, the establishment of a quality education that will enable all children to achieve their highest potential, to serve effectively as citizens of a free society and successfully compete in a changing global marketplace (UNESCO, 2006).

As we seek to excel in the 21st Century we must keep three factors in mind: (Vermette, 2009)

a) Democratic society demands that people respect each other, handle their own responsibilities and follow the rule of law.
b) School seeks to produce Good People, who are good decision-makers, and who flourish in a global economy. They must have skills (cognitive and social-emotional), a mind-set toward optimism and the conceptual knowledge base necessary to handle the demands of international "knowledge-working" careers. Every adolescent must become productive or become a pull on the State, a burden on the rest of us, and a social problem. We should aim straight at types of instruction and curriculum by which each can succeed (e.g. Cooperative Learning).
c) In a pluralist society respecting diversities means that we recognize our commonalities (as we always have) but we also acknowledge and build on our differences.

In addition, surveys of business leaders often suggest that schools do a bad job teaching things like work ethic, empathy, respect for diversity and communication skills: it is our guess that these business leaders are fully supportive of efforts to push CL into a more prominent place in the teaching world.

Operationalizing the teaching of workplace skills through collaboration is what the Dual Objective model facilitates. One perceived "obstacle" to CL that is frequently heard from teachers however, is "my kids cannot work together well". **The flaw here is that the teacher sees collaborative skills as an INPUT, rather than as an OUTPUT.** Working together well is usually a **RESULT** of well-structured CL not a starting point.

Collaborative skills are foundational to human interaction, although many interpretations of those which are essential to success exist today within various schools of thought. One of these more popular approaches, Social and Emotional Learning, has proven to show significant improvement not only in affective development of students, but also in their cognitive achievement as well (see www.CASEL.org). It goes without saying that employing pedagogies with such

positive impact is well worth our time. Learning to do so in a manner that is both systematic and intentional will be discussed later as we examine the Dual Objective model.

3.1. Research and theory support it

While the first three reasons dealt with the mechanisms that underlie the power of CL, this reason is starkly different. Despite what educators have said or believed in the past, research does matter today, cannot be ignored and should be attended to more often than it has been. **CL has the biggest and most robust research base of any intervention in the field.** It works well in Pre K-16 schools, in all subjects, and all around the globe.

The message has been loud, clear and often said: Cooperative Learning works!

We don't promote CL because we like it, we like it (and promote it) because it works. Both authors have had abundant experience with groupwork during their personal schooling. One might assume this is why we support collaboration in the classroom so avidly. Quite the opposite however; our encounters with groupwork were bad and should have given us the perfect excuse NOT to favor teamwork when we became educators. Our experiences however were poorly done groupwork, not well-structured Cooperative Learning. Well-structured CL is the structuring of learning tasks so that there is positive (supportive) interaction among learners in order to achieve the learning goal.

We have mentioned some studies already, but below we will single out several more, just to try to convince you that all of this is worth your commitment (see Vermette, l998, for more about the research base prior to that date and Johnson and Johnson, 2009 for a more recent review).

a) Noreen Webb and her colleagues did a CL-based study in 2004 which found that when students were taught HOW to give and ask for help and to reflect on the interactive process they engaged in, they performed those actions more often and more soundly than untrained students did; and they learned a lot more middle school math in the process (Webb, Nemer, Kersting, Ing and Forrest, 2004).
b) In l995 Elizabeth Cohen investigated ways to improve the status (and achievement) of low-status students (who were often marginalized by higher status peers) within the classroom community. She found that a structure (a form of CL), called Complex Instruction worked to that end and resulted in higher achievement by all students, and a greater respect for all students by their peers (Cohen and Lotan, l995).
c) While comparing the experiences of college students who were taught in both large group settings and in CL structures, Peterson and Miller found that CL led to greater cognitive engagement, higher motivation and a stronger perception about the value of the tasks and content being taught (Peterson and Miller, 2004).

Cooperative Learning works in the larger scope of things: the concern for the believers and the experimenters is to design well-structured CL for successful implementation.

4. HOW do we do Cooperative Learning?

While there are many available models to use to implement CL (Johnson and Johnson's STL, l989; Slavin's TGT and STAD, l991; Sharan's Group Investigation, l984; Kagan's structures, l992; Danserau's various dyadic formats, Larson and Dansereau, l986), our work has brought us to our own model called the Dual Objective (Kline and Vermette, 2009).

Simply put, the Dual Objective model of Cooperative Learning (see Figure 2) has these 4 parts that warrant detailed explanation:

a) Overall structure and flow of the model
b) Team construction by the teacher
c) Tasks to be completed and content to be learned by members of the groups
d) Feedback and assessment on BOTH cognitive and affective objectives

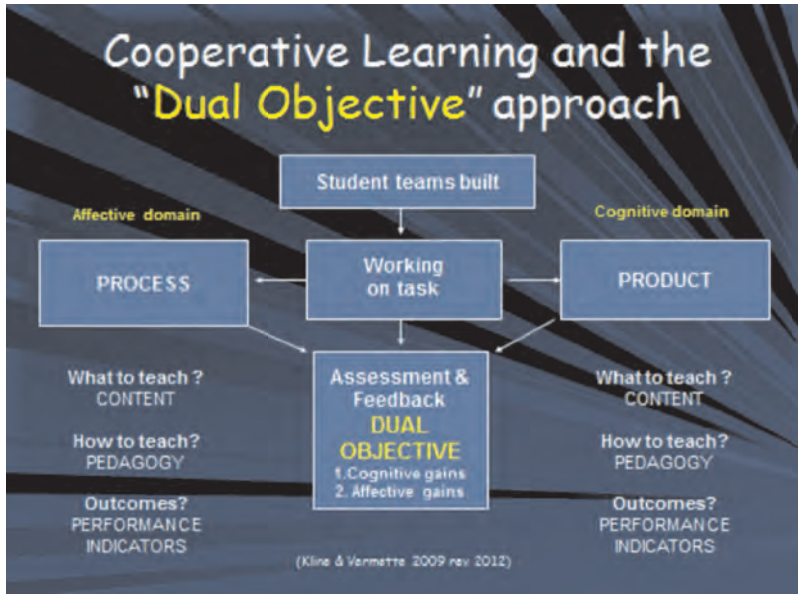

Figure 2 – The Dual Objective model of Cooperative Learning

a) *Structure of the Dual Objective model*

The proficient teacher effectively employing the Dual Objective model plans collaborative learning experiences using a process/ product framework. This orientation recognizes that the PRODUCT (i.e. evidence of essential understandings, performance indicators, objectives, etc.) and the PROCESS (how the student gets there) are interdependent indicators of success, and are equally important. Both are present in any learning activity, both influence overall success, and both should be assessed and feedback provided to those involved. The preceding graphic depicts this through its center strand.

The main components of the model dictate the flow of the process, although supplemental actions are required along the way to complete the experience. In this venue, the discussion is limited to the main components as shown in Figure 2.

b) *Student teams built*

Selecting groups thoughtfully is the beginning of the DO process, and is crucial to highly-functioning teams. In his 1998 text, Vermette goes to great lengths to convince readers to NOT let students pick their own teams. All anecdotal evidence suggests that teachers ignore this plea. Apparently there is a comfort in letting students "work" with friends, avoid certain kids in a class, take control of that part of their day and avoid confrontation with those unlike them. This is simply a mistake. When the teacher builds the team, s/he sends a message that all people are valuable, that working with diversity is a greatly positive thing that every person in class DOES have a (civic) responsibility to every other one, and that one can learn a lot by expanding his or her horizons, contacts and experiences. Case closed. We urge teachers to construct the teams mindfully, do not let any one student work alone, create good tasks that involve multiple talents and perspectives and which call for examining multiple ideas, and build into class a clear expectation for developing social and personal skills. 21st Century realities place new demands on citizens and workers and they anticipate a global, diverse, and complex set of successful experiences and skills from graduates. (See Tony Wagner, 2010, for the best take on this set of expectations).

Try your hand at creating powerful teams: please read the profiles below called Kline's Kids, and sub-divide the list into 3 teams. (Three to four students are the usual number called for in the literature, although pairs are often used as well. Pairs of pairs create fours so these "two sizes" are aligned). These could be base groups (Johnson and Johnson, 1989), which will stay together for a month or more meeting daily, or task groups, which assemble to complete separate tasks as assigned. As you do this, reflect on the criteria you are using to build the teams.

Kline's Kids – 8th Grade Spanish 1 Class (Kline & Vermette, 2013)

1. Juanita, a 15 year old female and native Spanish speaker is from Puerto Rico. In the US now for three years, she is intensely popular, very funny, and a pretty good student. While unpopular with one group of girls, generally everyone cares about her and many help her take care of her little brother when her single-parent dad works his two jobs.
2. Latayna is the kind of girl everyone likes. At 14, she is popular, and a daughter of a local politician. Her father manages a car dealership since their arrival in the area 2 years ago. Nakita is her closest friend, but she socializes with high schoolers as well. She is very comfortable around adults. She is spoiled although her grades are good with a 3.2 GPA.
3. Jack, age 14 is co-captain of the boys basketball team, and very popular. He is handsome and has a girlfriend this year. Both were good students last year, but Jack has not been getting as consistent grades so far this academic year. His parents work outside the home as professionals, and Jack keeps busy with after school activities. He is upbeat, very outgoing, and liked by all segments of the school population. His parents drive his success both in school and out. He skydives, plays soccer, lacrosse, skateboards and enjoys playing guitar in his free time.
4. Timothy, 14, is the slowest thinker in the class of 24. He has had many troubles in school, but has never had to repeat a grade. He always tries to do his work and his parents, who dote on him. They are also around school often and his mother, Dr. Tanner, is a well-known surgeon and President of the PTA. Timothy loves the music of Drake.
5. Maria, 15, is a quiet, studious girl who seldom gets noticed. She rarely questions, keeps a low profile, and gets above average grades in most subjects.

She seems to enjoy Spanish more than her other classes. She wants to be a world traveler someday, maybe working in a government position. Her dad is a military Colonel, and she has moved 4 times already in her young life. She has been in this district for 2 years. She has recently come to love music and helped backstage at last year's school play.

6. 15-year old Cole is a nice-looking, well-put-together young man. He is friendly, relates well with everyone, plays football and always does his school work. He participates frequently in Spanish class, and belongs to the Spanish club, although he often misses meetings in fall for football practice. He has been elected as Vice President of the student advisory committee. His parents are divorced, although they are still good friends. He lives with his executive mom during the year, and travels with his photographer father over the summer. He is an only child.
7. Nakita loves to be the center of attention in everything she does. She has dark eyes and hair, and is a natural beauty. She has 2 older brothers. She wears second-hand clothes which she re-designs. She has few girlfriends, except Latanya, who moved in next door to her last year, and is also in Spanish class. Nakita likes old rock music of her parent's day, and is very artistic. She has won several art awards from both community and school.
8. 13-year old Jason is kidded often about his small stature. A late bloomer (physically) his voice "cracks" often. An only child, he is adored by both parents, but the father, a merchant is seldom home. Jason has a dream: he wants to be a pilot, and hopes that his poor eyesight will improve. He loves all things science!
9. Kya is a 14 year old girl, a result of a religiously mixed marriage (Moslem and Catholic). While often taken for a black child, she frequently counts herself as "Irish". Her poor grades are largely a product of a failure to do homework and Spanish is no exception. She loves rap music, the 4 Tops and Stevie Wonder.
10. Collin at first glance might be mistaken for a girl. At 14, his features are delicate, and his small stature causes him to be the brunt of endless ridicule. Other students call him "gay", although he professes not to be homosexual. He likes to spend lunch period in his Spanish classroom, rather than face the lunch room taunts. He does very well in all his subjects, with a 90 average in Spanish. He has connected with his Spanish teacher, and confides in her. He has begun taking steroids and works out to change his body image.

There are virtually unlimited potential combinations for work groups in any classroom, and for your decisions using the above students as well. Did you place Collin with Nakita? What about Timothy and Juanita? Who would be the best third member for either pair? Who were the students in the 4-person group?

The combinations you made were based upon the available information according to criteria of your choice. The authors favor the following criteria (in succession) as they create groupings: the number of students in each team, attendance, task requirements, personality/interpersonal skills, gender, academic performance, and special circumstance. The "quick list" of do's and don't's:

- DO use heterogeneous groupings to capitalize on diversities.
- DON'T place the highest achievers and lowest achievers in the same group without a mid-range student. This facilitates communication and understanding.
- DO determine the number of groups needed, and place the more challenging students first, building around them.
- DON'T forget to consider the disparate skills needed in the group to complete the task. Balance students having these throughout the teams.

- DO have students exchange contact information in case they need to communicate outside class.
- DON'T allow students to switch groups if dynamics are complex. Rather, you will need to facilitate the initial challenges until groups are self-managing.
- DO have group members share the same grade on the project. This creates vested interest.
- DON'T be afraid to take individual students aside to coach them on acceptable behaviors or to provide interventions as needed. This assists positive group dynamics
- DO have an individual grade component to the task to encourage accountability.
- DON'T forget to establish rules for governing (how are group members expected to behave) BEFORE the teams work together. If the students are involved in doing so the buy-in will be greater.
- DO plan work time to be primarily in-class so you can observe the goings on, and interact as necessary.
- DON'T forget that your role is class facilitator, NOT expert. This requires a shift in mind set and action for many teachers.
- DO formative assessments throughout the work period, to inform your interventions.
- DON'T give up if it doesn't all run like clockwork. Getting accustomed to cooperative learning is a growth endeavor for both student and teacher, who each improve with repeated practice.
- DO be open to change through growth as your classes develop their knowledge and collaborative skills. Experience is a great teacher!

c) *Working on task*

In any learning task, HOW the work gets done is equally as important as the quality of the work itself. During collaborations, this is highly influenced by group dynamics, which must be planned for.

When we think of planning using the Dual Objective, we think in a 2-pronged mode with an emphasis on the student as a "whole" being, having BOTH intellect and affect perpetually interwoven. Cognitive growth can only occur when affect enables it. Recognizing this intimate connection, we emphasize the need for teachers to provide learning experiences that build BOTH cognition and affect in their teaching. This double emphasis; what we call the "Dual Objective" drives design to facilitate maximum student achievement.

In Figure 2, you can see that the "working on task" stage represents these dichotomies both left and right. On the right is the PRODUCT focus, which involves the COGNITIVE learning. On the left is the PROCESS component where AFFECTIVE learning is represented. Both sides of the model cause us to consider WHAT to teach (which concepts we want to address), HOW to teach (what pedagogies we will use), and lastly, what OUTCOMES we expect (what are the performance indicators, objectives, etc. for the learning experience).

First, let's examine the PRODUCT side of the model. Some teachers find this the easiest chore in the Dual Objective process: they look at the content to be learned, matching a good group task (remember the Myers list from earlier?) that forces everyone to think deeply, requires them to seek feedback or challenge, which taps into the backgrounds, prior knowledge and affective skills of the class members and which will keep student attention and effort going (see Dweck, 2006, if you want more on the supreme importance of effort).

The options are nearly endless, bounded only be one's creativity. From di-

scussions, to long or short term projects (to be designed and explained by EACH member of the team), or syntheses tasks like stories, advertisements, outlines, etc.; each is intended to provide evidence of content learning. Multiple tasks may be combined to achieve the complete learning experience. Some teachers are creative powerhouses, however others may need a nudge to come up with activities that are unique, relevant, interesting, challenging and productive.

At Niagara University the authors have been using variations of a list called the 100 products (see Figure 3) to offer suggestions for evidence of learning that groups could create during their teamwork. In her role as a middle school teacher, one of the authors has field-tested most of these 100 products. What is offered below is a new (more contemporary) list appropriate of suggestions to get students actively engaged in SYNTHESIS work that causes learning in each member. To this end, the work by Spencer Kagan (l992), who has designed hundreds of content-free formats that go by the such names as Four Corners, Numbered Heads and the most famous one today, Think-Pair-Share (which was originally created by Frank Lyman in l981) is also worthy of note for the structures they represent.

1. acts of kindness
2. ads (for magazines, newspapers, web)
3. announcements
4. autobiographies
5. awards
6. bedtime stories
7. billboards
8. blogs
9. book jackets
10. book reviews
11. brochures
12. bulletins
13. bumper stickers
14. campaign speeches
15. captions
16. cartoons
17. certificates
18. character sketches
19. collages
20. comic strips
21. community service activities
22. contracts
23. conversations
24. critiques
25. debates
26. definitions
27. diaries
28. directions
29. dramas
30. editorials
31. epitaphs
32. essays
33. fables
34. field trips (virtual/live)
35. game rules
36. graffiti
37. good news-bad news
38. graphic organizers
39. grocery lists
40. headlines
41. interviews
42. job applications
43. journals
44. laboratory notes
45. letters
46. lists
47. lyrics
48. menus
49. mobiles
50. mysteries
51. myths
52. newscasts
53. newspapers
54. obituaries
55. observational notes
56. pamphlets
57. parodies
58. Pecha Kucha's (20/20 presentations)
59. persuasive letters
60. placards
61. plays
62. podcasts
63. poems
64. portfolios
65. posters
66. PowerPoint/Prezi presentations
67. propaganda sheets
68. puppet shows
69. puzzles
70. questionnaires
71. questions
72. quizzes
73. quotations
74. real estate notices
75. recipes
76. reenactments
77. remedies
78. reports
79. resumes
80. reviews
81. rubrics
82. sales pitches
83. schedules
84. self-descriptions
85. sequels
86. Skype interviews
87. slogans
88. speeches
89. scrapbooks
90. TV commercials
91. telegrams
92. travel flyers
93. tributes
94. videos
95. Voki's (voice-over Avatars)
96. want ads
97. wanted posters
98. web pages (Facebook, Google Docs, etc.)
99. Wikipedia entries
100. wills

Figure 3 – 100 Products
Excerpted from "Making Cooperative Learning Work: Student Teams in K-12 Classrooms" (Vermette 1998). Modified by C.Kline (2014).

Now, on to the PROCESS side of the model.

When it comes to maximizing learning, the affective domain is always at play, often observed, potent in its impact, but seldom managed for growth. Often teachers act intuitively by correcting unacceptable student behaviors, with their well-meaning efforts targeted toward ending the offense, and moving on. Compliance is key, rather than understanding. Corrective actions like these are commonplace in today's schools, but they fall short on long-lasting effectiveness. What "utopia" might be experienced if each student was able to self-regulate, making responsible decisions in all his/her actions?

The ability to interact appropriately in social situations, showing ethical and social responsibility, appreciating others' perspectives, setting adaptive goals, effectively help-seeking, negotiating and managing conflicts etc.: ALL affective proficiencies CAN and SHOULD be attended to in our schools. They are as much the purvue of education as science, technology, mathematics and the arts. The challenge for most teachers is not whether these are valid influencers, but rather, HOW to do so. Practicing appropriate behaviors is an essential component for developing social and emotional skills (Durlak et al, 2010; Durlak et al., 2011), and Cooperative Learning is the best pedagogy employable to do so.

In the Dual Objective model affective skills may be combined with cognitive goals or they may be taught discretely, but these skills must be taught EXPLICITLY. Combining these in the same learning experience maximizes teaching time, but requires a new way to look at lesson planning. It requires teachers (using whatever tools they plan with) to establish BOTH a COGNITIVE (academic) goal and an AFFECTIVE (social/emotional) goal within their lessons.

There are many good options to choose from when considering the affective skill content to focus on in a given learning experience. These go by various names, such as characteristics, traits, dispositions, qualities, etc., but the best term by far is "competencies" (Goleman, 1995). Daniel Goleman, when investigating Emotional Intelligence during the 1990's, employed the term, indicating that these aspects of human behavior are not intrinsic, but rather, learned abilities, and therefore, are teachable.

The Dual Objective model is truly universal in application when it comes to determining what to teach, how the material will be introduced (activities), and in shaping the outcomes of the learning. This explicit intention by the authors allows teachers to select affective content based on school mission statements, curricular initiatives, district mandates, student population necessities, as complementary to cognitive content, or simply by convenience.

In their experience, the authors have used such resources for affective focus as: Social and Emotional Core Competencies ("Social and Emotional", 2003), Key Skills for Social and Emotional Learning (Elias and Branden-Muller, 2009), Ontario Learning Skills and Work Habits ("Learning Skills & ", 2010), 49 Character Qualities (Character First, http://www.characterfirst.com), and most recently, Habits of Mind (Costa and Kallick, 2008), all of which are designed to provide "templates" for developing affective growth. The listing of Habits of Mind (very popular internationally) is included below:

Habits of Mind (Costa, Kallick)

1. Persisting
2. Managing impulsivity
3. Listening with understanding and empathy
4. Thinking flexibly
5. Thinking about your thinking (Metacognition)

6. Striving for accuracy
7. Questioning and problem posing
8. Applying past knowledge to new situations
9. Thinking and communicating with clarity and precision
10. Gather data through all senses:
11. Creating, imagining, and innovating
12. Responding with wonderment and awe
13. Taking responsible risks
14. Finding humor
15. Thinking interdependently
16. Remaining open to continuous learning

Each teacher must determine the competencies to target according to their unique circumstance. Selecting ONE approach as an affective basis is crucial, as this becomes a "strategic" commitment. Bouncing from program to program, or approaching the teaching of affective skills in piecemeal fashion is both confusing and ineffective. Regardless of the specific resource, one needs to be both systematic and intentional as one plans for the inclusion of affective competencies into learning experiences. It is imperative that the targeted skills be clearly stated, used frequently, and assessed appropriately.

d) *Assessment and feedback*

The culminating component of the Dual Objective model both focuses and completes the center strand functions. Assessing and providing feedback is vital to improving student achievement.

Look back at Figure 2; note that BOTH sides (PROCESS and PRODUCT) feed into this last step.

In the planning stages, expert teachers start with student outcomes, and work backward to select activities that enable learning of the coordinating content (see "backward planning" Wiggins and McTighe, 2005). These activities involve work that will result in evidence of understanding. Assessing the quality of this evidence and providing feedback to students focuses the collaborative experience for both the cognitive and affective domains. It answers how well students are achieving the expectations. Without explicit feedback, growth in either domain is simply incidental.

Superior teachers recognize the importance of both formative and summative feedback, and they position it skillfully within the collaborative learning experience.

If you can recall for a moment the two scenarios that the article opened with you'll remember that the two teachers showed stark contrast on this critically important aspect of the Dual Objective. One teacher ignored the students as they tried to do their work (a catastrophically bad missed opportunity to help students clarify their thinking and to help them develop their personal interaction and communication skills). The other was an active member of each set of students across the classroom-wide learning communities, "working the room" (Konkoski-Bates and Vermette, 2004) closely observing the students and keeping BOTH the cognitive and the affective objectives in mind. Feedback is a key learning principle (Hattie and Timperley, 2006) and when the thinking is visible and audible as it is in a CL class, the teacher has an infinite set of opportunities to shape, direct, challenge, validate, clarify, stimulate, redirect and support student effort and insight. This is exactly what the teacher in scenario one is trying to do.

Summative assessments of products are commonplace to most educators, and

one of the most widely used is the rubric. Just as useful for affective assessment, the "team contribution rubric" must be based on previously agreed-upon rules of engagement established for governing the teams. The process of determining rules of engagement (desirable behaviors) is one of the sub-steps of the DO model, and as such is not explored in detail here. The listing below shows criteria created and used by the middle school students of one of the authors, to evaluate the quality of team interactions during cooperative learning experiences.

Desirable Behaviors for Cooperative Learning Groups (Kline, Vermette, 2011)
1. Listen actively and openly to others.
2. Work collaboratively with others by sharing ideas and the workload.
3. Come to class prepared and stay on task, using time wisely.
4. Encourage others to offer ideas, give feedback and participate.
5. Address differences of opinion in a constructive and productive way, keeping negative emotions and impulses under control.
6. Help others have fun, and /or enjoy the teamwork.
7. Treat others respectfully.

In practice, the above criteria are used (with a Likert scale) as part of the Team Evaluation Form (Kline and Vermette, 2011), which is completed by each group member upon completion of a major cooperative activity. Afterward, the teacher complies and reviews the results privately with each student, providing specific feedback regarding their performance. In this manner, students are empowered to take ownership of their experience and development of affective abilities.

In Closing

We think that we have made a very strong case that the design and implementation of a well-structured Cooperative Learning classroom will result in deeper student understanding of important concepts AND, improved affective skills, competencies and habits of mind that are necessary for life success in the modern world. One danger we face is that some teachers will lazily use groupwork, without concern for the structuring needed for successful CL. When these efforts don't work, their students may lose out forever.

The questions below are provided as a checklist of sorts to advise your CL planning efforts. Take the time to answer these questions carefully each time you prepare a Cooperative Learning experience:

- What is the task the students are going to complete and how will you know that every student has learned the target ideas?
- What specific Cognitive content and Habits of Mind are targeted for assessment?
- How are the students supposed to interact, treat and communicate with each other and what will be done to help that happen?
- How has a degree of positive interdependence been built into the experience?
- How will you use assessments and observations to help the students improve?

– How will you divide the students up into teams?
– What do you tell them about the work they're going to do and how do you help them see the advantages offered by the internal diversity of their team?
– To quote one of the authors about the issue of this paradigm change from individualized work to teamed effort with individual accountability, teachers must move "from well-meaning and intuitive to systematic and intentional" in their CL planning. Take care in your design and in your evaluation of the process: the students and our communities deserve the best we can give them and the Dual Objective is the right model for that task.

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References

Character Qualities, Character First. Retrieved January 28, 2014, from http://www.character-first.com/qualities/

International Bureau of Education, World Data on Education, 6th Edition. (2006). Retrieved January 25, 2014, from http://www.ibe.unesco.org/fileadmin/user_upload/archive/Countries/WDE/2006/NORTH_AMERICA/United_States_of_America/United_States_of_America.pdf

Learning Skills & Work Habits. (2010). Retrieved January 27, 2014, from http://www.yrdsb.ca/AboutUs/ReportingStudentAchievement/Documents/LearningSkillsandWorkHabitsBrochure.pdf

Social and Emotional Core Competencies. (2003). Retrieved January 29, 2014, from http://www.casel.org/social-and-emotional-learning

Astin, A. (l993). *What matters in college: Four critical years*. San Francisco, CA: Josey-Bass.

Boykin, A. W. & and Noguera, P. (2011). *Creating the opportunity to learn*. Alexandria, VA: ASCD.

Cohen, E. (l994). *Designing groupwork*. NYC, NY: Teacher's College Press.

Cohen, E. and Lotan, R.A. (l995). Producing equal-status interaction in the heterogeneous classroom, *American Educational Research Journal*, 32: 99-120.

Costa, A. & Kallick, B. (2014). *Dispositions*. Thousands Oaks, CA: Corwin Press.

Costa, A. & Kallick, B. (2008). *Habits of Mind across the curriculum*. Alexandria, VA: ASCD.

Elias, M. J. & Branden–Muller, L. R. (2009). Social-Emotional and Character Development and Academics as a Dual Focus of Educational Policy. *Educational Policy*, 23: 831-846,

Durlak, J. A., Weissberg, R. P., Dymnicki, A. B., Taylor, R. D. and Schellinger, K. B. (2011), The Impact of Enhancing Students' Social and Emotional Learning: A Meta-Analysis of School-Based Universal Interventions. *Child Development*, 82: 405–432.

Durlak, J. A., Weissberg, R. P., & Pachan, M. (2010). A meta-analysis of after-school programs that seek to promote personal and social skills in children and adolescents. *American Journal of Community Psychology*,45, 294-309.
Dweck, C. (2006). *Mindset*. NYC, NY: Random House.
Ellis, A. (4th ed, 2005). *Research on educational innovations*. Eye-on-Education: Larchmont, NY.
Gillies, R. (2004). The effects of cooperative learning on junior high students during small group learning. *Learning and Instruction*, 14, 197-213.
Gillies, R. (2006). Teachers' and students' verbal behaviors during cooperative and small group learning. *British Journal of Educational Psychology*, 76, 271-287.
Glasser, W. (l986). *Control theory in the classroom*. NYC, NY: Harper and Row.
Goleman, D. (1995). *Emotional intelligence*. NYC, NY: Bantam Books.
Hattie, J. & Timperley, H. (2006). The power of feedback. *Review of Educational Research*, 77, 1, 81-112.
Hertz-Lazarowitz, R. (l993). Using Group Investigation (GI) to enhance Arab-Jewish relationships. *Cooperative Learning*, 13, 26-28.
Johnson, D. W. & Johnson, R. T. (l989). *Cooperation and competition: Theory and research, Interaction*. book company: Edina, MN: Interaction Book Company.
Johnson, D. W. & Johnson, T. T., (2009). An educational psychology success story: social interdependence theory and cooperative learning. *Educational Researcher*, 38, 5, 365-379.
Johnson, D. W., Johnson, R. T., Buckman, L. A. and Richards, P. S. (1986). The effect of prolonged implementation of cooperative learning on social support within the classroom. *Journal of Psychology*, 119, 405-411.
Johnson, R. T., Johnson, D. W., Scott, L. E., and Ramolae, B. (l985). Effects of single-sex and mixed-sex cooperative interaction on science achievement and attitudes and cross-handicap and cross-sex relationships. *Journal of research in science teaching*, 22, 207-220.
Kagan, S. (l992). *Cooperative Learning resources for teachers*. Riverside, CA: University of California.
Kline, C. & Vermette, P. J. (2009). The Dual Objective Model for Cooperative Learning. *Transition*, 27, 1, 48-53.
Kline, C. & Vermette, P. J. (2011). The Dual Objective model for Cooperative Learning: From "Well-Meaning and Intuitive" to "Systematic and Intentional," at *Great Lakes Association for Cooperation in Education annual conference*, Toronto, Canada.
Kline, C. & Vermette, P. J. (2013). Contexts of learning and development of skills for life: Designing to ENGAGE and motivate students with Cooperative Learning, at *A.R.I.A.C. 8th national seminar*, Lecce, Italy.
Konkoski-Bates, E. & Vermette, P. J. (2004). Working the Room: the key to Cooperative Learning success, at *Great Lakes Association for Cooperation in Education annual conference*, Toronto, Canada.
Larson, C. O. & Dansereau, D. F. (l986) Cooperative learning in dyads. *Journal of Reading*, 29, 6, 516-520.
Mitchell, S., Reilly, R., Bramwell, F., Solnosky, A., and Lilly, F. (2004). Friendship and choosing group-mates: Preferences for teacher-selected vs. student-selected groups in high school science classes. *Journal of Instructional Psychology*, 31, 20-32.
Myers, J. (2009). *Co-operative Learning: An Inadequate Introduction*-[Class handout]. Ontario Institute for Studies in Education.: Toronto, Canada.
Peterson, S. & Miller, J. (2004). Comparing the quality of students' experiences during cooperative learning and large-group instruction. *Journal of Educational Research*, 97, 123-133.
Qin, Z., Johnson, D.W., and Johnson, R. T. (l995). Cooperative versus competitive efforts in problem-solving. *Review of Educational Research*, 65, 129-143.
Slavin, R. (l991). Synthesis of research on cooperative learning. *Educational Leadership*, 48, 82-89.
Slavin, R. & Karweit, N. L. (l981). Cognitive and affective outcomes of an intensive student team learning experience. *Journal of Experimental Education*, 50, 29-35.
Slavin, R. & Oickle, E. (l981). Effects of cooperative learning teams on student achievement

and race relations: Treatment by race interactions. *Sociology of Education*, 54, 174-180.
Sharan, S. (l994). *Handbook of Cooperative Learning methods*. Westport, CT: Greenwood Press.
Vermette, P. (l998). *Making cooperative learning work: Student teams in K-12 classrooms*. Upper Saddle River, NJ: Merrill/Prentice-Hall.
Vermette, P. (2009). The 4 Essential Questions: Success in secondary is the only option; Meeting the challenges of diversities with ENGAGING framework, at *Bertelsmann Foundation, 11th annual conference*, Gutersloh, Germany.
Vermette, P. (2009). *ENGAGING teens in their own learning: 8 Keys to student success*. Larchmont, NY: Eye on Education.
Wagner, T. (2008). *The global achievement gap*. NYC, NY: Basic Books.
Webb, N. M. (l984). Sex differences in interaction and achievement in cooperative small groups. *Journal of Educational Psychology*, 74, 642-655.
Webb, N. M. and Farivar, S. (l994). Promoting helping behaviors in cooperative small groups in middle school mathematics. *American Educational Research Journal*, 23, 243-261.
Webb, N. M., Nemer, K., Kersting, N., Ing, M., and Forrest, J. (2004). *The effects of teacher discourse on student behavior and learning in peer-directed groups*. Report no. 627, Center for the Study of Evaluation, University of California, Los Angeles.
Wiggins, G. P. and McTighe, J. (2005). *Understanding by design*. Alexandria, VA: Association for Supervision and Curriculum Development.