What Is the Right Amount of Group Work in School?

By SHANNON DOYNE JANUARY 17, 2012 6:02 AM

Student Opinion 🖊

Group work — love it or hate it, it's a regular part of the school or work day for many of us. Do you enjoy collaborating with your classmates on projects? Do you learn better as part of a group or by working independently? Do you prefer one style or the other? Why?

In the Op-Ed piece "The Rise of the New Groupthink," Susan Cain uses the example of Apple to explain that it takes more than charisma to achieve success when working as a team:

Culturally, we're often so dazzled by charisma that we overlook the quiet part of the creative process. Consider Apple. In the wake of Steve Jobs's death, we've seen a profusion of myths about the company's success. Most focus on Mr. Jobs's supernatural magnetism and tend to ignore the other crucial figure in Apple's creation: a kindly, introverted engineering wizard, Steve Wozniak, who toiled alone on a beloved invention, the personal computer.

… The story of Apple's origin speaks to the power of collaboration. Mr. Wozniak wouldn't have been catalyzed by the Altair but for the kindred spirits of Homebrew. And he'd never have started Apple without Mr. Jobs.

But it's also a story of solo spirit. If you look at how Mr. Wozniak got the work done — the sheer hard work of creating something from nothing — he did it alone. Late at night, all by himself.

Intentionally so. In his memoir, Mr. Wozniak offers this guidance to aspiring inventors:

"Most inventors and engineers I've met are like me … they live in their heads. They're almost like artists. In fact, the very best of them are artists. And artists work best alone …. I'm going to give you some advice that might be hard to take. That advice is: Work alone… Not on a committee. Not on a team."

… Our schools have also been transformed by the New Groupthink. Today, elementary school classrooms are commonly arranged in pods of desks, the better to foster group learning. Even subjects like math and creative writing are often taught as committee projects. In one fourth-grade classroom I visited in New York City, students engaged in group work were forbidden to ask a question unless every member of the group had the very same question.

Students: Tell us how much group work at school is ideal for you. How much of your learning right now is done as part of a group? What, if anything, would you change? What advice do you have for group members when it comes to potential pitfalls like assigning tasks and making sure everyone contributes equally? How do you make sure all voices are heard? Do you agree with Mr. Wozniak's suggestion of working alone instead of as part of a committee? Why or why not?

The Rise of the New Groupthink
By SUSAN CAIN

SOLITUDE is out of fashion. Our companies, our schools and our culture are in thrall to an idea I call the New Groupthink, which holds that creativity and achievement come from an oddly gregarious place. Most of us now work in teams, in offices without walls, for managers who prize people skills above all. Lone geniuses are out. Collaboration is in.

But there's a problem with this view. Research strongly suggests that people are more creative when they enjoy privacy and freedom from interruption. And the most spectacularly creative people in many fields are often introverted, according to studies by the psychologists Mihaly Csikszentmihalyi and Gregory Feist. They're extroverted enough to exchange and advance ideas, but see themselves as independent and individualistic. They're not joiners by nature.

One explanation for these findings is that introverts are comfortable working alone — and solitude is a catalyst to innovation. As the influential psychologist Hans Eysenck observed, introversion fosters creativity by "concentrating the mind on the tasks in hand, and preventing the dissipation of energy on social and sexual matters unrelated to work." In other words, a person sitting quietly under a tree in the backyard, while everyone else is clinking glasses on the patio, is more likely to have an apple land on his head. (Newton was one of the world's great introverts: William Wordsworth described him as "A mind for ever/ Voyaging through strange seas of Thought, alone.")

Solitude has long been associated with creativity and transcendence. "Without great solitude, no serious work is possible," Picasso said. A central narrative of many religions is the seeker — Moses, Jesus, Buddha — who goes off by himself and brings profound insights back to the community.

Culturally, we're often so dazzled by charisma that we overlook the quiet part of the creative process. Consider Apple. In the wake of Steve Jobs's death, we've seen a profusion of myths about the company's success. Most focus on Mr. Jobs's supernatural magnetism and tend to ignore the other crucial figure in Apple's creation: a kindly, introverted engineering wizard, Steve Wozniak, who toiled alone on a beloved invention, the personal computer.

Rewind to March 1975: Mr. Wozniak believes the world would be a better place if everyone had a user-friendly computer. This seems a distant dream — most computers are still the size of minivans, and many times as pricey. But Mr. Wozniak meets a simpatico band of engineers that call themselves the Homebrew Computer Club. The Homebrewers are excited about a primitive new machine called the Altair 8800. Mr. Wozniak is inspired, and immediately begins work on his own magical version of a computer. Three months later, he unveils his amazing creation for his friend, Steve Jobs. Mr. Wozniak wants to give his invention away free, but Mr. Jobs persuades him to co-found Apple Computer.

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started Apple without Mr. Jobs.

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And yet. The New Groupthink has overtaken our workplaces, our schools and our religious institutions. Anyone who has ever needed noise-canceling headphones in her own office or marked an online calendar with a fake meeting in order to escape yet another real one knows what I'm talking about. Virtually all American workers now spend time on teams and some 70 percent inhabit open-plan offices, in which no one has "a room of one's own." During the last decades, the average amount of space allotted to each employee shrank 300 square feet, from 500 square feet in the 1970s to 200 square feet in 2010.

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The New Groupthink also shapes some of our most influential religious institutions. Many mega-churches feature extracurricular groups organized around every conceivable activity, from parenting to skateboarding to real estate, and expect worshipers to join in. They also emphasize a theatrical style of worship — loving Jesus out loud, for all the congregation to see. "Often the role of a pastor seems closer to that of church cruise director than to the traditional roles of spiritual friend and counselor," said Adam McHugh, an evangelical pastor and author of "Introverts in the Church."

SOME teamwork is fine and offers a fun, stimulating, useful way to exchange ideas, manage information and build trust.

But it's one thing to associate with a group in which each member works autonomously on his piece of the puzzle; it's another to be corralled into endless meetings or conference calls conducted in offices that afford no respite from the noise and gaze of co-workers. Studies show that open-plan offices make workers hostile, insecure and distracted. They're also more likely to suffer from high blood pressure, stress, the flu and exhaustion. And people whose work is interrupted make 50 percent more mistakes and take twice as long to finish it.

Many introverts seem to know this instinctively, and resist being herded together. Backbone Entertainment, a video game development company in Emeryville, Calif., initially used an open-plan office, but found that its game developers, many of whom were introverts, were unhappy. "It was one big warehouse space, with just tables, no walls, and everyone could see each other," recalled Mike Mika, the former creative director. "We switched over to cubicles and were worried about it — you'd think in a creative environment that people would hate that. But it turns out they prefer having nooks and crannies they can hide away in and just be away from everybody."

Privacy also makes us productive. In a fascinating study known as the Coding War Games, consultants Tom DeMarco and Timothy Lister compared the work of more than 600 computer programmers at 92 companies. They found that people from the same companies performed at roughly the same level — but that there was an enormous performance gap between organizations. What distinguished programmers at the top-performing companies wasn't greater experience or better pay. It was how much privacy, personal workspace and freedom from interruption they enjoyed. Sixty-two percent of the best performers said their workspace was sufficiently private compared with only 19 percent of the worst performers. Seventy-six percent of the worst programmers but only 38 percent of the best said that they were often interrupted needlessly.

Solitude can even help us learn. According to research on expert performance by the psychologist Anders Ericsson, the best way to master a field is to work on the task that's most demanding for you personally. And often the best way to do this is alone. Only then, Mr. Ericsson told me, can you "go directly to the part that's challenging to you. If you want to improve, you have to be the one who generates the move. Imagine a group class — you're the one generating the move only a small percentage of the time."

Conversely, brainstorming sessions are one of the worst possible ways to stimulate creativity. The brainchild of a charismatic advertising executive named Alex Osborn who believed that groups produced better ideas than individuals, workplace brainstorming sessions came into vogue in the 1950s. "The quantitative results of group brainstorming are beyond question," Mr. Osborn wrote. "One group produced 45 suggestions for a home-appliance promotion, 56 ideas for a money-raising campaign, 124 ideas on how to sell more blankets."

But decades of research show that individuals almost always perform better than groups in both quality and quantity, and group performance gets worse as group size increases. The "evidence from science suggests that business people must be insane to use brainstorming groups," wrote the organizational psychologist Adrian Furnham. "If you have talented and motivated people, they should be encouraged to work alone when creativity or efficiency is the highest priority."

The reasons brainstorming fails are instructive for other forms of group work, too. People in groups tend to sit back and let others do the work; they instinctively mimic others' opinions and lose sight of their own; and, often succumb to peer pressure. The Emory University neuroscientist Gregory Berns found that when we take a stance different from the group's, we activate the amygdala, a small organ in the brain associated with the fear of rejection. Professor Berns calls this "the pain of independence."

The one important exception to this dismal record is electronic brainstorming, where large groups outperform individuals; and the larger the group the better. The protection of the screen mitigates many problems of group work. This is why the Internet has yielded such wondrous collective creations. Marcel Proust called reading a "miracle of communication in the midst of solitude," and that's what the Internet is, too. It's a place where we can be alone together — and this is precisely what gives it power.

MY point is not that man is an island. Life is meaningless without love, trust and friendship.

And I'm not suggesting that we abolish teamwork. Indeed, recent studies suggest that influential academic work is increasingly conducted by teams rather than by individuals. (Although teams whose members collaborate remotely, from separate universities, appear to be the most influential of all.) The problems we face in science, economics and many other fields are more complex than ever before, and we'll need to stand on one another's shoulders if we can possibly hope to solve them.

But even if the problems are different, human nature remains the same. And most humans have two contradictory impulses: we love and need one another, yet we crave privacy and autonomy.

To harness the energy that fuels both these drives, we need to move beyond the New Groupthink and embrace a more nuanced approach to creativity and learning. Our offices should encourage casual, cafe-style interactions, but allow people to disappear into personalized, private spaces when they want to be alone. Our schools should teach children to work with others, but also to work on their own for sustained periods of time. And we must recognize that introverts like Steve Wozniak need extra quiet and privacy to do their best work.

Before Mr. Wozniak started Apple, he designed calculators at Hewlett-Packard, a job he loved partly because HP made it easy to chat with his colleagues. Every day at 10 a.m. and 2 p.m., management wheeled in doughnuts and coffee, and people could socialize and swap ideas. What distinguished these interactions was how low-key they were. For Mr. Wozniak, collaboration meant the ability to share a doughnut and a brainwave with his laid-back, poorly dressed colleagues — who minded not a whit when he disappeared into his cubicle to get the real work done.

Susan Cain is the author of the forthcoming book "Quiet: The Power of Introverts in a World That Can't Stop Talking."

Group work benefits pupils, study finds
Alexandra Smith
theguardian.com, Friday 31 March 2006 10.11 EST

Young pupils who work in groups learn how to compromise and resolve petty arguments as well as making rapid progress in maths, science and reading, a new study reveals.

The study from the Institute of Education at London University suggests that teachers should act as "guides on the side" of the groups, rather than directly teaching children in the traditional whole-of-class way.

The project, involving more than 4,000 pupils, aged between five and 14, found children who worked together in groups made rapid progress and behaved well.

Pupils became more focused on their work and the amount of thoughtful discussion between children more than doubled in many classes, the study found.

One of the projects' researchers, Ed Baines, said: "Group work serves the learning needs of pupils. What teachers should do is encourage pupils to get over their personal difficulties. Teachers shouldn't dominate a group but support it."

Dr Baines said there was "very little effective group work in schools" and most of it only occurred in PE or social activities outside the classroom.

However, the project's findings have come under fire from the National Association of Schoolmasters Union of Women Teachers, (NASUWT), which accused the researchers of not living in "the real world".

Chris Keates, the NASUWT general secretary, said it was unrealistic to for teachers to "stand back while children argue, shout, cry and storm off".

Parents would be likely to complain when their children reported back what had happened in class, she said.

However, Sally Barnes from the Early Years Curriculum Group, said children should be encouraged to work through problems together.

Ms Barnes said: "The most able teachers get children to work in groups and learn to negotiate their own problems but always with the support of the teacher. A teacher would never walk off, no one would ever do that, but children do learn to be more independent if they work in groups.

"Teachers shouldn't just stand and teach whole class stuff. That's an old-fashioned way of doing things. If children learn in groups consistently, then they really can learn to work together."

Some teachers involved in the study reported that they found it hard not to intervene but one London teacher Jodie Corbett said: "At first we watched and supported groups of children as

they argued, shouted, sulked, cried or even stormed off. We were very tempted to intervene, but the researchers said it was important that the children worked through these difficulties.

"After a while we realised the noise we could hear was actually productive noise. They weren't arguing or talking about last night's EastEnders, they were actively engaged with their work. They can now work together for sustained periods and solve problems together."

The study found science education in junior schools could be transformed by grouping pupils. The results also showed significant improvements in reading and maths in primary schools.

Pupils learned to be more independent and communicate better with each other.

Dr Baines said the project group was not suggesting that teachers should only rely on group work but it should complement whole class and individual learning.

He said: "It's about using group work strategically, not exclusively."

How a Few Bad Apples Ruin Everything

What harm can a handful of nasty or incompetent employees do? A lot more than you may think.

By ROBERT SUTTON
October 24, 2011
Superstars get a lot of attention from bosses. But bad apples deserve even more.

A growing body of research suggests that having just a few nasty, lazy or incompetent characters around can ruin the performance of a team or an entire organization—no matter how stellar the other employees.

Bad apples distract and drag down everyone, and their destructive behaviors, such as anger, laziness and incompetence, are remarkably contagious. Leaders who let a few bad apples in the door—perhaps in exchange for political favors—or look the other way when employees are rude or incompetent are setting the stage for even their most skilled people to fail.

It's crucial for leaders to screen out bad apples before they're hired—and if they *do* slip through the cracks, bosses must make every effort to reform or (if necessary) oust them.

Spreading the Vibes

It's easy to understand why bosses would rather focus on attracting and developing superstars. A mountain of research shows that stars and geniuses can deliver astounding results. And, obviously, it's more fun and inspiring to focus on top-performing, energetic employees.

Serge Bloch
But studies of everything from romantic relationships to workplace encounters show that negative interactions can pack a much bigger wallop than positive ones. The reason is simple: "Bad is stronger than good," as psychologist Roy Baumeister and his colleagues put it. The negative thoughts, feelings and performance they trigger in others are far larger and longer lasting than the positive responses generated by more constructive colleagues.

Consider research on bad apples and team effectiveness by Will Felps, Terence R. Mitchell and Eliza Byington. They examined the impact of team members who were deadbeats ("withholders of effort"), downers (who "express pessimism, anxiety, insecurity and irritation") and jerks (who violate "interpersonal norms of respect"). An experiment by Mr. Felps found that having just one slacker or jerk in a group can bring down performance by 30% to 40%.

How can organizations squash those negative influences? The easiest way, obviously, is to avoid hiring bad apples in the first place—and that means taking a different approach to assessing candidates for jobs.

The usual means of screening are often weak when it comes to determining if a job candidate is a bad apple. Candidates may have gone to the best schools or may come across as charming and brilliant in interviews—thus disguising their laziness, incompetence or nastiness.

That's why one of the best ways to screen employees is to see how they actually do the job under realistic conditions. Akshay Kothari and Ankit Gupta favor that approach. When they're hiring new people for their Palo Alto, Calif., company, Pulse, which makes a news-reading app for mobile devices, they consider evaluations from peers and superiors and do multiple rounds of interviews. But they say the most effective thing is to bring candidates in for a day or two and give them a short job to accomplish. (The candidates are paid for their time.)

Not only do they learn a lot about the candidates' technical skills, Messrs. Kothari and Gupta say, but they also learn about their personality. How do they deal with setbacks? Do they know when to ask for help and to give others help? Is the candidate the kind of person they want to work with? The partners say there have been several candidates who looked great on paper and came highly recommended but weren't offered jobs—because technical and interpersonal weaknesses surfaced during the selection process.

Play Nice or Else

Beyond smarter screening, it's important to develop a culture that doesn't tolerate jerks. The best organizations make explicit their intolerance for bad apples; they spell out which behaviors are unacceptable in the workplace and act decisively to prevent and halt them.

Consider Robert W. Baird & Co., a financial-services firm that has won praise as a great place to work. The company is serious about creating a culture where disrespect and selfishness are unacceptable. They call this the "no jerk rule" (though they use a more colorful word than "jerk").

The company starts sending the message during the hiring process, says CEO Paul Purcell. "During the interview, I look them in the eye and tell them, 'If I discover that you are a jerk, I am going to fire you,' " he says. "Most candidates aren't fazed by this, but every now and then, one turns pale, and we never see them again—they find some reason to back out of the search."

When the company makes a hiring error and brings aboard an employee who persistently demeans colleagues or puts personal needs ahead of others, Baird acts quickly to deal with or expel the bad apple.

Mr. Purcell's crusty approach won't work in every company culture. For an idea of how to handle the task with a more subtle hand, look at renowned chef Alice Waters, who has headed the restaurant Chez Panisse in Berkeley, Calif., for 40 years now.

Biographer Thomas McNamee describes how Ms. Waters's love of people and food has spread to those around her. Along the way, though, many bad apples have been shown the door—but Ms. Waters doesn't hold it open. The process usually starts when one of her colleagues conveys the message that Ms. Waters isn't "entirely pleased." If the hints don't work, then that colleague—or someone else close to Ms. Waters—does the firing.

A spokesman for Chez Panisse says Ms. Waters does personally fire employees on occasion and

"she manages to have that person feel as though they are making the decision to leave and it is better for themselves to move on and explore new opportunities." He also notes that a large percentage of employees have been with the restaurant for decades.

Keeping Them Close

There are times, of course, when an organization can't—or won't—remove a destructive personality. Maybe the person is a star as well as a bad apple, for instance, or is otherwise crucial to the operation. In such cases, leaders might try to use coaching, warnings and incentives to curb the toxic employee's behavior. Another tactic is to physically isolate the bad apple.

In one organization, there was a deeply skilled and incredibly nasty engineer whom leaders could not bring themselves to fire. So, they rented a beautiful private office for him several blocks from the building where his colleagues worked. His co-workers were a lot happier—and so was he, since he preferred working alone.

But beware: Leaders who believe that destructive superstars are "too important" to fire often underestimate the damage they can do. Stanford researchers Charles O'Reilly and Jeffrey Pfeffer report a revealing episode at a clothing retailer. The company fired a top-producing salesman who was a bad apple. After he was gone, none of his former colleagues sold as much as he had. But the store's total sales shot up by nearly 30%. The lesson, according to the researchers: "That one individual brought the others down, and when he was gone, they could do their best."

Mr. Sutton, a professor of management science and engineering at Stanford University, is the author of "Good Boss, Bad Boss: How to Be the Best…and Learn from the Worst." He can be reached at reports@wsj.com.

Rotten to the core: How workplace 'bad apples' spoil barrels of good employees

Look around any organization and chances are you'll be able to find at least one person whose negative behavior affects the rest of the group to varying degrees. So much so, say two University of Washington researchers, that these "bad apples" are like a virus to their teams, and can upset or spoil the whole apple cart.

The researchers' paper, appearing in the current issue of Research in Organizational Behavior, examines how, when and why the behaviors of one negative member can have powerful and often detrimental influence on teams and groups.

William Felps, a doctoral student at the UW Business School and the study's lead author, was inspired to investigate how workplace conflict and citizenship can be affected by one's co-workers after his wife experienced the "bad apple" phenomenon.

Felps' wife was unhappy at work and characterized the environment as cold and unfriendly. Then, she said, a funny thing happened. One of her co-workers who was particularly caustic and was always making fun of other people at the office came down with an illness that caused him to be away for several days.

"And when he was gone, my wife said that the atmosphere of the office changed dramatically," Felps said. "People started helping each other, playing classical music on their radios, and going out for drinks after work. But when he returned to the office, things returned to the unpleasant way they were. She hadn't noticed this employee as being a very important person in the office before he came down with this illness but, upon observing the social atmosphere when he was gone, she came to believe that he had a profound and negative impact. He truly was the "bad apple" that spoiled the barrel."

Following his wife's experience, Felps, together with Terence Mitchell, a professor of management and organization in the Business School and UW psychology professor, analyzed about two dozen published studies that focused on how teams and groups of employees interact, and specifically how having bad teammates can destroy a good team.

Felps and Mitchell define negative people as those who don't do their fair share of the work, who are chronically unhappy and emotionally unstable, or who bully or attack others. They found that a single "toxic" or negative team member can be the catalyst for downward spirals in organizations. In a follow-up study, the researchers found the vast majority of the people they surveyed could identify at least one "bad apple" that had produced organizational dysfunction.

They reviewed a variety of working environments in which tasks and assignments were performed by small groups of employees whose jobs were interdependent or required a great

deal of interaction with one another. They specifically studied smaller groups because those typically require more interaction among members and generally are less tolerant of negative behaviors. Members of smaller groups also are more likely to respond to or speak out about a group member's negative behavior. The two looked at how groups of roughly five to 15 employees in sectors such as manufacturing, fast food, and university settings were affected by the presence of one negative member.

For example, in one study of about 50 manufacturing teams, they found that teams that had a member who was disagreeable or irresponsible were much more likely to have conflict, have poor communication within the team and refuse to cooperate with one another. Consequently, the teams performed poorly.

"Most organizations do not have very effective ways to handle the problem," said Mitchell. "This is especially true when the problem employee has longevity, experience or power. Companies need to move quickly to deal with such problems because the negativity of just one individual is pervasive and destructive and can spread quickly."

According to Felps, group members will react to a negative member in one of three ways: motivational intervention, rejection or defensiveness. In the first scenario, members will express their concerns and ask the individual to change his behavior and, if unsuccessful, the negative member can be removed or rejected. If either the motivation intervention or rejection is successful, the negative member never becomes a "bad apple" and the "barrel" of employees is spared. These two options, however, require that the teammates have some power: when underpowered, teammates become frustrated, distracted and defensive.

Common defensive mechanisms employees use to cope with a "bad apple" include denial, social withdrawal, anger, anxiety and fear. Trust in the team deteriorates and as the group loses its positive culture, members physically and psychologically disengage themselves from the team.

Felps and Mitchell also found that negative behavior outweighs positive behavior — that is, a "bad apple" can spoil the barrel but one or two good workers can't unspoil it.

"People do not expect negative events and behaviors, so when we see them we pay attention to them, ruminate over them and generally attempt to marshal all our resources to cope with the negativity in some way," Mitchell said. "Good behavior is not put into the spotlight as much as negative behavior is."

The authors caution there's a difference between "bad apples" and employees who think outside the box and challenge the status quo. Since these "positive deviants" rock the boat, they may not always be appreciated. And, as Felps and Mitchell argue, unlike "bad apples," "positive deviants" actually help spark organizational innovation.

So, how can companies avoid experiencing the "bad apple" phenomenon?

"Managers at companies, particularly those in which employees often work in teams, should take special care when hiring new employees," Felps said. "This would include checking references and administering personality tests so that those who are really low on agreeableness, emotional stability or conscientiousness are screened out."

But, he added, if one slips through the selection screening, companies should place them in a position in which they work alone as much as possible. Or alternatively, there may be no choice but to let these individuals go.

Cooperative learning

From Wikipedia, the free encyclopedia

Cooperative learning is an educational approach which aims to organize classroom activities into academic and social learning experiences. There is much more to Cooperative Learning than merely arranging students into groups, and it has been described as "structuring positive interdependence."[1][2] Students must work in groups to complete tasks collectively toward academic goals. Unlike individual learning, which can be competitive in nature, students learning cooperatively can capitalize on one another's resources and skills (asking one another for information, evaluating one another's ideas, monitoring one another's work, etc.).[3][4] Furthermore, the teacher's role changes from giving information to facilitating students' learning.[5][6] Everyone succeeds when the group succeeds. Ross and Smyth (1995) describe successful cooperative learning tasks as intellectually demanding, creative, open-ended, and involve higher order thinking tasks.[7] Five essential elements are identified for the successful incorporation of cooperative learning in the classroom.The first and most important element is Positive Interdependence. The second element is individual and group accountability. The third element is (face to face) promotive interaction. The fourth element is teaching the students the required interpersonal and small group skills. The fifth element is group processing. [8]

History

Prior to World War II, social theorists such as Allport, Watson, Shaw, and Mead began establishing cooperative learning theory after finding that group work was more effective and efficient in quantity, quality, and overall productivity when compared to working alone.[9] However, it wasn't until 1937 when researchers May and Doob[10] found that people who cooperate and work together to achieve shared goals, were more successful in attaining outcomes, than those who strived independently to complete the same goals. Furthermore, they found that independent achievers had a greater likelihood of displaying competitive behaviours.

Philosophers and psychologists in the 1930s and 40's such as John Dewey, Kurt Lewin, and Morton Deutsh also influenced the cooperative learning theory practiced today.[11] Dewey believed it was important that students develop knowledge and social skills that could be used outside of the classroom, and in the democratic society. This theory portrayed students as active recipients of knowledge by discussing information and answers in groups, engaging in the learning process together rather than being passive receivers of information (e.g., teacher talking, students listening).

Lewin's contributions to cooperative learning were based on the ideas of establishing relationships between group members in order to successfully carry out and achieve the learning goal. Deutsh's contribution to cooperative learning was positive social interdependence, the idea that the student is responsible for contributing to group knowledge.[11]

Since then, David and Roger Johnson have been actively contributing to the cooperative learning theory. In 1975, they identified that cooperative learning promoted mutual liking, better communication, high acceptance and support, as well as demonstrated an increase in a variety of thinking strategies among individuals in the group.[12] Students who showed to be more competitive lacked in their interaction and trust with others, as well as in their emotional involvement with other students.

In 1994 Johnson and Johnson published the 5 elements (positive interdependence, individual accountability, face-to-face interaction, social skills, and processing) essential for effective group learning, achievement, and higher-order social, personal and cognitive skills (e.g., problem solving, reasoning, decision-making, planning, organizing, and reflecting).[13]

Research evidence

Research on cooperative learning demonstrated "overwhelmingly positive" results and confirmed that cooperative modes are cross-curricular.[26] Cooperative learning requires students to engage in group activities that increase learning and adds other important dimensions.[15] The positive outcomes include academic gains, improved race relations and increased personal and social development.[15] Students who fully participate in group activities, exhibit collaborative behaviors, provide constructive feedback, and cooperate with their groups have a higher likelihood of receiving higher test scores and course grades at the end of the semester.[27] Cooperative learning is an active pedagogy that fosters higher academic achievement.[27] Cooperative learning has also been found to increase attendance, time on task, enjoyment of school and classes, motivation, and independence.[28][29][30][31]

Benefits and applicability of cooperative learning:[18] Students demonstrate academic achievement; Cooperative learning methods are usually equally effective for all ability levels; Cooperative learning is effective for all ethnic groups; Student perceptions of one another are enhanced when given the opportunity to work with one another; Cooperative learning increases self-esteem and self-concept; Ethnic and physically/mentally handicapped barriers are broken down allowing for positive interactions and friendships to occur

Cooperative learning results in:[32] Increased higher level reasoning; Increased generation of new ideas and solutions; Greater transfer of learning between situations; Cooperative learning is significant in business:[16]; Cooperative learning can be seen as a characteristic of innovative businesses; The five stage division on cooperative learning creates a useful method of analyzing learning in innovative businesses; Innovativity connected to cooperative learning seems to make the creation of innovations possible

Limitations

Cooperative Learning has many limitations that could cause the process to be more complicated than first perceived. Sharan (2010) describes the constant evolution of cooperative learning as a threat. Because cooperative learning is constantly changing, there is a possibility that teachers may become confused and lack complete understanding of the method. The fact that cooperative learning is such a dynamic practice means that it can not be used effectively in many situations. Also teachers can get into the habit of relying on cooperative learning as a way to keep students busy. While cooperative learning will consume time, the most effective application of cooperative learning hinges on an active instructor. Teachers implementing cooperative learning may also be challenged with resistance and hostility from students who believe that they are being held back by their slower teammates or by students who are less confident and feel that they are being ignored or demeaned by their team.[11]

Students often provide feedback in the form of evaluations or reviews on success of the teamwork experienced during cooperative learning experiences. Peer review and evaluations may not reflect true experiences due to perceived competition among peers. Students might feel pressured into submitting inaccurate evaluations due to bullying. To eliminate such concerns,

confidential evaluation processes may help to increase evaluation strength.[33]

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