Constructive Controversy: The Educative Power of Intellectual Conflict

David W. Johnson , Roger T. Johnson & Karl A. Smith

CONSTRUCTIVE CONTROVERSY

The Educative Power of Intellectual Conflict

BY DAVID W. JOHNSON, ROGER T. JOHNSON, & KARL A. SMITH

Near the end of the 12th century, the Anasazi built a city on the Colorado Plateau that we call Mesa Verde. Constructed on a cliff, Mesa Verde is a remarkably beautiful city of single- and multi-storied pueblo dwellings that, even today, is one of the most impressive sights in North America. Around 1295, after the Anasazi had lived in it for almost 100 years, the city was abruptly abandoned. In a three- to four-year period, the Anasazi walked away and never came back. Why? No one knows.

Many classes are to students what Mesa Verde was to the Anasazi. Students enroll in a course, pay the tuition, and spend their time attending class sessions, completing assignments, and passing tests. But when the course is over, so is their interest and time with the subject. They walk away and, intellectually, never come back.

Wouldn't it be wonderful if your students got so involved in the subject you teach that they sparkled with energy, became deeply involved in the issues you raised, rushed to the library to get more information and resources, continued rehearsing their arguments over lunch and at night, sought out experts in the field to consult, and impatiently waited for the next class session to begin? What if they continued that interest in what you are teaching in successive semesters and years? How do you get students that involved in your subject? An essential and often overlooked part of the answer is, "Stir up conflict."

Conflict gains attention and holds interest. All drama, for example, hinges on conflict. When playwrights want to gain an audience's attention—stir their interest and emotional involvement—they create a conflict. A general rule for television shows is that if a conflict doesn't emerge in the first 30 seconds, viewers will change the channel.

A general rule of modern novels is that if a conflict is not created within the first three pages of the book, the book will not be successful. There should be a general rule of teaching stating that if an instructor does not create an intellectual conflict within the first few minutes of class, students won't intellec-

David W. Johnson is professor of educational psychology, Roger T. Johnson is professor of education, and Karl A. Smith is the Morse-Alumni Distinguished Professor, civil engineering, at the University of Minnesota.

By passing up conflict, instructors miss out on valuable opportunities to involve students and enhance their learning.

tually engage with the lesson, and their attention may drift off to other things. By passing up conflict, instructors miss out on valuable opportunities to involve students and enhance their learning. An important strategy for all teachers, then, becomes the constructive use of controversy.

When one student's ideas, information, conclusions, theories, or opinions are incompatible with those of another, and the two seek to reach an agreement, then *constructive controversy* exists. When the students seek agreement, but each holds different information and conclusions, their interaction is characterized by both cooperation and conflict. Controversies are resolved by engaging in what Aristotle called "deliberate discourse" (that is, the discussion of the advantages and disadvantages of proposed actions) aimed at achieving novel solutions (that is, "creative problem-solving").

While the controversy process occurs naturally, it may be enhanced by the ways teachers structure it in academic situations. Constructive controversy is an instructional procedure that combines cooperative learning (in which students work together in small groups to develop a report on an assigned topic, for example) with structured intellectual conflict (in which students argue the pro and con positions on an issue in order to stimulate problem-solving and reasoned judgment).

The controversy procedure (which may be used with any issue for which pro and con positions can be developed) may be differentiated from a "controversial issue," which is one for which society has not found consensus, and that is considered so significant that each proposed way of dealing with it has ardent supporters and adamant opponents.

WHAT CONTROVERSY LOOKS LIKE IN THE CLASSROOM

Have you learned lessons only of those who admired you, and were tender with you, and stood aside for you?

Have you not learned great lessons from those who braced themselves against you, and disputed the passage with you?
—Walt Whitman, 1860

Which had the greatest influence on the decline and fall of the Roman Empire: a) the deterioration of the economy after Augustus defined the boundaries of the Roman Empire, thereby limiting Rome's ability to pay its armies, or b) the lack of economic opportunity for the average citizen (who was very poor) because wealth became centered in the hands

of a few people and most jobs were performed by slaves? To examine this issue, students can do one of three things: listen to a lecture about it, discuss it in a group, or engage in a constructive controversy. From the instructor's standpoint, the options are to format a class session as recitation, group discussion, or controversy. (See Table 1.)

In the traditional whole class "recitation format," the instructor asks a student a question, listens to the student response, evaluates the response ("good," "correct," "not quite," "that's interesting"), asks another student a question, and repeats the pattern. Most questions are factual, closed-ended, and have "correct" answers. This format assumes that students are there to master a body of knowledge that reflects accumulated wisdom. An emphasis is placed on a compliant class in which students will be asked sequentially to respond or recite.

In the "group discussion format," the instructor assigns students to small groups, gives them a question to discuss, and facilitates (and moderates) as students exchange ideas, explain and elaborate their views, question and respond to each other, and jointly derive an answer. The questions tend to be open-ended and require higher-level cognitive reasoning to answer; the answers are open to interpretation. Knowledge is assumed to be dynamic and socially constructed. The instructor monitors the groups to facilitate discussion and obtain a "window" into students' minds by listening to their explanations. At its best, this format is cooperative learning (see the July/August 1998 *Change*); at its worst, it is traditional discussion groups.

In the "constructive controversy format," the instructor assigns students to groups of four, divides each group into two pairs, states the issue, and then assigns the task of writing a group report and/or passing a test (given to each member) on the issue in question. The cooperative goal is for each student to reach a deep understanding and "best reasoned judgment" of the issue. One pair is given the assignment of developing and advocating the best case possible for the pro position, while the other pair does the same for the con position. The instructor supervises as the pairs research the issue, construct a persuasive argument for each position, and refute the opposing position while rebutting attacks on their own. After this, the pairs reverse perspectives. They then seek an agreement that synthesizes both positions and represents students' best reasoned judgment. Knowledge is assumed to be dynamic, socially constructed, and best learned through applying and trans-

TABLE 1. CHARACTERISTICS OF VARIOUS TEACHING FORMATS

	Recitation	Group Discussion	Controversy
Coverage	Instructor	Students	Students
Assumptions About Knowledge	Static, reflects accumulated wisdom	Dynamic, socially constructed	Dynamic, socially constructed, applied and transformed
Student Role	Recite knowledge of facts, information	Give thorough explanations of understanding and implications	Transform knowledge into argument, critically analyze positions, view issue from different perspectives, synthesize
Instructor Role	Ask closed-ended questions, listen to and evaluate responses	Pose open-ended questions, structure group discussions, monitor, facilitate	Pose open-ended questions with defined sides, structure controversy, monitor, facilitate

forming it into intellectual arguments and syntheses. The instructor monitors the groups to facilitate discussion and obtain a "window" into students' minds by listening to their arguments, refutations, rebuttals, and perspective reversals.

We use constructive controversy in all of our classes. Any topic can be presented as a controversy so long as at least two sides can be identified. Of the three formats, constructive controversy is the least well known, but it has a clear theory, has been validated in numerous research studies, and has been operationalized into a practical procedure that faculty can use.

An example of a constructive controversy may help. In presenting a unit on civil disobedience, an American history professor notes that in case after case— in the civil rights and antiwar movements, for example—individuals wrestled with the issue of breaking the law (and indeed broke the law) to redress a social injustice. In the past few years, however, prominent public figures have felt justified in breaking laws for individual or political reasons. A starting question, therefore, could be, "Is civil disobedience in a democracy constructive or destructive?" To engage this question fully, students are drawn into extended reading for the necessary background knowledge and examples; they read and ponder, too, common texts, such as the Declaration of Independence, Thoreau's *Civil Disobedience*, Lincoln's speech at Cooper Union, and Martin Luther King, Jr.'s *Letter from Birmingham Jail.*

Students proceed through five steps of constructive controversy. In step one, each pair prepares the best possible case for its assigned position by a) researching the position and learning all relevant information; b) organizing the information into a persuasive argument that contains a thesis statement or claim ("Civil disobedience is a constructive necessity to maintain the integrity and fidelity of a democracy"), the rationale supporting the thesis ("It provides a, b, and c"), and a logical conclusion that is the same as the thesis ("Therefore, civil disobedience is a constructive necessity to maintain the integrity and fidelity of a democracy"); and c) planning how to advocate the assigned position effectively to ensure it receives a fair and complete hearing.

In step two, students present their best case for their assigned position to the other two group members. They need to be forceful, persuasive, and convincing advocates. Ideally, more than one medium is used. Students are to listen carefully to and learn the opposing position, taking notes and clarifying anything they do not understand.

In step three, students engage in an open and free discussion of the issue, arguing forcefully and persuasively for their position (presenting as many facts as they can to support their point of view). They critically analyze the opposing position (its evidence and reasoning), ask for data to support assertions, and refute the opposing position by pointing out inadequacies in the information and reasoning. While doing so, students thoroughly learn the opposing position and give it a "trial by fire." Finally, students rebut attacks on their position.

In step four, students reverse perspectives and present the best case possible for the opposing position. In presenting the opposing

position sincerely and forcefully, students may use their notes and add new facts. All students strive to understand both perspectives of the issue simultaneously.

In step five, students drop all advocacy and strive to find a synthesis on which they can all agree by summarizing the best evidence and reasoning from both sides and integrating it into a joint position that is new and unique. The four students write a group report on their synthesis, including the supporting evidence and rationale. They then individually take a test on both positions, process how well the group functioned, and celebrate the group's success and the hard work of each member.

WHY IS INTELLECTUAL CONFLICT AVOIDED?

Conflict is to student learning what the internal combustion engine is to the automobile. The internal combustion engine unites fuel and air with a spark to create the energy for movement and acceleration. Just as the fuel and air are inert without the spark, so are ideas without the spark of controversy. Conflict provides the motivation that energizes students to seek out new information and study harder and longer. By structuring constructive controversy in a lesson, instructors can grab students' attention and energize them to learn at levels beyond what they ever intended when they signed up for the course.

Far from being a standard instructional procedure in most college classes, however, intellectual conflict is the exception, not the rule. Why? Some instructors avoid creating controversies because they fear losing control of the classroom, and thus losing their own sense of being a good instructor. Others are concerned about their lack of training for conducting academic controversies. Instructors

may avoid the approach because the student involvement and interest can result in animated and somewhat noisy discussion; this contrasts with the view that a good instructor has a well-ordered—that is, quiet—class.

Instructors who do engage students in academic controversy on a consistent basis have succeeded in overcoming such obstacles (as we discuss below). But one more obstacle remains: concerns about coverage. Over-concern with covering the content of a course is based on two problematic assumptions. First, it assumes a body of relatively static knowledge reflecting the accumulated wisdom of experts that must be transferred from the instructor to the students. This conception of knowledge contrasts with the constructivist view (which we share), that individuals develop and shape their own knowledge. Second, it assumes that students must have a full and solid grasp of all the facts first, before they can engage in critical inquiry; the job of the course is to cover the former, with the inquiry left for later. Of course, the inquiry part seldom ever occurs later, just as the facts—crammed into short-term memory, accumulated without context or use—will evaporate later, too. When, however, a course is built around central questions of enduring significance, deeper forms of content learning take root and persist.

HOW CONTROVERSY WORKS

Conflict is the gadfly of thought. It stirs us to observation and memory. It instigates invention. It shocks us out of sheep-like passivity, and sets us at noting and contriving...conflict is a "sine qua non" of reflection and ingenuity.
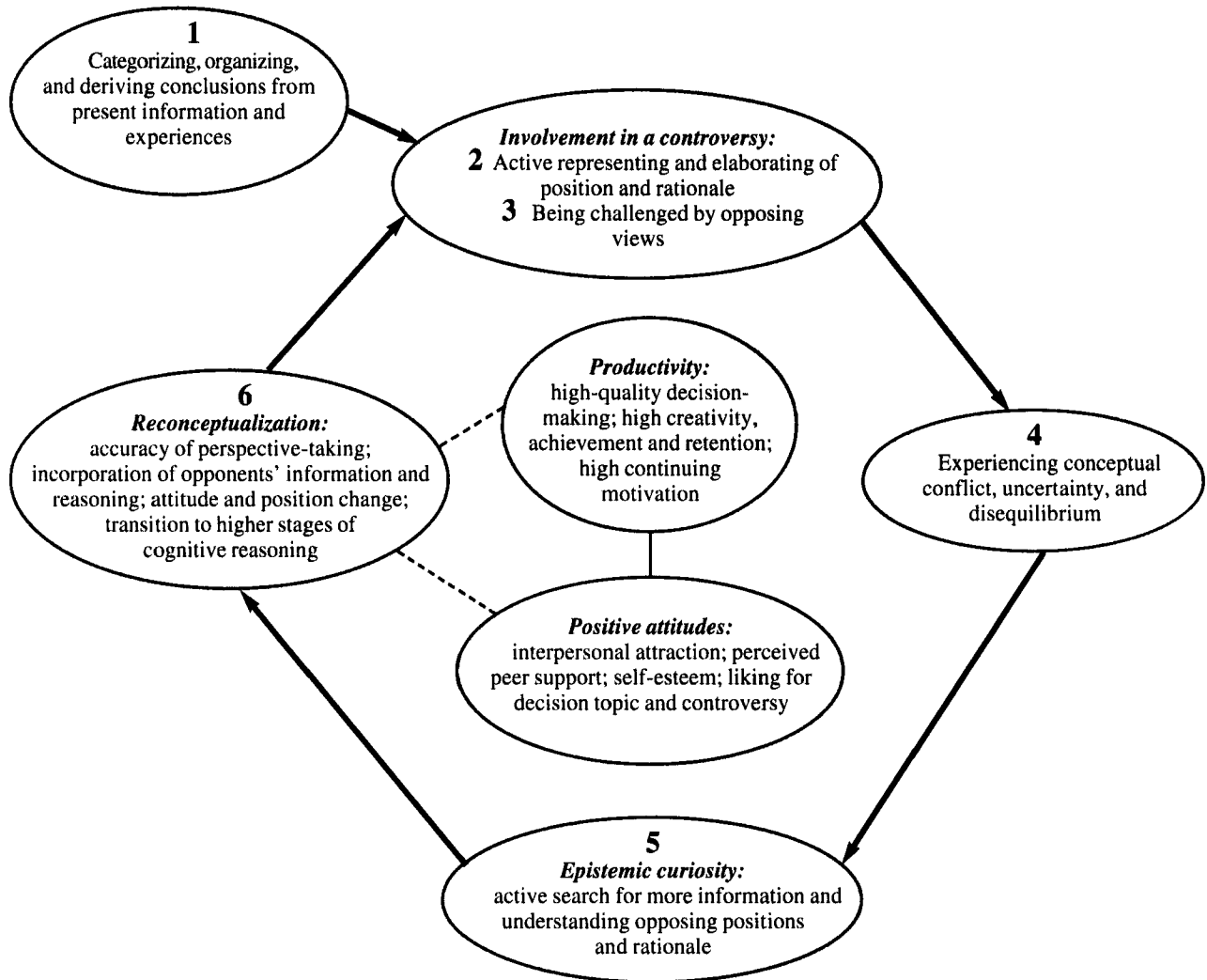—John Dewey

In 1859, Horace Greeley and Henry David Thoreau had a discussion about John Brown's exploits at Harper's Ferry.

"No matter how well intended John Brown was," Greeley said, "his methods were completely unacceptable. The man broke the law! Terrorism for a good cause is still terrorism. It does not follow that because slavery is wrong, John Brown's actions were right. No matter how opposed to slavery one is, one cannot condone what John Brown did."

"Now Horace," Thoreau replied, "you are missing the whole point. It does not matter whether John Brown broke the law or not. It only matters what he symbolizes. And he symbolizes eternal justice, glory, and devotion to principle. We should pay homage to the ideals John Brown represents, not get caught in a mundane discussion of legalities."

Thomas Jefferson would have applauded this exchange; he had a deep faith in the value

CHART 1. THE PROCESS OF CONTROVERSY

1
Categorizing, organizing, and deriving conclusions from present information and experiences

Involvement in a controversy:
2 Active representing and elaborating of position and rationale
3 Being challenged by opposing views

6
Reconceptualization:
accuracy of perspective-taking; incorporation of opponents' information and reasoning; attitude and position change; transition to higher stages of cognitive reasoning

Productivity:
high-quality decision-making; high creativity, achievement and retention; high continuing motivation

4
Experiencing conceptual conflict, uncertainty, and disequilibrium

Positive attitudes:
interpersonal attraction; perceived peer support; self-esteem; liking for decision topic and controversy

5
Epistemic curiosity:
active search for more information and understanding opposing positions and rationale

Source: Johnson, D.W., and R. Johnson, *Creative Controversy: Intellectual Challenge in the Classroom*, Edina, MN: Interaction Book Company, 1995. Reprinted by permission.

and productiveness of conflict. In the 20th century, a number of theorists have pointed out the value of conflict, including Piaget, Kohlberg, Berlyne, Bruner, and Hoffman. Much of what they have had to say is subsumed in the following process, represented by Chart 1.

When students are presented with a problem or decision, they make an initial conclusion based on the information at hand, their limited experiences, and their specific perspective. They often have a high degree of confidence in such conclusions and, consequently, freeze the epistemic process.

When required to present their conclusions and rationale to others with different positions, however, students engage in cognitive rehearsal, use higher-level reasoning strategies, and deepen their understanding of their positions. When listening to the conclusions and

reasoning of classmates, students become less certain still about the correctness of their views. As a state of conceptual conflict or disequilibrium develops, they unfreeze their epistemic process. Students then become curious; they search for a) more information and new experiences (increased specific content) and b) a more adequate cognitive perspective and reasoning process (increased validity) in hopes of resolving the uncertainty. This motivation to learn more is called "epistemic curiosity."

Finally, students derive a new, reconceptualized, and reorganized conclusion by accommodating the perspective and reasoning of others and by adapting their own perspective and reasoning. They create novel solutions and decisions that are qualitatively better than their initial conclusion.

Perhaps it is this process that Edmund Burke (*Reflection on the Revolution in France*)

Conflict is to student learning what the internal combustion engine is to the automobile.

had in mind when he said, "He that wrestles with us strengthens our nerves, and sharpens our skill. Our antagonist is our helper."

How Students Benefit

Over the past 30 years, we have conducted a systematic series of research studies to discover the consequences of controversy. In our research, we compared constructive controversy with debate (in which students present different positions and a judge determines who presented best), concurrence-seeking (in which students inhibit discussion to avoid any disagreement and compromise quickly to reach a consensus), and individualistic learning (in which students work independently with their own set of materials at their own pace) (see Table 2).

Our first concern, of course, was the quality and quantity of learning, decision-making, and problem-solving. What we found is that the intellectual challenge inherent in constructive controversy results in the use of higher-level reasoning strategies, the development of more complex and coherent conceptual structures, and more critical thinking. All this leads to greater subject learning, more accurate retention, higher-quality decisions, and sounder, more creative solutions to complex problems (for which different points of view can plausibly be developed).

In a meta-analysis of the available research, we found that controversy produced higher achievement than did concurrence-seeking (ES = 0.68), debate (ES = 0.40), or individualistic learning (ES = 0.87). In controversy classrooms, students tended to use higher-level reasoning strategies more frequently than participants in classes using concurrence-seeking (ES = 0.62), debate (ES = 1.35), or individualistic efforts (ES = 0.90).

One of the most rewarding aspects of watching students engaged in a constructive controversy is observing the creativity of their thought. In a human relations class, for example, when one person assumes the position that affirmative action programs are no longer constructive and another person argues that affirmation action programs are more necessary than ever, what results is a thorough examination of both points of view and a number of creative solutions to the problem of equalizing the playing field for everyone. Compared to concurrence-seeking, debate, and individualistic learning, controversy increases the number, range, and quality of ideas. No matter how many times we facilitate a controversy, students still surprise us with new solutions and novel conclusions.

Controversy arouses curiosity. In our studies, for example, we found that students involved in controversy read more library materials, reviewed more classroom materials, more frequently watched an optional movie, and more frequently requested information from others. Students engaged in a controversy tend to be more motivated to learn more about the issue and come to the best reasoned judgment possible than do participants engaged in concurrence-seeking (ES = 0.75), debate (ES = 0.45), or individualistic efforts (ES = 0.71).

Students involved in a controversy tend to search for a) more information and new experiences (increased specific content) and b) a more adequate cognitive perspective and reasoning process (increased validity) in hopes of resolving their uncertainty. There is also a more active interest in learning others' positions and developing an understanding and appreciation of diverse points of view.

Another of our favorite outcomes resulting from participation in a constructive controversy is greater sophistication in thinking about an issue. Being sophisticated means that one can see the world, events, and issues from a variety of perspectives. Students participating in a controversy a) learn the opposing perspective more accurately and completely and b) increase their perspective-taking skills more than do students participating in concurrence-seeking, debates, or individualistic learning. They also experience greater attitude and position change. The combination of perspective-taking accuracy and attitude change results in a broader, more complex view of the issue.

A common misperception is that conflict will create divisiveness, hostility, and ill will among participants. Controversy entails disagreement, argumentation, and rebuttal, which could create difficulties in establishing

TABLE 2. META-ANALYSIS OF STUDIES COMPARING CONSTRUCTIVE CONTROVERSY WITH OTHER TEACHING FORMATS (AVERAGE EFFECT SIZE)

Dependent Variable	Mean	sd	n
Quality of Decision-Making/Achievement			
Controversy / Concurrence-Seeking	0.68	0.41	15
Controversy / Debate	0.40	0.43	6
Controversy / Individualistic Efforts	0.87	0.47	19
Cognitive Reasoning			
Controversy / Concurrence-Seeking	0.62	0.44	2
Controversy / Debate	1.35	0.00	1
Controversy / Individualistic Efforts	0.90	0.48	15
Perspective-Taking			
Controversy / Concurrence-Seeking	0.91	0.28	9
Controversy / Debate	0.22	0.42	2
Controversy / Individualistic Efforts	0.86	0.00	1
Motivation			
Controversy / Concurrence-Seeking	0.75	0.46	12
Controversy / Debate	0.45	0.44	5
Controversy / Individualistic Efforts	0.71	0.21	4
Attitudes			
Controversy / Concurrence-Seeking	0.58	0.29	5
Controversy / Debate	0.81	0.00	1
Controversy / Individualistic Efforts	0.64	0.00	1
Interpersonal Attraction			
Controversy / Concurrence-Seeking	0.24	0.44	8
Controversy / Debate	0.72	0.25	6
Controversy / Individualistic Efforts	0.81	0.11	3
Debate / Individualistic Efforts	0.46	0.13	2
Social Support			
Controversy / Concurrence-Seeking	0.32	0.44	8
Controversy / Debate	0.92	0.42	6
Controversy / Individualistic Efforts	1.52	0.29	3
Debate / Individualistic Efforts	0.85	0.01	2
Self-Esteem			
Controversy / Concurrence-Seeking	0.39	0.15	4
Controversy / Debate	0.51	0.09	2
Controversy / Individualistic Efforts	0.85	0.04	3
Debate / Individualistic Efforts	0.45	0.17	2

Note: For a more complete analysis, see Johnson, D.W., and R. Johnson, *Creative Controversy: Intellectual Challenge in the Classroom*, Edina, MN: Interaction Book Company, 1995.

O*ne of the most rewarding aspects of watching students engage in a constructive controversy is observing the creativity of their thought.*

> **C**onstructive
>
> *controversy requires*
>
> *that cooperation*
>
> *dominate the*
>
> *context and that*
>
> *individuals have*
>
> *the skills to use*
>
> *the controversy*
>
> *procedure effectively.*

good relationships. Constructive controversy, however, has been found to promote greater liking among participants than either concurrence-seeking (ES = 0.24), debate (ES = 0.72), or individualistic efforts (ES = 0.81). Debate tends to promote greater interpersonal attraction among participants than do individualistic efforts (ES = 0.46).

In addition, constructive controversy tends to promote greater social support among participants than does concurrence-seeking (ES = 0.32), debate (ES = 0.92), or individualistic efforts (ES = 1.52). Debate tends to promote greater social support among participants than do individualistic efforts (ES = 0.85). When students like each other, and feel greater personal and academic support from each other, they tend to achieve at a higher level and value being part of the class.

Not only do students who participate in a controversy like each other better, they also like themselves better. Constructive controversy tends to promote higher self-esteem than does concurrence-seeking (ES = 0.39), debate (ES = 0.51), or individualistic efforts (ES = 0.85). Debate tends to promote higher self-esteem than does individualistic learning (ES = 0.45).

Finally, our research indicates that students participating in a controversy had more positive attitudes toward the class and the instructional experience than did students engaged in concurrence-seeking discussions, debate, or individualistic learning. Engaging in a controversy can be fun, enjoyable, and exciting. As Samuel Johnson once stated, "I dogmatize and am contradicted, and in this conflict of opinions and sentiments I find delight."

KEY ELEMENTS

Although controversies can operate in highly beneficial ways, they will not do so automatically. The conditions under which controversy results in positive consequences include the context within which the controversy takes place and the level of participants' social skills.

There are two possible contexts for controversy: cooperative and competitive. Our research demonstrates that in a cooperative context, controversy induces more complete and accurate understanding of the opponent's position (and feelings) and greater utilization of others' information.

More importantly, there is more open-minded listening to the opposing positions, greater motivation to hear more about the opponent's arguments, and a more frequent seeking out of individuals with opposing opinions to test the validity of ideas. It is no surprise, therefore, that in a cooperative con-

text participants feel more comfortable in discussing opposing positions and create new positions that include both their own and the opponent's perspectives.

In competitive contexts, by contrast, controversy tends to promote closed-minded rejection of the opponent's ideas and of the opponent as a person.

For controversies to be managed constructively, participants need collaborative and conflict-management skills. Our research has focused on two skills.

The first is disagreeing with another's ideas while confirming his or her personal competence. Disagreeing with others while implying that they are incompetent tends to increase their commitment to their own ideas and their rejection of their opponent's information and reasoning. Disagreeing with others while simultaneously confirming their personal competence, however, results in greater liking of the opponent, a less critical view of his or her ideas, greater interest in learning more about those ideas, and more willingness to incorporate them into their own analysis of the problem.

The second skill is perspective-taking. More information—both personal and impersonal—is disclosed and is comprehended more accurately when participants engage in perspective-taking behaviors such as paraphrasing. Engaging in a controversy tends to promote greater understanding and retention of others' perspectives, which facilitates creative, high-quality problem-solving and promotes liking for the opponents.

When controversy takes place in a competitive context among unskilled individuals who make personal attacks and have an egocentric view of the issue, it is not constructive. Constructive controversy requires that cooperation dominate the context and that individuals have the skills to use the controversy procedure effectively. At the very least, individuals must be able to criticize another person's ideas while confirming his or her competence and worth, and to see the issue from all perspectives.

ADDITIONAL BENEFITS

The use of constructive controversy has important benefits beyond its effects on achievement, reasoning, relationships, and attitudes. Constructive controversy teaches students basic academic competencies that differentiate a college graduate from someone who has not attended college. These competencies include the ability to research an issue and create a coherent summary of what is known, structure an intellectual argument, give a persuasive and convincing presentation

of one's views, critically analyze positions, give a well-conceptualized and thoughtful refutation of opposing positions (based on challenging their information and logic), give a well-conceptualized rebuttal of others' refutations of one's position, view an issue from a variety of perspectives, and synthesize diverse positions.

These competencies are also basic citizenship skills in a democracy. Thomas Jefferson, James Madison, and the other Founding Fathers believed that free and open discussion—not the social rank within which a person was born—should serve as the basis of influence within society. This free and open discussion was to be characterized by conflict among ideas and opinions, open-minded consideration of all points of view, and changing one's mind in order to find the best action to take for the good of the country as a whole.

Jefferson noted, "Differences of opinion lead to inquiry, and inquiry to truth." Madison described political discourse as a) including open-minded consideration of other points of view ("much is gained by a yielding and accommodating spirit") and b) keeping conclusions tentative by realizing that one's current knowledge is not the whole truth (no citizen is "obligated to retain his opinions any longer than he is satisfied of their propriety and truth"). Even today, we proclaim that it is the ability of citizens to make thoughtful, reasoned judgments that lies at the heart of democracy. We know of no better way to teach such abilities directly than through the steps outlined in this article.

LEAVING AN IMPRINT

How you ride a horse leaves an imprint that can be detected by a skilled trainer. Some indicators are fairly obvious. If the horse has well-developed muscles underneath its neck, then the rider habitually pulled back on the reins. If the horse has well-developed muscles on the top of its neck, then the rider held the reins loosely and moved the horse forward with his or her seat and legs. More subtle imprints can be detected only when the trainer rides the horse. By the way the horse moves, a good trainer can tell who was the last person to ride it.

The methods we use to teach leave an imprint on students. From the way students act at the beginning of a class, we can tell a great deal about the professors who taught them previously. Whether your students sit passively and are interested only in what will be on the test, or volunteer their conclusions and engage in spirited disagreement, you know a great deal about who taught them before.

What impact would you like to leave on your students? For each of us, this is a very personal question that gets to the heart of why we became professors in the first place. How we teach does leave an imprint. If we frequently use recitation, students are imprinted with a pattern of listening carefully, waiting to be called on, and giving factual answers that the professor likes. If we frequently use group discussion, students are imprinted with a pattern of active participation, jointly considering higher-level questions, exchanging ideas, and utilizing each other's thinking. If we frequently use constructive controversy, students are imprinted with a pattern of intellectual inquiry that includes building coherent intellectual arguments, giving persuasive presentations, critically analyzing and challenging others' positions, rebutting others' challenges, seeing issues from a variety of perspectives, and seeking reasoned judgments.

Of the three formats, constructive controversy may be the most complex to use, but it is the most promising in its results.

For more information about this topic, the authors refer readers to two of their other works:

• Johnson, D.W., R. Johnson, and K. Smith. *Academic Controversy: Enriching College Instruction Through Intellectual Conflict*, ASHE-ERIC Higher Education Report, Vol. 25, No. 3, Washington, DC: The George Washington University, Graduate School of Education and Human Development, 1997.

• Johnson, D.W., and R. Johnson. *Creative Controversy: Intellectual Challenge in the Classroom*, Edina, MN: Interaction Book Company, 1995.