Constructive Controversy: A Learner Centered Teaching Strategy

Confronting racism and bigotry in real life contexts requires practiced knowledge and skill. Helping learners develop their abilities to effectively manage conflict should be an explicit component of curriculums. Constructive controversy is one of the most effective learner centered methods for: a) building conflict management and discourse skills; b) enhancing creativity and innovation, and c) supporting complex decision-making skills. Constructive controversy exists when one person's ideas, information, conclusions, theories, and opinions are incompatible with those of another, and the two seek to reach an agreement that reflects their best reasoned judgment (Johnson & Johnson, 2014). As an in-person or online instructional strategy, constructive controversy is a form of inquiry-based advocacy. Within the strategy, advocacy consists of actions by an individual or group that aim to influence positions and decisions (Ou, Chen, Li, & Tang, 2018). And, inquiry is a process that investigates a concept or issue in order to build knowledge, resolve doubt, or solve a problem.

One of the core elements of the constructive controversy method is that it requires accounting for different perspectives and understanding why others hold their various positions which can result in an increase in knowledge and ability to work through unscripted challenges (O'Neill, Hancock, McLarnon, & Holland, 2019). On a societal level, our democracy is dependent on the ability of citizens to engage in critical thinking and flexible problem solving (Johnson, Johnson, & Smith, 2014). It is critical that citizens are able to evaluate arguments and counterarguments within the contexts of their local, regional, and national level communities. Educational experiences must therefore prepare learners to competently engage in constructive intellectual conflict at all levels of human interaction. Further, given the historic and current state of racial, social, and economic inequities, we can't only teach learners about equity and justice. We must help them develop the cognitive frameworks and dialectic skills to engage in deliberate problem-solving discourses to dismantle oppression and racism while building justice and equity (Johnson, Johnson, & Smith, 2014; O'Neill, Hoffart, McLarnon, Woodley, Eggermont, Rosehart, & Brennan, 2017).

In constructive controversy, individuals research their position, present the best case they can for it, challenge the opposing positions, step back and see the issue from all sides, and then arrive at their best reasoned judgment. Constructive controversy is structured by:

A. Establishing a cooperative context (i.e., structuring positive interdependence). Participants to come to an agreement (i.e., one answer) that reflects their best reasoned

judgment as to solution to the problem, the best course of action to take to solve the problem, or an answer.

B. Establishing the constructive controversy procedure. Participants are required to (1) research and prepare a position; (2) present and advocate their position; (3) analyze, critically evaluate, and (often after further research) refute the opposing positions while rebutting criticisms of one's own positions; (4) reverse perspectives to communicate that they can see the issue from all points of view; and (5) synthesize and integrate information into factual and judgmental conclusions that are summarized into a joint position to which all sides can agree (Johnson & Johnson, 2007). This is an advocacy-based-inquiry procedure. In engaging in this procedure, participants advocate a position and challenge opposing positions to gain increased.

C. Constructing a number of roles and that each participant has a chance to assume them adequately: researcher, advocate, devil's advocate, learner, perspective taker, and synthesizer.

D. Participants adhering to a set of normative expectations. Participants need to follow and internalize the norms of seeking the best reasoned judgment, not winning; being critical of ideas, not people; listening to and learning everyone's position, even if they do not agree with it; differentiating positions before trying to integrate them; and changing their mind when logically persuaded to do so.

The research findings that support constructive controversy as an instructional method are robust. For example, the data in Table 1 are from a quantitative meta-analysis conducted by David and Roger Johnson (2007). Meta-analysis is a statistical process that combines the analysis results from individual studies for the purpose of integrating the findings, identifying trends, and deriving conclusions about a body of research. In this case, the meta-analyses included the findings from a sample of research studies that looked at the use of constructive controversy in comparison to concurrence seeking, debate, and individualistic instructional strategy scenarios.

The numbers in Table 1 represent weighted effect sizes that were computed using Hedges' unbiased estimator g (Hedges' g). An effect size (ES) is the name given to a family of indices that measure the magnitude of interventions. In general, the larger the effect size, the more impact the treatment or relationship being researched had on the dependent variable (e.g., achievement, motivation, cognitive reasoning) of interest. Hedges' g is a useful, way of expressing effect sizes. However, as a statistic it may be less intuitively understandable than statistical measures like R^2 because it doesn't range from 0 to 1 (Or -1 to 1) with 0 meaning no effect and 1 meaning maximum effect (Lin & Aloe, 2021).

With respect to the data illustrated in Table 1, a negative Hedges' g effect size would indicate worse realized outcomes for constructive controversy group subjects than outcomes realized for debate, concurrence seeking, and individualistic effort group subjects in the studies included in the meta-analysis. Conversely, the observed positive Hedges' g weighted effect size values illustrated in Table 1 indicate that the constructive controversy strategies included in the meta-analysis studies worked better than the debate, concurrence seeking, and individualistic

effort strategies in relationship to the dependent variables listed in Table 1. The Hedges' g effect sizes listed in Table 1 provide estimates of the relative effects the constructive controversy strategies had on the realized favorable dependent variable outcomes in comparison to the outcomes of the debate, concurrence seeking, and individualistic effort strategies.

Hedges' g weighted effect sizes with values between 0.2 - 0.5 are considered small, values between 0.5 - 0.8 are considered medium, and values greater than 0.8 are considered large (Hedges & Olkin, 1985). If a Hedges' g weighted effect size is greater than 1, the difference between the means analyzed in the meta-analysis is larger than one standard deviation, a Hedges' g effect size greater than 2 means that the difference is larger than two standard deviations. Meaning, the data in Table 1 indicate that, as a teaching strategy, constructive controversy is well supported as an instructional method by a body of validating research.

Table 1. Meta-Analysis Weighted Effect Sizes for Academic Controversy Studies

Dependent Variable	Controversy / Concurrence Seeking	Controversy / Debate	Controversy / Individualistic Efforts
Achievement	0.68	0.40	0.87
Cognitive Reasoning	0.62	1.35	0.90
Perspective Taking	0.91	0.22	0.86
Motivation	0.75	0.45	0.71
Attitudes Towards Task	0.58	0.81	0.64
Interpersonal Attraction	0.24	0.72	0.81
Social Support	0.32	0.82	1.52
Self-Esteem	0.39	0.51	0.85

Adapted from: Johnson, D.W., Johnson, R. (2007). *Creative controversy: Intellectual conflict in the classroom*. Edina, MN: Interaction Book Company.

At a personal level, I've conducted two small research studies using constructive controversy within college of agriculture and college of engineering courses of study. The first inquiry (Spindler & Simpson, 2017) was a phenomenological study used to describe the essential structure of the lived experience of students of color in heterogeneous cooperative learning teams. In-depth interviews were conducted with six female and three male students participating in a large course of study (N > 100) employing a series of constructive controversy learning activities. The findings revealed positive outcomes for participants around the themes of personal agency; interpretation of tasks; and reconciling interpersonal meanings. Recommendations included explicitly teaching all students about using controversy or conflict as a constructive tool and employing strategies for building appreciation for difference and the perspectives of others.

The second study (Spindler & Cherbaka, 2016) used a series of cooperative group problem solving activities to prepare students for an end of semester cooperative team dynamic problem solving simulation. Cooperative teams were randomly assigned to: 1) complete a series of problem solving activities that included constructive controversy elements or 2) complete similar series of problem solving activities that didn't include constructive controversy elements. A matched-sample t test revealed that the inclusion of constructive controversy elements had a significant impact on achievement during the cooperative dynamic problem solving simulation. Further, individuals on cooperative teams that experienced the constructive controversy elements held more positive beliefs about working cooperatively with others and learning about the perspectives of others.

Tips for folks interested in using constructive controversy include:
1) help students further develop their active listening skills by modeling and using brief case studies they're able to discuss in their constructive controversy small groups.
2) Help students structure their roles and responsibilities by explicitly outlining them in learning activity directions and examples. The explicit information will reduce ambiguity and allow students to have more focus on substantive tasks and interactions.
3) Take a semester long approach. Start with short low stakes learning activities that are more oriented toward building an understanding of how to manage cooperatively working through controversy and offer opportunities for students to give and receive constructive feedback from peers to build their skills.

A strong research and policy discourse has emerged in recent years around how learning systems might be reoriented to foster the emergence of researchers and professionals who can lead and work seamlessly within and across diverse teams. Helping college of agriculture students understand how to analyze social contexts and cooperate constructively despite conflicting ideas and perspectives will help them to attain the social and intellectual capital they will need to navigate the workplace environment and be successful in their professional roles. The implementation of constructive controversy strategies offers one way to build those learning opportunities for students.

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