# Improving Argumentative Skills in Education: Three Online Discussion Tools

Jan Albert van Laar

#### 1. Introduction

How can we foster sound argumentation and valid criticism in the classroom? How, for example, can teachers help students to avoid fallacies, or withstand peer pressure, and how can they assist students in producing arguments that are responsive to relevant criticisms? In this paper, I present a set of educational tools for online discussion, provide a philosophical motivation for them, and try to make it plausible that they are useful when training skills in critical thinking and argumentation.

More in particular, this paper deals with software applications that enable students to engage in quite different forms of argumentative discussion, to gain experience with analysing, evaluating and producing argumentation within these different settings, and to provide them with opportunities to create awareness of the advantages and disadvantages of engaging in the various kinds of discussion. With the software application for *Deliberative Debate*, students exchange arguments with the aim of supporting their standpoints. With the software application *Middle Ground*, students develop compromise solutions, and the reasons for settling on a policy that matches nobody's standpoint but that is for each at best a second preference. The software *Design a Discussion Yourself* enables advanced students and teachers to themselves design a discussion procedure, to invite students to engage in a session of this type of discussion, and to assess process, procedure and outcome of the discussion session.

There's no question that discussions provide natural habitats for arguments and criticisms. But here, I start from three further assumptions. *First*, that any

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Jan Albert van Laar, *Improving Argumentative Skills in Education: Three Online Discussion Tools*, pp. 87-98, © 2021 Author(s), CC BY 4.0 International, DOI 10.36253/978-88-5518-329-1.09, in Adelino Cattani, Bruno Mastroianni (edited by), *Competing, cooperating, deciding: towards a model of deliberative debate*, © 2021 Author(s), content CC BY 4.0 International, metadata CC0 1.0 Universal, published by Firenze University Press (www.fupress.com), ISBN 978-88-5518-329-1 (PDF), DOI 10.36253/978-88-5518-329-1

argument is dialogical in nature, and can best be understood as a dialogical sequence made up from thesis from a proponent, one or more challenges from one or more opponents, and a response from the proponent that answers these challenges. From this stance, each argument, also when voiced by one person, can be seen as a critical exchange that responds to or anticipates critical moves. *Second*, that the appropriate norms with which to evaluate arguments and criticisms are conversational norms, rather than, for example, intrapersonal epistemic norms or impersonal metaphysical norms. *Third*, that some well-known problems of group deliberation, such as the tendency to polarize, can be countered by incorporating argumentative exchanges within the design of the deliberation. From this dialogical viewpoint, it is natural to expect that students will best learn to analyse, evaluate and produce arguments by engaging in argumentative discussions.

In Section 2, I provide a dialogical account of sound arguments and criticisms. In Section 3, I discuss two types of argumentative dialogue: a persuasion dialogue requires arguments and criticisms for resolving a disagreement on the merits of the case; a negotiation dialogue requires arguments and criticisms for developing a reasonable compromise solution. Such dialogue types, and mixtures of them, can be implemented in discussion procedures. In Section 4, I explain how software applications provide an opportunity for students to engage in, and think about, a discussion procedure for persuasion dialogue, called *Deliberative Debate*, and one for negotiation dialogue, called *Middle Ground*, and how a third software application enables teachers to experiment with the design of new discussion procedures. Finally, I sketch how these applications can be helpful in teaching argumentative and critical thinking skills.

# 2. Argumentation and criticism from a dialogical point of view

Someone who presents an argument, presents its premises as providing *prima* facie good reasons for its conclusion. This argumentative appeal to reasonableness can be explained in, for example, logical, epistemological, or rhetorical terms. The arguer can be seen as appealing to the logical validity of the reasoning. Or, as appealing to the premises and conclusion as being epistemically justified. Or, as appealing to the argument's being adapted to the perspectives of the audiences addressed, and the occasion at hand.

Here, I will flesh out the appeal to reasonableness from a *dialogical* viewpoint: the arguer is seen as appealing to the premises and the connection between premises and conclusion as being worthy of the acceptance by critical interlocutors. Argumentation then is seen as a dialogical sequence where a proponent adopts a thesis and provides justifying reasons in response to one or more critical challenges or objections from (real or imagined) opponents. <sup>1</sup> I provide some

<sup>&</sup>lt;sup>1</sup> A number of classical references to the dialogical (often labelled «dialectical») approach to argumentation are: Hamblin 1970; Barth and Krabbe 1982; Walton and Krabbe 1995; van Eemeren and Grootendorst 2004; van Eemeren 2010.

details about this dialogical approach to argumentation by sketching three of its virtues: it enables a plausible analysis of the structure of argumentation; it provides argumentative norms that are ambitious yet realistic; and it provides tools for mitigating some well-known epistemic problems of group deliberation.

## The analysis of argumentation

One virtue of the dialogical approach to argumentation is that it provides a functional analysis of the premise-conclusion structure of single arguments, and of more complex configurations of arguments. An argument, according to this view, is produced within a dialogue between a proponent of a thesis (or standpoint) and an opponent who doubts and possibly also rejects this thesis. When the proponent responds to a critical challenge or objection by making an assertion that is meant to take away or mitigate this doubt, or to defuse the objection, this assertion functions as a reason in support of his thesis, and the reasoning thus produced within the dialogue forms a single argument. Argumentation is a device with which to resolve a disagreement on what the participants regard as the merits of the case.

When an opponent challenges a premise or the argumentative connection of an argument presented to her, the proponent is invited to extend on this argument and to develop a less or more complex configuration of several arguments, each of which having a specific function in responding to a specific kind of critical move by the opponent addressed. The main assumption of the dialogical approach is that arguments can be fruitfully seen as resulting from such an altercation between a proponent and at least one opponent, also when the argument is found within a speech, article, or monograph, or even within private deliberation, in which cases the argumentation can be seen as produced in a discussion that remains implicit in so-far as the opponent's moves are concerned (van Eemeren and Grootendorst 2004).

## The evaluation of argumentation

A second virtue of the dialogical approach is that it points to a plausible collection of rules for argumentative exchanges that includes ambitious regulative rules that express a regulative ideal of a resolution oriented discussion, as well as realistic constitutive rules that implement and operationalize the regulative ideal. Examples of such regulative rules (or norms) are: the rule that premises should be true or worthy of acceptance; the rule that argumentative connections should be valid or sufficiently reliable; and the rule that the words used to express arguments should not be confusingly ambiguous within the context of utterance. When presenting argumentation, an arguer plausibly appeals to his or her arguments as contributing to a correct or optimal resolution of the disagreement on the real merits of the case at issue. Any sequence of dialogical moves governed by such resolution oriented regulative rules, whether really or

allegedly so, is a *critical exchange* (cf. on the rules for critical discussion: van Eemeren and Grootendorst 2004).

However, it may be unclear for, or controversial among, the parties whether a particular contribution conforms to such regulative rules, in which case they don't know whether they engage in a critical exchange, or disagree about whether they abide by these regulative rules. For that reason, it is useful to distinguish these regulative rules from the kind of dialogue rules that are constitutive of a critical exchange. The constitutive rules implement, operationalize and embody the regulative ideal of a critical exchange, yet they are formulated at a level of specificity that enables the participants to determine in a relatively uncontroversial manner whether any of their moves is in accordance with these constitutive rules. I refer to such a collection of constitutive rules for critical exchange as a discussion procedure.

For example, the regulative ideal of only advancing true premises and reliable connections can be implemented by means of followable, constitutive rules that provide interlocutors with the right to request for a reason when suspecting that a premise or connection does not merit her acceptance, combined with a responsibility for the party thus requested to make a statement that counts as a supporting reason. Similarly, the regulative ideal of clear and univocal language can be specified by easy to follow rules that provide an opponent the right to identify an alleged case of confusing ambiguity and a *prima facie* obligation for the proponent to clarify or disambiguate the expression at issue in response. Such constitutive rules can be seen as specifications or operationizations of the regulative rules, and as providing straightforward guidance for discussants who need to make progress with limited capacities and resources. In short, the dialogical approach offers procedural solutions to the problem of how to evaluate argumentation.

#### Dealing with some failures of deliberating groups

A third virtue is that critical exchanges are useful for lessening or solving a number of well-studied problems of group deliberation. Cass Sunstein and Reid Hastie (2008) famously discussed the detrimental effects of the respect that participants in a deliberating group have towards information shared by other participants, and of the expectation of reputational sanctions when sharing information that others disapprove of (4). People may silence themselves when they dissent, the more so when they are a minority within the group, for thinking that they must be mistaken or for thinking that the benefits of remaining silent outweigh the benefits of expressing their opinion (5-6). As a result, errors introduced by participants may spread, instead of be weeded out, information possessed by only a few individuals may be slighted, and existing predispositions in a group may be strengthened regardless of merit («polarization») (8-28).

Critical exchanges can be expected to lessen such problems. The idea that a context of argumentation and debate improves the reasoning within a group has empirical support (Mercier and Sperber 2010), also within education (Kuhn 2005). For example, when only a few members in a group dispose of information

needed to arrive at a correct solution (so that the distribution of information forms a whidden profile»), dissent and discussion enhances the performance of the group (Schulz-Hardt et al. 2006). If some participants are given a special responsibility to critically challenge and test information and argumentation advanced by others, especially when these are high profile speakers or writers, or when the information is considered as obvious and self-evident, then this built-in incentive to introduce additional information helps to correct errors in information and reasoning, and counters the exaggerated tendency to defer to the opinions of peers and experts (cf. Sunstein and Hastie 2015). When designing procedures for group deliberation, it will be helpful to build critical exchanges into their design.

## 3. Persuasion dialogue and negotiation dialogue

The kind of dialogue that a committee needs when investigating an accident is quite different from the kind of dialogue found in a parliament, and both differ greatly from a quarrel between friends. Yet in each, arguments and criticisms play a role. Douglas Walton and Erik Krabbe (1995) distinguish between six basic types of dialogue, and the role of argumentation in them. Two of them underlie the online discussion procedures that I discuss in the next section: *persuasion dialogue* and *negotiation dialogue*.

In the most simple kind of *persuasion dialogue*, two agents start from an disagreement, where a proponent expresses a standpoint, and an opponent raises mere critical doubt. They share the goal of resolving this disagreement on the merits of the case. They proceed on the basis of a mildly competitive distribution of labour: the opponent adopts the responsibility to critically test the proponent's standpoint and arguments, thus trying to show that the standpoint in unjustifiable; the proponent adopts the responsibility to answer all critical reactions, thus trying to show that the opponent's critical attitude is untenable. Clearly, critical exchanges play the major part here, and they are instrumental for collective opinion formation based on a survey of all available pros and cons.

In education, debate has for many years been an important and often used tool. Like in persuasion dialogues, critical exchanges form the major ingredient of debate, and the participants attempt to justify their (either authentic but often simulated) opinions vis-à-vis addressees who get the opportunity to try to rebut them. Unlike persuasion dialogue, though, the emphasis, at least during the debate, typically is more on the competition between the contestants, who are expected to defend their positions staunchly, and to exploit any opportunity to undermine rival positions, rather than on the cooperative search for a resolution on the merits of the case.

But then, of course, the balance between competition and cooperation in debating can changed. One can design debate in a more *deliberative*<sup>2</sup> fashion by

Walton and Krabbe (1995) use the term 'deliberation' (in «deliberation dialogue») in a much more specific sense than the term is used within studies on group deliberation or in

encouraging the kind of cooperation that characterizes persuasion dialogue. For example, we can encourage participants to acknowledge interesting counter-considerations, and to improve and revise their position in the light of what can be learned from the other side.

A deliberative debate, as I use the term, is a special kind of persuasion dialogue. It start from a difference of opinion. The goal is to cooperate in finding or developing a correct solution to a practical issue. It proceeds by embedding critical exchanges about the solutions entertained or proposed by the participants. The participants cooperate in their common search for a correct answer by competing in these critical exchanges, so that a possible agreement withstands critical scrutiny. Finally, a deliberative debate takes place before an audience that forms a judgment about the best answer to the issue or about how the participants in the debate proceed in their inquiry. In the next section, I provide some details of one such design proposal, that I also label Deliberative Debate.

The concept of *negotiation dialogue* has received less attention in argumentation theory than that of a persuasion dialogue. The explanation seems to be that persuasion dialogue is more intimately connected with the project of clarifying the concept of argumentation and the kind of reasonableness that characterizes it. Yet, there is some ground for considering negotiation dialogue as an argumentative kind of dialogue, and thus worth the attention of those who wish to promote high quality argumentation and criticism in education. What is more, the accompanying concept of compromise is of prime importance for understanding and assessing the kinds of agreements that are required for people to cooperate when, as is ubiquitous in pluralistic societies, their differences of opinion are fundamental and unresolvable by means of persuasion dialogue.

A negotiation dialogue often starts from a difference of interests, and the agents try to step-wise develop a deal that is based on mutual concessions. The participants may wish to settle on a compromise solution if each prefers having this agreement to a situation without any agreement, and none expects a more profitable agreement to be feasible.

A negotiation dialogue proceeds by way of offer and counteroffer, and each offer can be seen as expressing a so-called expediency argument. Thus when a salesperson makes an offer, such as: «I am prepared to sell you this piano for 7000 euro», she can be seen as also adopting the role of the proponent of the thesis that it is expedient for the customer to accept his proposal, and as presenting the following argument: «If you would accept my offer of selling you the piano for 7000 euro, you would obtain this piano for 7000, and you really value this piano at 7000 at least. Therefore, it is expedient for you to accept my

political philosophy. When qualifying a discussion procedure as 'deliberative' I connect to the use of 'deliberation' in these latter literatures, where it connotes a discussion that is: informed (by using accurate factual information); balanced (by having arguments met by counterarguments); conscientious (with participants willing to talk and listen); substantive (by being about the merits, and not about the persons involved); and comprehensive (by including the considerations by all concerned) (Fishkin and Luskin 2005).

offer». If the salesperson adds «and listen to the beautiful sound!» she – as it were - adds a reason in support of the premise «you really value this piano at 7000 at least». Hence, critical exchanges are plausibly embedded in negotiation dialogues, and when the parties strike a deal, the agreement is typically not only the result of mutual bargaining pressure, but in part also from an exchange of such expediency arguments (van Laar and Krabbe 2018).

Compromise solutions are sometimes also sought for settling differences of opinion, if they concern action or policy. Negotiation become a serious option when: nobody expect to be able to persuade the others of her firstly preferred policy and a failure to strike a deal has highly adverse effects. If they agree on a compromise, each agrees to it partly because of the social setting at hand, where an agreement on first preferences proves to be impossible, and where a fair enough negotiation process brought them here.

Following recent developments in ethics (Weinstock 2013) and political philosophy (Mansbridge et al. 2010; Wendt 2016), there are principled reasons to value compromise solutions, in additional to practical ones, and thus to turn to a negotiation dialogue when persuasion dialogue fails. By coining the term *deliberative negotiation*, Mansbridge et al underline their idea that some forms of negotiation and compromise formation can be part of the kind of deliberation that is required for legitimate law and policy making. The educational Middle Ground discussion procedure discussed in the next section is a specific procedure that implements this idea of deliberative negotiation, and it can be used in civic education for practicing and thinking about the merits and vices of engaging in a discussion that is oriented towards compromise, rather than resolution.

#### 4. Three educational software applications

In this section I discuss the applications: *Deliberative Debate* for deliberative debate, *Middle Ground* for deliberative negotiation, and *Design a Discussion Yourself* for enabling teachers and advanced student to design a discussion procedure themselves. Each of the procedures provide structure to the argumentative exchanges by making it clear to the participants what specific tasks are expected from them and in what time frame.<sup>3</sup>

In all cases, the software has the role of chairperson that informs the participants about the topic, and the tasks to be carried out. The discussions are real-time. They take place in small groups, and there is no limit to the number of such groups. All contributions are written. The admin, probably a teacher, prepares a discussion session by: formulating the topic, setting the starting time and the duration of the procedural steps, distributing entry codes, and by inserting an evaluation form.

Deliberative Debate and Design a Discussion Yourself will be launched in 2021; Middle Ground has been launched in 2019. The software is written by Tom Doesburg, Jasper Smit and Lars Sinke at the University of Groningen.

To enhance the *autonomy* of the students, the software does no more than managing the process. Any issue regarding civility and argument quality must be raised, and dealt with, by the participants. There is no special role for a more active, or activist, teacher during the discussion, except when he or she participants as a peer. To enhance *transparency*, all contributions remain available in the discussion, and arguments are listed or diagrammed. To enhance equal and open-minded *participation*, participants express their views and considerations, before they read about those of others, so that they speak their minds and do not silence themselves. Each of the discussion procedures allow of variants that do not make use of software. An advantage of using online procedures is that this provides students with opportunities to discuss the prospects and pitfalls of online discussion. A practical advantage is that it reduces the manpower that moderation of deliberation in small groups requires in education.

## The application Deliberative Debate

The software Deliberative Debate forms a specific instance of deliberative debate, and it uses critical exchanges in the step-wise attempt by each party to develop a well-considered, persuasive speech in support of a justifiable standpoint. What is distinctively *deliberative* about the procedure, is that each party uses the evaluative comments by the other party in order to learn, and to improve both the reasoning in support of their standpoint and their standpoint itself.

Before a session starts, the admin creates one or more groups, and within each group a Party A and a Party B. Each party has one to five participants, one acting as the scribe of the party. When a session starts, the participants get to read about the topic of the discussion. From there, the procedure has seven steps.

In step 1, both parties develop a well-reasoned position. To this end, the scribe creates an argument diagram (i.e. a directed graph) that contains the party's standpoint as the top node, followed by one or more subordinate and coordinative reasons. On an internal discussion board, the party members deliberate about their argumentative position, and ask their scribe: to add nodes to the diagram; to reconfigure the diagram; or to change the content or wording of standpoint or reasons. Step 1 ends by making the argumentative positions (diagrams) available for inspection to the other party.

In step 2, party A evaluates the argumentation by Party B, and vice versa, by attaching comments to the nodes in the diagram. The task description directs the participants to consider critical questions about the acceptability of premises (e.g. by raising the issue of sources used: «says who?»), the reliability of the argumentative connections between premises and (subordinate) conclusions (e.g. by raising the issue of argument strength: «isn't this merely anecdotal evidence?»), and the adequacy of the wording (e.g. by raising the issue of loaded or biased language: «isn't this a euphemism?»). It is stressed that positive assessments (such as the acknowledgement of interesting features in the other party's position) and helpful suggestions are also part of a complete evaluation. The scribe of a party records the comments, and on the internal discussion board,

the party members deliberate about what their scribe should do. Step 2 ends by making the evaluative comments available to the other party.

In step 3, the members of both parties engage in two plenary discussions. First, about the position of Party A, and then about Party B.

In step 4, both parties first revise their argumentative positions (diagrams) in light of the previous discussions; and then write a speech on the basis of their diagram. Again, the scribe writes, and the other party members deliberate on what the scribe should write. Step 4 ends by making the speeches available.

In step 5, party A evaluates the speech by Party B, and vice versa, by making a list of comments. Again, the scribe and the other party members collaborate. Step 5 ends by making the evaluations of the speeches available to the other party.

In step 6, the members of both parties enter two plenary discussions on a discussion board available to all. First, about Party B's speech and second about Party A's.

In step 7, each party writes the final version of their speech. When done, the final speech becomes available to the other party, and gets submitted to the teacher (who also has access to a logfile). With an evaluation form, the participants evaluate the process, the procedure and the quality of the standpoints, arguments, criticisms, and speeches.

# The application Middle Ground

A deliberative negotiation is a special kind of negotiation dialogue. The goal is to cooperate in developing an optimal compromise that settles a dispute that cannot be really resolved by persuasion dialogue. It proceeds by embedding critical exchanges about the compromise proposals tabled by the participants. The participants cooperate in their search for an satisfactory agreement by competing in an exchange of proposals (offers) and counterproposals (counteroffers), so as to arrive at a compromise agreement that withstands critical scrutiny. What is distinctively deliberative about the procedure, is that all participants are required to explain their initial preferences and to provide persuasive reasons for each of their compromise proposals, so that when they arrive at an agreement, this agreement is well considered. The software application Middle Ground forms a specific instance of this kind of discussion.

Before a session of Middle Ground starts, the admin creates one or more groups. Each group has 2 to 5 participants. There are no parties within the group, thus each is his own scribe. The admin's preparation is to embed the topic at issue within a, probably fictive, scenario where a failure to arrive at an agreement is seen as highly undesirable. The admin ensures that there is dissent within each group, for example by distributing students with different perspectives over the groups, or by asking participants to adopt specific stakeholder roles.

When a session starts, the participants read about the topic of the discussion and the scenario in which they are imagined to find themselves. They are informed that the discussion procedure will not require them to convince each

other, but to come to an agreement based on mutual concessions. From there, the procedure has 3 stages.

First, in the *First Preferences Stage*, each participant formulates her first preference for a policy, and *explains* this preference by listing values, interests, feelings or principles that motivate it. Then, each such motivated preference can be clarified, but not yet criticized, on a discussion board.

Second, in the *Compromise Proposals Stage*, each participant develops and tables a first compromise proposal, by turning the firstly preferred policy into a compromise proposal that accommodates at least some of the values, interests, feelings or principles cherished by others. In this way, each participants needs to think about a way to (temporarily) change the difference of opinion into an issue of distributing exchangeable items, such as promises to accept a part of a policy. Each such proposal gets supported by reasons that could help to convince the others to accept it. Each argued proposal is discussed on a discussion board.

Third, in the *Negotiations Stage*, the participants take turns and table new compromise proposals, each followed by a discussion and a vote. The procedure ends, if a supermajority of all-minus-one is reached, with 3 – 5 participants, or when a consensus is reached, with 2 participants. If the discussion does not end in this way after two rounds of proposals, the discussion terminates without an agreement. The participants are asked to fill an evaluation form before they exit the software.

## The application Design a Discussion Yourself

The third software application is of a different nature. It allows a teacher or advanced student to adopt the role of *procedure admin*, and to design a discussion procedure herself. When it is finished, she herself, or other teachers, can take the role of *session admin* and organize a discussion session of that type. There can be various objectives of designing a discussion, such as: to create a discussion format that suits one's educational needs; to study the effects of specific discussion design choices; or to help students to critically reflect on the design of argumentative discussion.

The *procedure admin* has a control panel that allows her to build a procedure from tasks to be performed by the participants. She can do so from scratch, or by revising a pre-existing procedure, such as Deliberative Debate. When the procedure admin finishes the procedure, it becomes available for a regular admin who then needs to prepare sessions in the same way as discussed before: formulating a topic; setting the time limits; determining the number of groups; distributing entry codes; and adding an evaluation form.

The procedure to be built is a sequence of tasks to be performed by a Party A and a Party B, in whatever order. A party has at most five members, including a scribe. The main building blocks are: creating or revising an argument diagram; writing or revising a speech; adding evaluative comments to a graph, or to a speech; casting a vote; viewing results of a task; internal party discussion; and plenary discussion. The procedure admin herself records the preferred task

descriptions, adding guidance or tips at will, and can thus adjust the wording to the target audience and to the aims of the discussion.

#### 5. Conclusion

The leading ideas of this paper are: first, that discussion procedures that systematically include critical testing enhance the quality of the discussion; and second, that by letting students engage in high quality deliberations, it can be expected that they sharpen their skills in analysing, evaluating and producing arguments. Having a wide variety of discussion procedures at one's disposal provides an opportunity to help students to develop the meta-cognitive insights about the advantages and disadvantages of the various discussion formats in various contexts, and the different kinds of arguments needed in such settings. The dialogical approach to argumentation may inspire the further development of educational tools for promoting argumentation and criticism in educational settings.

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