

Improve Your Use of Discussion in Class

by David W. Price

What is discussion?

Discussion is a teaching method that uses dialogue to help students process course content while incorporating their ideas and providing opportunities to have their understanding validated by an instructor (Finn & Schrod, 2016). Discussions may have differing expectations, formats and modes of participation.

Discussions are affected by expectations of their purpose

- Students may treat discussions as social interactions with peers to improve their generic communication skills or to accomplish a task by agreeing on a “correct” answer, both of which are associated with poorer discussion experiences and lower final grades (Ellis & Calvo, 2006).
- Instructors may expect individual students to use discussion to demonstrate their mastery of course content or the ability to make an argument supported by evidence (Bruss, 2009).
- Students may use dialogue with peers to deepen their learning on a topic by exploring multiple perspectives, which is associated with better discussion experiences and higher final grades (Ellis & Calvo, 2006).

Discussions may use different formats (To & Carless, 2016)

- Teacher-led (an instructor interacts with the entire class together)
- Peer-led (the class is divided into smaller groups in which students discuss among themselves)
- A combination, such as starting with peer-led groups then moving into a teacher-led review of peer results

Discussions may occur through multiple modes, whether in-person or online

- Oral speech such as in a classroom or live online session
- Written statements in a series of responses such as in an online forum or in a classroom where questions are posted along the walls and discussion responses are written on the posters

REFLECTION QUESTIONS

Whichever purpose and format, also reflect on your expectations for the discussion:

1. How do practitioners in your discipline use discussion in the “real world”?
2. How might advanced expectations for discussion help your students practice your discipline?
3. How might you use formats and modes that are different from your usual preference?

Benefits of Discussion

Effective discussion offers several benefits:

- Improved understanding of concepts (Obenland, et al., 2014)
- Deeper learning, higher grades (Rocca, 2010), and improved performance on exams (Harton et al., 2002)

- Improved understanding of disciplinary expectations and assessment criteria when using work samples (To & Carless, 2016)
- Sharing points of view and rethinking answers (Harton et al., 2002)
- Improved motivation (Rocca, 2010), improved student satisfaction with learning (Harton et al., 2002)
- socializing with others (Harton et al., 2002), feelings of belonging to a learning community online (Malkin et al., 2016)

REFLECTION QUESTIONS

Reflect on the benefits you expect from discussion:

4. What discussion benefits have you experienced?
5. What discussion benefits would you like to develop more?

Challenges of Discussion

Discussions face some common roadblocks from both students and instructors.

Students undermine discussions when they have the following issues:

- See discussion as busywork rather than a learning opportunity (Ellis & Calvo, 2006).
- Struggle to make substantive contributions that are relevant, insightful, and refer to specific evidence such as assigned readings (Bruss, 2009).
- Avoid sharing their ideas, which may relate to feelings of intimidation and inadequacy and fear of being evaluated negatively (Rocca, 2010).
- Dominate a discussion, or focus their participation on asking for clarifications of content or procedures rather than engaging with the topic (Rocca, 2010).

Instructors undermine discussions when they have the following issues:

- Discourage participation through unsupportive behaviour such as extensive lecturing (or other behaviours detailed in Step 6 of the next section) (Rocca, 2010; Finn & Schrodtt, 2016)
- Focus on correct answers rather than concepts, curiosity and reasoning (Obenland, et al., 2014; Knight et al., 2013; Westervelt & Leonard, 2011; Ellis & Calvo, 2006).
- Fail to recognize student contributions and misconceptions as valuable material to advance a discussion towards desired thinking (Speer & Wagner, 2009).
- Ignore shy or less verbal students (Francek, 2006).
- Ignore roadblocks to discussion such as row and column seating where students face the instructor (although highly anxious students can prefer such seating) (Rocca, 2010).
- Allow “discussions” to devolve into isolated comments made for participation grades instead of building on or developing what others have said (Johnson, 2016).

REFLECTION QUESTIONS

Reflect on challenges that undermine your discussions:

1. How did your students undermine your last discussion?
2. How did you undermine your last discussion?

How to Use Discussion Effectively

Improve the effectiveness of discussions by following six phases informed by the literature:



1. Prepare yourself to guide a discussion

- **Consider how to build from students' contributions.** Prepare to identify and build from both correct contributions and common misconceptions from students to move them towards desired learning outcomes (rather than simply saying they are wrong) by using
 - Pedagogical content knowledge (how students are typically challenged by your topic and what examples and explanations help) and
 - Specialized content knowledge (how to follow and evaluate typical student reasoning in your topic) (Speer & Wagner, 2009)
- **Develop critical questions.** Support curiosity and independence by developing critical questions both about your content and their own contributions (Westervelt & Leonard, 2011):
 - Why is X important?
 - What are the implications of using X?
 - What are alternatives to X?
 - How would [alternative perspective] see this issue?
- **Categorize types of contributions to guide facilitation** (Online). Prepare to moderate and advance discussions by categorizing contributions made by students and yourself as facilitator (Johnson, 2016):
 - Indexical statements simply refer to something someone already said but don't build on it
 - Elliptical statements refer to something someone said but then shift to a different topic
 - Projective statements use questions or comments to prompt others to explore deeper
 - Facilitators can use indexical statements to recognize things students have already said to encourage further involvement, and then use projective statements to prompt deeper consideration.

REFLECTION QUESTIONS

Prepare for your next discussion:

1. What are the challenges students face with your topic and what examples and explanations help?
2. How do students typically reason and how should they reason instead?
3. Who can you ask and where can you turn to develop your pedagogical/specialized content knowledge for your discipline?
4. What critical questions can you use to engage them with your content and shift their reasoning?

2. Establish criteria for student participation in a discussion

- **Create criteria and provide them in a rubric.** Improve student preparation, use of supporting evidence, and substantive remarks by creating evaluation criteria (Bruss, 2009), which can be outlined in a rubric that requires individual contributions, responses to peers, a minimum length, and detailed references to readings (Malkin et al., 2016; Darabi et al., 2013)

- **Require justifications.** Improve argumentation in peer discussions by requiring students to justify their answers when reporting back to the class (instead of saying you will explain the right answer after everyone contributes) (Knight et al., 2013)
- **Require collaboration.** Improve learning outcomes and feelings of belonging to a learning community online by requiring students to discuss and collaborate on application tasks (applying concepts to problems) (Darabi et al., 2013)
- **Grade participation.** Improve participation with mandatory graded participation and a mid-semester assessment of discussion participation (Rocca, 2010)

REFLECTION QUESTIONS

Develop criteria for your next discussion:

1. What grades can you allocate to this discussion?
2. What evaluation criteria could you provide students?
 - E.g. Rate their use of substantive argument, supporting evidence and explanation
 - E.g. Rate how well they addressed peer contributions

3. Orient students towards productive attitudes and methods

- **Change attitudes.** Shift student attitudes away from seeing discussion as a non-essential task (to practice communication skills, find the right answer, or win an argument) towards using discussion for learning (to consider different perspectives and experiences to better understand a topic) (Ellis & Calvo, 2006)
- **Provide guidance.** Improve academic performance and ratings on self assessments and course evaluations, by assigning and reviewing readings on the importance of discussions, how to lead them, and how to identify and overcome barriers (Brank & Wylie, 2013; Darabi et al., 2013)
- **Provide a model in your topic.** Improve student preparation, use of supporting evidence, and substantive remarks by demonstrating a model discussion in your topic area while students use an evaluation rubric to discuss the demonstration with the instructor (Bruss, 2009)
- **Provide practice.** Improve discussion quality by providing explicit practice such as having student groups identify and discuss key insights from readings, reflect on their performance, and receive feedback based on a rubric (Bruss, 2009; Darabi et al., 2013)

REFLECTION QUESTIONS

Orient yourself and students for your next discussion:

1. What attitude do you and your students have to discussion now?
2. What readings, model discussions and group practice could you use (in person? video?) to help students develop and assess their discussion skills within your topic and against your criteria?

4. Arrange facilities, groups and formats for productive discussion

- **Change seating.** Improve participation by shifting row and column seating into a more discussion-supported arrangement such as U-shapes or circles (Rocca, 2010)
- **Start with groups.** Have students first discuss with familiar classmates before a full-class discussion (Rocca, 2010) (particularly in large classes) such as having students answer a difficult multiple-choice question, discuss answers with a classmate, then share with the class (Harton et al., 2002)

- **Use small groups.** Compensate for large classrooms by providing small groups outside of class such as labs (Rocca, 2010), and foster relationship-building, participation, ease of following discussions and deeper thinking by using small groups online (Akcaoglu & Lee, 2016)
- **Address dominant students.** Balance participation by moving dominant students into observer roles who report on small group discussions (Rocca, 2010)
- **Address advanced students.** Balance differences in student ability by having more advanced students prepare and lead group discussions, such as debates based on the literature (Duncan, et al., 2015)
- **Consider discouraging factors** (online). Look for high course workloads, low instructor or peer feedback, and low experience with computer-based communication, all of which are related to low participation in discussions (Rocca, 2010)
- **Consider response cards.** Consider alternative forms of participation such as response cards (index cards with pre-printed answers such as true/false, or multiple choice letters, that students hold up during discussions) which increases student attention and participation (Rocca, 2010)
- Consider gallery walks. Consider alternative forms of discussion such as a gallery walk where groups circulate a room of posted questions to add their own answers and critiques, then synthesize one poster and present the findings while the instructor corrects misconceptions (Francek, 2006)

REFLECTION QUESTIONS

Plan arrangements for your next discussion:

1. How can you change seating to help discussions?
2. How can you divide into groups to prepare for more meaningful class contributions?
3. Who are your advanced students and how can you use them as observers or leaders?
4. How might you use response cards or a gallery walk to enhance discussion of your topic?

5. Prime discussions with rich inputs

Fuel discussions with rich, meaningful inputs such as homework, samples and labs, quizzes with challenging conceptual questions, dynamically-selected visuals and anonymous backchannels.

The following table offers several suggestions for priming discussions.

Prepare students with homework, work samples and labs	<ul style="list-style-type: none"> • Require preparation. Help students feel interested or knowledgeable in a discussion topic by requiring them to do related homework and to prepare their own questions for the discussion (Rocca, 2010). • Provide work samples. Engage students with disciplinary expectations by having them discuss assignment requirements, review sample work to identify good and bad parts and how to fix them, identify tacit criteria from the samples, and contrast the samples with assignment requirements (To & Carless, 2016). • Build on lab experiences. Improve use of lab and lecture knowledge by having students draft lab reports, attend small-group and class discussions of related conceptual questions, then revise their final reports with additional analysis (Obenland, et al., 2014).
Engage students and identify useful	<ul style="list-style-type: none"> • Start with a quiz. Engage introverted students by starting with quizzes (which may use clicker response software), then sharing students'

<p>learning gaps using quizzes</p>	<p>aggregated answers to prompt discussion (which may include comparing student answers to reports in the literature) (Angera & Latty, 2015).</p> <ul style="list-style-type: none"> • Use complex questions. Choose provocative questions that result in the widest spread of student answers (and potential for discussion) because they require interpretation, allow different solutions, incorporate diagrams, require an example to explain the answer, or require a demonstration of the solution process (Cline et al., 2013). • Use results to find challenging concepts. Identify challenging concepts by presenting multiple choice questions, having students vote on answers, and for any concept with many wrong answers, requiring small group discussions; when students re-vote after such discussions, correct answers are significantly higher and students refer to such discussions when reasoning through new questions (Knight et al., 2013; Cline et al., 2013). • Reuse questions. Reuse effective questions in subsequent offerings of the course to aid lesson planning (Cline et al., 2013).
<p>Enhance content with anonymous student inputs and images sourced during the discussion</p>	<ul style="list-style-type: none"> • Incorporate anonymous input. Engage broader participation by soliciting questions and comments during a discussion through an anonymous chat system (called a “backchannel”) that students can access through their electronic devices (Angera & Latty, 2015). • Use an assistant to search for images during discussions. Supplement discussions with visuals that explain and contextualize the topic (and are relatable for the classroom demographic which may differ from the instructor’s life experience) by having a teaching assistant track the conversation and source and display images from Google (e.g. for a discussion of an environmental issue, show the before, during and after of a recent event that students can relate to) (Pence, et al., 2010).

REFLECTION QUESTIONS

Identify rich inputs for your next discussion:

1. What sample work in your discipline could you provide for students to assess in groups?
2. What kind of conceptual discussion could you add after a practical lab and draft report but before a final assignment deadline to improve analysis?
3. What quiz questions could you use to highlight typical misconceptions that could be resolved with group discussion (particularly among students with differing answers)?
4. What quiz questions could you use to elicit and compare student experiences against your disciplinary literature?
5. What quiz questions could you use to provoke discussion over differing interpretations, problem-solving approaches, and appropriate solutions?
6. How might a backchannel enrich your discussion with more varied and provocative questions from shy students?
7. How could you use a TA to search for helpful visuals as your next discussion evolves?

6. Improve your in-class facilitation

Improve facilitation by eliminating discouraging behaviour and improving constructive moderation.

Identify and reduce your discouraging behaviours	<p>Look for these behaviours that discourage participation in discussion:</p> <ul style="list-style-type: none"> • Extensive lecturing • Low engagement with students • Challenging students in an aggressive way • Alienating students with differing political views • Being perceived as bored, moody, sarcastic, overly-opinionated or condescending <p>(Rocca, 2010)</p> <ul style="list-style-type: none"> • Failing to make eye contact • Reacting to contributions by looking confused or pausing for long periods • Failing to give feedback • Failing to summarize contributions correctly <p>(Finn & Schrod, 2016)</p>
Use more facilitative behaviours	<p>Enhance participation by demonstrating inclusion and appreciation with constructive behaviours:</p> <ul style="list-style-type: none"> • Interact with students in and out of class • Provide eye contact to all students • Use (at least some) student names • Listen first without judging • Provide verbal and non-verbal encouragement • show enthusiasm • Balance power by sharing relevant personal experiences, and ensuring students speak for a respectable proportion of class time (e.g. 50%) <p>(Rocca, 2010)</p>

- **Moderate constructively.** Enhance interest and engagement by affirming students' contributions, keeping discussions on point, stimulating debate with controversial statements, using provocative open-ended questions, and correcting and explaining wrong answers (Finn & Schrod, 2016; Johnson, 2016; Darabi et al., 2013)
- **Work from students' misconceptions.** Help students bridge from their common misconceptions towards desired learning outcomes by using
 - Pedagogical content knowledge (how students are typically challenged by your topic and what examples and explanations help) (Speer & Wagner, 2009);
 - Specialized content knowledge (how to follow and evaluate typical student reasoning in your topic) (Speer & Wagner, 2009); and
 - Questioning to prompt students to reason through challenges (Rocca, 2010)
- **Balance participation.** Balance participation by reinforcing under-participants and moving over-participants into observation roles such as having one group discuss while another group observes (Rocca, 2010)

REFLECTION QUESTIONS

Reflect on behaviours for your next discussion:

1. Reflect on your personality, biases and habits: which discouraging behaviours might currently be undermining your success?
2. How can you track your discouraging behaviours and your success in changing them?

Plan facilitation for your next discussion:

3. What 2 to 3 key behaviours will you focus on practising in the next discussion?
4. Who are the under/over-participants in your class and how will you balance their performance?

Discussion in the Disciplines

Commerce	Students who used discussions to explore their topics more deeply earned better grades (Ellis & Calvo, 2006).
Engineering	No sources identified in this review.
Fine Arts	Discussions based on critical questions helped students move beyond their initial assumptions about a topic (Westervelt & Leonard, 2011).
Humanities	<ul style="list-style-type: none"> • Communications: Provoking and organizing discussion improved student engagement (Finn & Schrodtt, 2016). • Literacy: Discussion prompted the sharing of experiences and building on each others' contributions (Johnson, 2016). • Rhetoric: Criteria and practice for discussion helped rhetoric students improve oral and written arguments (Bruss, 2009). • Writing studies: Discussion of sample work helped writing students expose misconceptions and highlight key requirements for good writing (To & Carless, 2016).
Natural sciences	<ul style="list-style-type: none"> • Biology: Discussion helped students reach more correct answers when required to use evidence to support their arguments (Knight et al., 2013). • Chemistry: Discussion helped students explore lab experiences in terms of scientific concepts rather than procedures (Obenland et al., 2014). • Environmental sciences: Discussion helped students make meaning from images of recent events (Pence, et al., 2010). • Linear algebra: Discussion provoked misconceptions and moved students away from calculations towards using conjectures and theorems to interpret results (Cline et al., 2013). • Math: undergraduates' ideas (correct or incorrect) could be used by the instructor to develop understanding (Speer & Wagner, 2009)
Social Sciences	<ul style="list-style-type: none"> • Education: Small group discussions supported relationship-building (Akcaoglu & Lee, 2016). • Geography: Discussion helped students expose misconceptions and use disciplinary language (Francek, 2006).

- **Psychology:** Students who discussed the purpose of discussions had better learning outcomes and satisfaction in the course (Brank & Wylie, 2013; Harton et al., 2002); research methods students who were required to participate in discussions had higher quiz scores (Malkin et al., 2016).
- **Sexuality studies:** Students, discussions of quiz answers energized participation, triggered comparisons of student perceptions to the literature, and triggered debates about the correct answers (Angera & Latty, 2015).

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