



*Mapping, Clarifying, and Communicating Key Ideas about Collaborative Learning to STEM Audiences*

# Teacher's Roles in Supporting Collaborative Learning

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This primer addresses the following questions:

- What are the benefits of collaborative learning?
- How do I get started with collaborative learning in my classroom?
- What are effective strategies for facilitating collaborative activities?
- What challenges might I face with implementing collaborative learning and how can I address them?

This document culminates with strategies, tips, and resources to help you apply the ideas to making your classroom collaborations more successful.

## Key Takeaways

- Collaborative learning empowers students and deepens their understanding. By providing opportunities for everyone to contribute, students can gain valuable insights, perspectives, and knowledge.
- Valuing every student's contribution is essential for their individual success and the effectiveness of collaborative learning. This includes both content-related input and non-content-specific skills that facilitate meaningful peer conversations and support the learning process.
- While it is a significant mindshift to release control and move into a facilitator role, this change in teacher practice empowers students and fosters deeper learning experiences.
- When students work together to answer questions, debate an issue, solve a problem, or work on some other challenge, these collaborative learning experiences promote positive interactions and prepare them for teamwork.
- Becoming an effective facilitator takes time and practice. Start small, engage in ongoing reflection, and seek support as needed.

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## Background

Collaborative learning is a process where students actively build knowledge and understanding together through activities. Collaborative learning includes problem solving, creating products, and discussions in large or small groups. For collaborative learning activities to be effective, teachers orchestrate and direct the different activities, much like a conductor directs all the instruments, to support the collaborative learning experience. It takes time, openness, and flexibility to learn how to support collaborative learning. While many teachers are interested in collaborative learning, they report not learning about it in their training and not having access to professional learning opportunities for it (Kaendler et al., 2015; Le et al., 2018).

Collaborative learning activities work best when a teacher plans in advance how to facilitate three key phases:

1. Before collaboration, teachers must prepare students with communication and relation skills and create the classroom culture.
2. During collaboration itself, the teacher monitors and guides student groups and, as the interactive portion ends, checks to see that students have learned.
3. After collaborative activities in small groups, the teacher and students finish the experience by reflecting on the activity.

Both research and experienced teachers tell us that well-facilitated collaborative learning includes benefits such as preparing students for teamwork, deepening their subject learning, enhancing collaboration and expression skills, and promoting positive interactions with others (Webb, 2009). In addition, Two recent meta-analytic studies show moderate to large effect sizes for collaborative learning's effectiveness (Chen et al., 2018; Kyndt et al., 2013) on both achievement and attitudes.

Before we get into the research literature on collaborative learning, we think it is important to clarify the difference between two approaches to students working together: **cooperative learning** and **collaborative learning**. Both approaches focus on students working in groups, but each aims towards a different set of outcomes.

- Teachers often use **cooperative learning** to save time or to allow students to accomplish more than what one student could do alone in the same amount of time (Kaendler et al., 2015). Tasks are divided among team members, with each member doing their own task before getting together with other team members to combine their efforts (Rochelle & Teasley, 1995). Students work side by side but not always on the same thing. For example, a teacher may have a group of students each create one slide of a shared slideshow before the team puts the whole slideshow together.
- In contrast, during **collaborative learning**, the intent is for students to build shared understanding and to support each other as they work together to answer questions, debate an issue, solve a problem, or work on some other challenge. For example, a collaborative group of students would work together on each slide in a slide show rather than dividing the slides up

each create one and put them together at the end. They would decide together how to frame it, what belongs on each slide, and come to a shared understanding of the content to be expressed on each slide.

Learning outcomes are different for students in the two kinds of groups. Collaborative learning provides opportunities for students to learn in ways they couldn't on their own. Through discussing different perspectives, approaches, and ideas of other members, they deepen their understanding of the targeted content and develop their own new perspectives and insights. Cooperative learning is a valuable pedagogical approach and can enhance student achievement by fostering critical thinking, communication skills, and social development.

## What Does the Research Say?

This section examines the scholarly literature pertaining to the mechanisms underlying learning in collaborative environments, specifically addressing the rationale for specific actions and considerations at each stage of the learning process: before, during, and after the collaborative activity. Practitioner perspectives will be considered in a later section and the [Collaborative Learning Toolkit](#) is a companion document that provides strategies and examples for classroom use.

### Before: Preparing for Collaborative Learning

**Develop a positive classroom culture.** Bielaczyc and colleagues (2013) suggest using a strength- or asset-based approach to foster a safe and supportive environment. Teachers should focus on helping each student understand the strengths and assets they bring to a collaboration. The goal is to create a place where students feel valued and therefore comfortable taking risks, sharing ideas and experiences, and learning from one another (see “Creating Classroom Culture for Collaborative Learning” in the [Collaborative Learning Toolkit](#)).

For student-to-student relationships, an asset-based approach that highlights how each student plays an important role during collaboration helps **balance status relationships** among students by **raising awareness of the multiple skills needed to accomplish the group task** and **stressing that all students bring important skills**. The more frequently teachers discuss the importance of multiple abilities, comment on the contributions of students who may be perceived as “less important” to the group, and emphasize that no one person in the group is best at each of these abilities, the more students aim towards truly working together (Webb, 2009 p. 8).

It is important to establish trust by building strong teacher-student relationships (Bielaczyc et al., 2013). Research has found that strong relationships are linked to greater student academic engagement, improved attendance and grades, fewer disruptive behaviors, and lower dropout rates.

Early research on cooperative learning has identified social interdependence as a key component for successful collaboration (Johnson & Johnson, 2009); research on collaborative learning also shows that it is foundational (Shimizu et al. 2020). **Social interdependence** occurs when students have shared

common goals and individual outcomes that are dependent on the actions of others (Johnson & Johnson, 2009). Social interdependence can be positive or negative. When positive, each student's success and the group's success are intertwined, which encourages collaboration (Gillies, 2008). Group roles that emphasize each student playing an important role in the collaboration, emphasizing that everyone is necessary, and giving points when assessing collaborative skills for things like including everyone in a discussion or building on each other's ideas can help (Webb, 2009). In addition, when setting up classroom culture, consider whether their classroom rules and procedures contribute to positive social interdependence. For example, "grading on a curve" creates a competitive atmosphere in the classroom that runs counter to positive interdependence and may prevent students from collaborating and helping others learn.

**Prepare students for collaborative learning.** It is important to describe all expected interaction behaviors that lead to successful collaborative learning, and explicitly teach students how to achieve them, including how to actively and attentively listen (Van Leeuwen & Janssen, 2019).

For example, the ability to explore alternatives proposed by different group members is one important collaboration skill. Barron (2003) found that groups are more successful at solving problems if they spend more time exploring alternatives proposed by group members. For example, some solutions can be achieved when different group members contribute partial pieces of the solution and the whole group reasons or elaborates together to achieve the correct answer. Van Leeuwen and Janssen (2019) also found that successful group members provide each other constructive feedback, monitor their progress, and reflect on interactions so they can learn to identify and solve communication problems.

To develop the collaboration skills they need, students require ongoing collaborative learning experiences and teacher support. For each set of collaboration skills to be learned, Kolodner and colleagues (2003) suggest **starting with simple collaborative assignments to introduce those skills** (see the [Collaborative Learning Toolkit](#) for examples). Only after engaging as a class on reflective discussions and identifying good collaborative practices is it time to move on to more sophisticated collaborative assignments. By reflecting on those collaborations, students recognize and refine the skills for collaboration. Over time, this approach helps them become more skilled collaborators and independent learners.

Students will collaborate best if they **develop agency and responsibility for their own learning successes and the successes of others**. The intentional work of building valuable and important knowledge together gives the students in the classroom a purpose as they work together (Scardamalia & Bereiter, 2010). Explicit discussion of the skills they need helps them learn these and achieve success. Structuring tasks with individual accountability for shared goals fosters collective responsibility for group learning. **Structure the task: Create scripts and rituals.** As students learn to collaborate, they may need help communicating. **Sentence starters** or sentence frames (examples provided in the Related Resources section of this primer and the [Collaborative Learning Toolkit](#))—or if needed, more elaborate scripted language—can be helpful for their first interactions. In addition, these scaffolds can be helpful in classrooms where students have different native languages and cultural backgrounds (Popov et al., 2013). Research has shown that scripts can significantly improve collaborative skills and domain learning,

with the effect of improving collaborative skills (Radkowsch et al., 2020). These can help students interact in transactive ways to build on each other's reasoning and create shared understanding by critiquing, refining, or extending the thinking (Vogel et al., 2017). Highly prescriptive interaction scripts can negatively impact learner motivation by undermining their sense of agency (Deci and Ryan, 1985; Radkowsch et al., 2020). Practitioners should be aware of this potential consequence.

Research also suggests that **“ritualizing” activities** can provide structure to collaborative activities that support both teachers and students as they learn to be good collaborators (Kolodner, 2003). When students practice a ritualized activity over time, they come to recognize what is expected of them and become fluent in carrying out the skills required by that ritual. For instance, a teacher could turn a “gallery walk” into a ritual (Kolodner et al., 2003). A gallery walk is an activity where student groups make a poster showing their ideas, then present their ideas to the class, respond to questions and comments, and hear how others did their work. In a gallery walk, students get a chance to broaden their understanding as they learn from their peers. Reflective discussion after the gallery walk, followed by repeated opportunities to carry out the ritualized activity, lead to increased ability to perform the collaborative activities (Kolodner et al., 2003).

**Structuring the task: Set up groups strategically and assign group roles.** In an interview study, teachers discussed how it is important to develop and then **use their in-depth understanding of students to form effective groups** (Webb, 2009). This understanding allows teachers to form groups of students who will work well together and be more likely to succeed at the assigned task. For example, some groups may be set up to encourage a student to learn more about collaborative skills, while others will be set up to help students go deeper in their understanding of the subject matter (Webb, 2009). It is also important to **regularly change group membership over the course of the school year** so students can learn from different perspectives of different group members. This will prepare students well for future collaborations inside and out of the classroom (Webb, 2009).

Assigning roles to students can also help them structure their work and encourage participation from all group members. Research shows that **group roles help groups work more smoothly**, prevent nonparticipation, and prevent one or a small number of students from dominating the conversation. Further, students use roles assigned to them to structure their interactions (De Wever et al., 2008). **Group roles should be designed so that every student is doing something critical in all stages of the collaboration** (see “Grouping Students” in the [Collaborative Learning Toolkit](#)).

Group size is another important component to consider when making groups. **A group should be large enough so that students can experience multiple perspectives, but small enough that everyone can easily participate** (Dennen & Hoadley, 2013). Three or four students working together is common. For ease of mixing groups, teachers sometimes set up large groups of eight that can be divided into two or four smaller groups during the course of the work so that it is easy for students to have experiences with different students.

**Determine a task appropriate for collaborative learning.** According to Kirschner et al., (2018), the task that a collaborative group works on should be complex enough so that the mental effort required to

collaborate is worth expending. When the assigned task is appropriately challenging, group members will need to work together to jointly come to understanding. Kirshner and colleagues call this the “collective working memory effect,” where multiple people working together can leverage the capacity of other group members’ working memory. As group members coordinate and communicate about their knowledge and understanding, a larger working memory is created. If a task is too simple, there is no need to work with others and this does not occur (see “Selecting Tasks for Collaboration” in the [Collaborative Learning Toolkit](#)).

## During: Facilitating Collaborative Learning

Studies focused on understanding the roles teachers take *during* successful collaborative learning activities have found that collaborative learning works best in classrooms where teachers act as facilitators: guiding rather than directing, empowering students, and using effective intervention techniques to support student learning, navigate challenges, or engage in critical thinking (Kaendler, 2015; Van Leeuwen & Janssen, 2019; Webb, 2009).

**Encourage elaboration.** Some researchers define collaboration as “**the processes of co-elaboration of conceptual understanding and knowledge**” (Baker, 2015 p. 454). Elaboration is the process of explaining or expanding on an idea by adding details, examples, or reasoning to enhance understanding; co-elaboration is doing this with another person or people. If teachers help students co-elaborate, it has a large positive impact on learning (Barron, 2003; Webb, 1985, 1991, 1992 as cited in Gillies, 2004). For example, Barron’s work (2003) found that groups where students listened, discussed, and did not quickly dismiss a group member’s ideas were more successful at solving problems. Teachers can ask students to elaborate by acknowledging ideas, re-voicing suggestions, asking clarifying questions, and considering the responses.

**Give students room to learn.** When students are learning collaboratively, teachers are no longer at the center, as students are empowered active learners (O’Donnell & Hmelo-Silver, 2013). **In well-designed tasks and with appropriate preparation, students can sustain meaningful discussions and collaborate without continuous teacher presence.** In fact, they may have deeper discussions, learn more content, and learn how to regulate as they collaborate (Dragnić-Cindrić et al., 2024).

It can be daunting to begin the process of empowering students to work together without the teacher at the center. Teachers often have concerns about students engaging in off-topic conversations, but with well-structured tasks and clear expectations, students stay engaged, support each other’s learning, and develop essential collaboration skills (Gillies, 2004). In fact, some off-topic conversations while collaborating are necessary for strengthening bonds between and among the students (Lobczowski et al., 2020). Allowing students to stray off-topic as they are collaborating helps create a welcoming space for all students (Osuna-Langer et al., 2020) (see [Social Regulation of Learning](#)). Overall, students need time and space to learn how to be a good collaborative learner; teachers should allow students to make mistakes and experience the consequences, explore outside of the direct material and come back, and make sense of the materials for themselves and with others.

**Monitor groups.** While it is essential to give students space to work and learn, it is also essential to monitor groups and provide advice when necessary. Research suggests that teachers stand back, let students interact, listen, and intervene when it seems necessary in order for the group to make progress (Van Leeuwen and Janssen, 2019; Webb, 2013). For example, a teacher may intervene in any one of the following situations:

- If group is stalled
- When no student can answer the questions of others in their group or the teacher's questions
- When the whole group is enmeshed in a misconception
- When students are having a disagreement or some other interaction issue the group cannot resolve by themselves
- If one student is dominating the discussion

When it is necessary to intervene, it is best to ask questions to better understand what is difficult for the students and to open up discussion; this can often help a group get working again. For example, if a group is stalled, the teacher could say something like, "I wonder if you can revisit your ideas and discuss what you all believe might be the best one." If no one can answer the question, the teacher can ask students to re-read the question and ask them to discuss what it means, how they might want to approach the problem or question, or what evidence they might need to answer it (depending on the question). If one student is dominating the discussion, the teacher could say, "It's great to hear your ideas and collaborative learning depends on everyone engaging and discussing, let's hear from everyone in the group."

It is important to **monitor the group climate, collaborative skills, and what and how students are learning** (Kaendler et al., 2015). Teachers can avoid feeling overwhelmed by creating a rubric or checklist beforehand to monitor the **most important aspects** of group collaboration based on learning goals. What is deemed important will change in different assignments (see [Assessment in Collaborative Learning](#) for further background).

**Ensure that students have learned.** Checking that students have learned is a final step that should occur at the end of the interactive work. A teacher can do this in a whole class discussion or by joining each group. They can discuss the product the students created and compare it to an exemplar product with a correct answer. Kaendler and colleagues (2015) refer to this as consolidating learning.

## After: Reflection

**Reflection** is important for both teachers and students (Kaendler et al., 2015) in all phases of collaboration, but it is especially critical at the conclusion. Reflection can focus on content knowledge and collaborative skills, and inform how individuals, groups, or the whole class can improve in the future. Students can reflect on what they contributed and how they can improve; teachers can give reflection prompts or evaluation rubrics to scaffold the activities. At the conclusion of the activity is also a good time for teachers to reflect. Teachers can consider what worked well for individuals, groups, and the whole class, as well as what adjustments can enhance future collaborative learning experiences.



Students can examine their work as they reflect about their own learning process, peer interactions, and any challenges they faced. Reflective writing, small group discussion, or whole-class discussions can help students articulate concepts and think about how their learning fits in with previous learning (Kolodner et al., 2003). Teachers can also help students reflect on what they did in the content or collaboration, why they did it, what they learned from it, and how to make it better. Further, teachers can reflect on their own facilitative skills, what they heard from groups as they monitored, and what learning occurred.

Planning time for reflective activities shows that the work was important and will continue to be important in the future. Reflection can inform the planning of future work and help reinforce collaborative norms in your classroom. It also helps students articulate and make sense of what they are learning.

## Becoming an Effective Facilitator

Research shows that **positive teacher beliefs about collaborative learning are important to successfully bringing collaborative learning to their classrooms** (Aguirre & Speer, 1999; O'Donnell & Hmelo-Silver, 2013, Webb, 2009; van Aalst, 2013). Students will learn most effectively if teachers believe they can succeed and that, with the right support, there is benefit in empowering students with agency. The cited research literature lists four core teacher beliefs that are essential to success:

- Collaborative learning gives students opportunities to learn deeply and construct knowledge together
- Collaboration empowers students to learn in ways not possible alone
- All students are capable and contribute to the learning process
- Students can take the lead in their learning and learn as they work in groups

Evidence also shows that **it takes substantial time to develop the skills** necessary to facilitate collaborative learning well. When learning to become a facilitator, it is important for teachers to see evidence that collaborative learning will lead to positive outcomes in their classrooms. Even expert collaborative facilitators report that they continue to learn and improve (Webb, 2009). It is helpful for teachers to have ongoing professional learning, opportunities for reflection, and conversations with other teachers who are bringing collaborative learning into their classrooms (Gillies & Boyle, 2010; 2011; Webb et al., 2009). Additionally, if possible, find an opportunity to engage in discussions with colleagues about how collaborative learning is occurring in their classroom and examine how to improve collaborative learning together.

Finally, just as students need to reflect on their learning, teachers need time to synthesize and reflect to become better at facilitation. Teachers can reflect on the strategies and structures they created and how well they worked; they can also consider the roles they played when monitoring groups to determine adjustments to improve facilitation skills. Some helpful reflection questions for teachers include:



- How can I help individual students more in the future?
- What can I do differently to better support groups of students?
- How can I help students see each other as helpful resources in learning?
- What could I do next time to make the whole-class discussion more meaningful?

Reflecting on both the subject-matter learning and the collaborative experience is important for future improvements.

## Practitioner Perspectives

Educators who have invested in collaborative learning discuss that there are challenges to bringing collaborative learning to a classroom. In this section, we discuss both the findings mentioned in the literature review as well as practical advice from expert teachers so you can more easily incorporate collaborative learning into your classroom practice. The expert teachers also report that the challenges are worth it; the effort you put in will reap time savings and learning rewards for your students.

### Before: Setting the Stage for Collaborative Learning

The teacher's role before collaborative learning is to prepare the classroom and students.

One of the most difficult things for teachers is learning to release control and moving from teacher to facilitator. In a collaborative learning classroom, much of a teacher's influence happens behind the scenes when setting up the conditions for learning. This includes:

- Fostering a safe and supportive classroom culture
- Preparing students to collaborate by establishing clear structures and foundational routines, and using a simple assignment to help students experience successful collaboration
- Helping students understand that everyone belongs in the space and brings something valuable to the collaborative work

Creating a collaborative classroom environment requires setting clear expectations based on your teaching values, which takes time and consistency, and turning those values into the basis for a shared learning environment. Start with small experiences such as ice breakers; the next stage might be to move on to something like “turn and talk” but assign roles and have students be accountable for something small from the conversation; or peer teaching, where they explain a concept to one another; or have students discuss reflective questions in small groups and turn in either their group answers or their own answers based on the discussion. It may take your students three or four times to feel comfortable with small experiences, and then it may take several small experiences to build up to larger ones, and that it will be an investment for the entire school year. Then, you can move on to larger collaborative learning projects.

It is essential to build trust both among students and between the teacher and students. If students trust each other and their teacher, they are more willing to take academic risks, share ideas, and make

mistakes, which are key to deep learning. Teachers must trust their students and give them space to take ownership of their learning. A key part in developing trust includes investing time for everyone to get to know each other. Another key part in developing trust is for students to experience success as collaborators. By starting with students practicing in teams or small groups with simple or low-stakes collaborative activities such as icebreakers, think-pair-shares, or other quick discussions, teachers can create conditions for them to experience success.

Teachers often spend a lot of time determining how to group students, especially at the beginning of the year (see “Grouping Students” in the [Collaborative Learning Toolkit](#)). Effective grouping is important as it enables students to know each other well and trust their own capabilities. Creating effective groups requires understanding what each student knows (prior knowledge), their preferences for how they work, and their personalities. While it is possible to create good groups, remember: there is no perfect group. A teacher can always choose to stop an activity early if it’s not going well.

Each group setup provides a teacher with new information about students’ capabilities, dispositions, and support needs—and each setup informs subsequent group setups. Research shows that rotating students in different groups gives students new perspectives, skills, and abilities, which enhances learning. Eventually, grouping will be a classroom routine. Students will be able to work with most students in the class.

No matter the group setup, students need to be reminded frequently that **everyone belongs and can contribute something valuable to the work**. Hearing from students who bring different experiences can both deepen subject matter knowledge, and help groups increase essential collaborative skills. As students improve their collaborative skills related to planning, actively listening to each other, asking clarifying questions, discussing ideas, and elaborating, they will help each other learn even more. If they have misconceptions, they may discover those together, or you can help them as you monitor groups and check for understanding. These collaborative experiences will allow students to learn in ways that aren’t possible alone, especially as they see what and how others know and understand.

## During: Facilitating Collaborative Learning

The teacher plays an active role in monitoring the groups during collaboration. How it looks specifically depends on your classroom culture.

Educators are often trained to provide direct instruction, but in a collaborative learning setting, a teacher’s role changes to a facilitator who works to guide and monitor groups. Of course, there will be times when direct instruction is needed, but work to let students collaborate without intervening, unless necessary. As a facilitator, the teacher determines when to step in and when to step back, observes, and lets students work on their own. Checklists and rubrics can help teachers decide when to intervene. One challenge that can make it difficult to not step in is when students struggle. However, **productive struggle is a key part of the learning process** (Baker et al., 2020). While struggle may sound like something to avoid, it can lead to deeper understanding. The feeling of achievement after successfully completing a difficult task can boost self-efficacy in students and provide motivation.

However, if a group is struggling too much and getting frustrated, an effective teacher plans for how to guide students so they can achieve the goal. Knowing when the struggle is too much and when to intervene is a component of knowing your students. When you find yourself wanting to intervene, try pausing 30 seconds to one minute and observing what happens. As you become more comfortable with how your students work together, increase the amount of time you wait. If you have time, jot down notes about the struggle and how it was resolved. Students can often resolve struggles on their own, and standing back lets them learn how to do this without you.

**Ensure all students are included and participate** in respectful discussions and intervene if that isn't happening. Additionally, a common concern is that students who are in unsupervised groups will engage in off-topic conversations. However, going off-topic briefly (teachers suggest no more than 30 seconds to a minute) can serve an important purpose: it can help a group reset, build connections among members, and gain perspective to refocus on their tasks. If students do not naturally return to their work quickly, then teacher intervention may be necessary. Teachers sometimes don't have to say anything to refocus students; they can use "teacher proximity" and simply walk by an off-task group or give a "look" to get them focused. Use the strategy of observing and waiting to allow students time to get themselves back on track; this helps your students develop collaborative and regulation skills.

As students end their interactive work, check in with the whole class or with each group to determine that they achieved the learning goals of the collaborative activity. Help them summarize and synthesize their learning with their previous knowledge. One way to do this is by asking students to go through a rubric to assess their own work. This final check reinforces the idea that just participating is not the ultimate goal; learning because of the collaborative experience is.

Finally, during collaborative learning you may experience "productive chaos" in your classroom, as collaborative learning is noisier and more dynamic than a traditional classroom. It may feel like disorder, but this productive chaos describes those moments when students collaboratively wrestle with mistakes, talk through their thinking, and ask further questions to build meaningful understanding. Learning is often a messy process and the focus should not always be on producing a polished final product. Instead, to learn with their group, students need to engage deeply with content, strengthen social connections, check their understanding, and develop essential collaboration skills. They may make mistakes along the way, but they will also learn. Teachers who can modify, adjust, and roll with it will have more success. Sometimes students will need more time than you expect. Sometimes the best lesson plans have to be modified to meet the learning goal; students may need more time than expected or to revisit the lesson on a different day with new groups.

## After: Learning Through Reflection

It is critical to give both students and teachers time to reflect after a collaborative learning activity. The right structure for reflection can significantly deepen student learning and improve future collaboration. For either individual or group reflection, these questions help focus student thinking:

- What was your most valuable contribution to the group?
- How did your group overcome challenges?
- What would you do differently next time?
- How did everyone's contributions lead to the final product?
- What did you learn from your teammates?
- Did you learn a different idea that you would not have come up with by yourself?

Here are some example reflection structures that can be used in reflection:

**For individuals:**

- Exit tickets that ask students to briefly identify their contributions, challenges faced, and / or key takeaways
- A learning journal where students record their collaborative experiences, insights gained, and areas for improvement
- Rubrics guide students to evaluate their performance against specific collaboration criteria

**For a classroom reflection:**

- Plus and Delta a two-column activity where groups list what went well (plus) and what they would change next time (delta)
- A Gallery Walk allows groups to share their work and reflections on posters or other public documents groups can rotate to review and comment on other groups' processes and outcomes
- Fishbowl Reflection with one group discussing their collaboration experience in the center while others observe, followed by whole-class reflections.

Reflection is a powerful practice for teachers to improve collaborative learning experiences. There are several ways a teacher can make their reflections systematic, including: teacher journals, documenting observations, success, and challenges over time can reveal patterns; the plus and delta approach described above can be an exercise the teacher undertakes; critical moment analysis, reflection on specific moments that were impactful, challenging, or surprising. In addition, reflecting in community with other teachers, video recording your classroom, or undertaking an action research cycle can be very informative and bring new insights to take forward into future practice.

## Challenges

If you are new to collaborative learning, the process may feel overwhelming. You can seek support from an instructional coach, colleagues, or a professional learning community; if support is not available, give yourself time and grace to experiment and learn. Start small with routines and structures that build towards collaborative learning, like introducing group roles or class norms during a discussion. For example, have students use sentence starters or frames in discussions and create a checklist of “look fors” to observe if they are using them (see “Scaffolding with Sentence Starters” and additional resources in the [Collaborative Learning Toolkit](#)). Look for active listening, taking turns, and building on each other’s ideas. Create these routines first, then build larger collaborative experiences.

An ongoing challenge is balancing the need to cover curriculum quickly with allowing time for deep, collaborative learning. While time constraints are real, prioritizing depth over speed will lead to more meaningful and lasting learning. A commitment to this approach may require resistance to external pressures, demonstrating that it helps learning, and prioritizing slowing the pace down. Collaborative learning has challenges, but routines will ultimately save you time, engage students, and give space for deeper learning, even within pacing guide time constraints (see “Creating a Classroom Culture for Collaborative Learning” in the [Collaborative Learning Toolkit](#)).

## Summary

Teachers play a critically important role in making collaborative learning successful. This document explores various activities and strategies that provide a comprehensive picture of the teacher’s roles in promoting effective collaboration among students. We organize the document around three key points in collaborative learning: before, during, and after (Kaendler, et al., 2015).

- Before collaboration, the teacher has to teach collaborative skills (effective communication, critical thinking, self-regulation), and foster a supportive classroom culture valuing trust, respect, and inclusive participation.
- During collaboration, a teacher monitors and guides students to ensure that all members of the group learn both individually and together and collaborate well.
- After collaboration, it is important to help students reflect on the content they are learning and their collaboration skills and participation.

The insights we share come from both evidence-based research literature and the wisdom of practice.

## Getting Started

Collaborative learning is a way for you and your students to build knowledge, connections, and skills. If you’re new to collaborative learning, start by creating a classroom culture that values communication and interdependence. Choose one short collaborative task and give students explicit feedback to make the next one more effective. Reflect with them. Look for opportunities to collaborate with other teachers.

If you’re experienced with collaborative learning, take time to read our other primers and go through the instructional materials below to deepen your understanding as you continue to refine your practice.

## Other Primers in This Series:

- [Assessment](#)
- [Classroom Discourse](#)
- [Collaborative Argumentation](#)
- [Social Regulation of Learning](#)

## Related Resources

- [Collaborative Learning Toolkit](#)
- [Foundations of Collaboration](#)
- [Socratic Seminar Sentence Stems](#)
- [STEM Teaching Tools: Talk Science Resource Cards](#)
- [STEM Teaching Tools: Constructive Conversation Resource Cards](#)
- [Collaboration Checklist: Before, During, and After](#)
- [Student Roles in Effective Collaborations](#)
- [The Teacher's Role in Collaborative Learning](#)
- [Norms for Discourse](#)

### Videos:

- [Classroom Videos of Collaborative Learning](#)

### Blog Posts:

- [Regulation of learning: What is it and why is it important?](#)

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