Defining a Successful Student Dialogue | Student dialogue is a practice that is built over time beginning with forming relationships within your learning community. Student dialogue can take many different forms depending on classroom dynamic but is always comprised of student talk, whether that is student-to-teacher talk or student-to-student talk.

During a successful student dialogue, a teacher will act as moderator and facilitator as students: respectfully acknowledge one another's thoughts and ideas, verbalize their agreement or disagreement of statements while sharing their own opinions on a given topic, wait patiently for other students to finish their thoughts, and build on the knowledge shared by the class. Ideally, every student voice should be heard and acknowledged and a conclusion should be formulated that is then emphasized by the teacher.

Creating Your Classroom Culture | Building relationships, both student-student and student-educator, is the foundation of student dialogue and contributes to an overall healthy classroom culture. To set students up for success and begin forming a safe and equitable classroom environment during our relationship with Frank Wagner's kindergarten classes, Oxbow educators first took the opportunity to get to know students, introducing themselves to the students through a food-related prompt drawing activity. This prompt was then used in the classroom as an activity where students could share more about themselves with one another, the teachers, and the Oxbow Educators. To learn more about classroom culture, watch, What is Class Culture?

Setting classroom norms (expectations) demonstrates to students how to participate in dialogue by specifying guidelines developed by, and for, both teachers and students. Having students participate in setting class norms allows for their voice to feel included and valued, and students will be more likely to hold one another accountable. Oxbow educators set a classroom agreement, a CommuniTree Agreement, prior to their first EE monthly lesson. This type of agreement is extremely beneficial to refer back to if a group member (or educator!) strays from the expectations [2].

The Value of Inquiry in Student Dialogue | Facilitating inquiry-based learning is at the heart of Oxbow's teaching philosophy. Inquiry questions promote active learning where the teacher acts as a facilitator, posing thoughtful questions and scenarios to help students think critically about a problem or an issue in order for them to form their own thoughts, solutions, and further questions. Inquiry-based learning supports student understanding, discovery-making, and curiosity.

Oxbow's programs use inquiry questions to encourage student discussions and self-guided learning. Most of our monthly EE lessons developed for Frank Wagner's kindergarten classes utilize guided inquiry-based questions. Students first consider their prior understanding of a subject while making and sharing predictions during the lesson's introduction then build and

reflect on new knowledge based on their own observations and experience during the lesson's conclusion.

Through this process, students build on their own knowledge while reflecting and sharing their ideas. To find out more watch: What is Inquiry Based Learning?

Inquiry-based learning has been prioritized by the public school system. OSPI's Washington state standards encourages transitioning away from the "teacher poses a question to the class and calls on a hand to answer" model, creating a new model of student engagement where learning communities draw from experiences inspired by critical thinking and inquiry [1].

Incorporating Student Dialogue in your Classroom |Inquiry based questioning takes time, commitment, and is realistically not possible to incorporate all the time! Additionally, the art of answering a student question with a question takes practice and can feel unfamiliar when beginning to incorporate inquiry-based learning in the classroom [3]. Oxbow educators and Frank Wagner kindergarten teachers participated in several workshops focused on building relationships between teachers and Oxbow educators, supporting teacher confidence in educating outdoors, and developing and promoting student dialogue strategies.

Below is a list of ten compiled, Oxbow & Frank Wagner-favorite techniques we use for supporting student dialogue. These are proven strategies supported by literature from various institutions that have pioneered innovative and ambitious techniques for teaching hands-on science.

Techniques for Supporting Student Dialogue

1. **Accountable Talk:** Display a list of example phrases or "talk moves" that students can use to practice the art of conversation. Giving students prompts or examples of how to frame their discussions will help cultivate a safe environment where students feel comfortable sharing their thoughts without worry of having a wrong answer or idea. Examples of talk move phrases below [4]:

   - I would like to build on what _____ said.
   - I have something to add.
   - Let me see if I understand what you meant.
   - I agree/disagree because _____.
   - I have a different idea about that.

   - Can you explain what you meant when you said…?
   - Take your time. We'll wait…
   - _____, I haven't heard from you yet. Can you share what you're thinking?
   - I agree now with _____, because_____.

2. **"Think & wait time":** We know that not all students think in the same way. Some students may need more reflection time when posed with a big question or concept. "Think & wait time" requires a pause, or a duration of time left in between asking the question and calling

on students for responses. Some "think & wait" strategies utilize more than one pause, which allows teachers to pose the same question or concept in multiple ways before calling on students for responses. Having extra time to think sets the expectation in your class that it is not always the first hand that gets called on and can also help to increase your student response rate.

3. **Repetition:** This strategy involves students repeating certain concepts to their learning community in their own words. This allows for students to share their thoughts in their own way, the way that makes sense to them. Repetition is also a way for students to keep engaged and involved with the class discussion or lesson and will solidify teaching concepts. A teacher might say, "can you repeat what _____ said in your own words?"

4. **"Add on" to definitions or ideas:** When educators call on one student per question, it reinforces the idea that there is only one right answer and sets a negative expectation that all other possible student answers are wrong. Asking the question "Does anyone have something to add to that definition/idea/explanation/solution?" provides students with the opportunity to share their thoughts linked to the topic.

5. **"Me too" hand signals**: Have a quiet hand signal that students use to show they have the same idea or answer to a problem. This gives the students who were not called an opportunity to show they agree with their classmates and be proud of their answers, while giving the student who is sharing some confidence when they see the hand gestures signaling that others agree.

   (Techniques #3-5 were inspired by The Teaching Channel. See more discussion strategies by watching, [Improving Participation with Talk Moves.)](Improving Participation with Talk Moves.)

6. **"Turn and Tell" or "Think, Pair, Share":** Rather than calling on one student to share an answer or idea, this strategy allows students to turn and tell a neighbor their idea, giving students practice at both sharing and listening.

7. **"Catch and Release":** Start as a class to explain the activity, define the problem, or introduce the topic of discussion. Have students break out into small groups at an assigned meeting table/space to work together troubleshooting, discussing, or solving. *Catch* your small groups and come back together as a class to "highlight noticings" and reinforce/restate the objective. *Release* your class and send small groups back to work on incorporating the "noticings" into their troubleshooting, discussing, or solving. Watch a video to see this practice in action, Catch and Release.

8. **"Heads Together, Butts Up!":** This teaching strategy allows for independent thinking through a problem and small group collaboration on a solution. Allow students to tackle a problem for 4-5 minutes individually, then encourage students to discuss their notes and come up with potential answers or solutions to the problem within their small group. Students can compare answers and share notes, as long as they can explain how they arrived at the answer or solution. This allows students to practice using the language around the topic as well as providing an opportunity for students to learn from one another. Watch a video to see this practice in action, Heads Together, Butts Up!

9. **Persist Through Challenge:** Part of creating a safe learning environment is fostering the understanding that learning something new can be challenging. You may not get the answer your first (or 100th) try, a problem may look too intimidating to solve, but being wrong means you're one step closer to being right- and sometimes there isn't a final answer at all! To normalize "struggle" and overcoming challenges in your classroom, use this exercise to share with your students that learning comes in all shapes, sizes, and challenges. Watch a video to see this practice in action: Encouraging Students to Persist through Challenges.
    a. Assign challenges—things you know will be difficult for students
    b. Normalize challenge or struggle to promote strategic thinking: *"I know this was a challenge! Lots of us were having a hard time with X"*
    c. Encourage students to ask for *specific* advice: *"I was having a hard time figuring out ____."*
    d. Justify and critique as a group or in pairs, using evidence and reasoning: *"What is your reasoning for thinking ___?"*
    e. Articulate your thinking process and help others do the same *"I think you're trying to say____. Am I right?"*
    f. Help students reflect on the learning process.
    g. Encourage struggle with "wait-time"—refrain from giving answers right away, instead, acknowledge the existence of struggle and ask questions regarding students' methods to challenge students to think in different ways.

10. **Fostering Curiosity:** Using phrases like "I notice" and "I wonder" with your students allows them to develop the vocabulary around making observations necessary for building on discussions. These phrases will orient students to a topic of discussion and help to promote learning in an inclusive way. This practice also helps to hone students' skills in making scientific observations which can allow them to discern between an observation and an opinion. Learn more here: Beetles Science and Teaching for Field Instructors.

Conclusion| These strategies have been shown to improve student engagement during lessons, especially related to students' ability to listen carefully to one another and feel confident in sharing their ideas. To incorporate these practices in your classroom, first brainstorm methods already in use to support student talk, student dialogue, and/or students talking to each other

and decide which of these strategies has a place in your classroom. Be consistent with what you expect of the students! While it might be an adjustment at first for both you and your class, over time a new discussion strategy can become second nature. Sometimes designating a space as "special" (such as a classroom carpet space) to use as "student discussion" time can allow students to practice focusing on collaborating and communicating with their fellow classmates to engage in the lesson's topic of discussion.

Earth Connections Case Study| While working with Frank Wagner kindergarteners, we relied heavily on "Me too" hand signals and "Turn and Tell" strategies. In an attempt to evaluate the learning process of the students, we captured as many quotes and student thoughts as possible over the span of the project.

During our November "What Makes Up the Soil?" lesson, several student discussion strategies were employed, including utilizing talk moves to help students define "what is soil?"

We asked students to contribute to a class definition about what soil is after observing soil and the creatures that live in it, students shared: Soil is _____... "Alive", "a creature home", "a habitat", and "where the roots grow".

Students also made predictions about what would happen to the worms in an experimental compost chamber over time.

>**Student 2:** "The worms will get pregnant and have babies"
>**Student 3:** "I think the worms will have a lot of fun."
>**Other student quotes captured:**
>**Student 4:** "Los gusanos son muy importantes" (*Many students shared the "Me too" sign*)
>**Student 1:** "I made a habitat at home". (*Goes on to describe the bucket with sticks and leaves and soil that is a habitat for bugs*)

When students were introduced to the tools to be able to communicate with one another and with the teacher effectively, it was a thriving educational environment where students' thoughts, feelings, and opinions felt heard and validated. Towards the end of the year, students were more confident in their engagement with the lesson's topic and were able to not only discuss their views but also listen respectfully to other students who were sharing their ideas.

Works Cited

1. Nolet, Victor, and Gilda Wheeler. "Education for sustainability in Washington State: A whole systems approach." *The Journal of Sustainability Education* 1.0 (2010).
2. Dörnyei, Zoltán. "Creating a motivating classroom environment." International handbook of English language teaching. Springer, Boston, MA, 2007. 719-731.
3. Gormally, Cara, et al. "Effects of inquiry-based learning on students' science literacy skills and confidence." *International journal for the scholarship of teaching and learning* 3.2 (2009): 16.

4. Michaels, Sarah, Catherine O'Connor, and Lauren B. Resnick. "Deliberative discourse idealized and realized: Accountable talk in the classroom and in civic life." *Studies in philosophy and education* 27.4 (2008): 283-297.

Further Reading

5. Edutopia: Dialogue Circles and Positive Classroom Culture
6. The Teaching Channel: https://www.teachingchannel.org/
7.   BEETLES Project (Better Environmental Education, Teaching, Learning & Expertise Sharing): http://beetlesproject.org/about/