

Inquiry Illuminated: Authentic Paths to Deeper Learning

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Time Frame 100 minutes

Essential Question(s)

- How can productive discourse and meaningful questions support student learning?

Summary

In this session, participants will explore inquiry-based learning, one of the components of authenticity. Participants will identify barriers to productive student discussion and explore solutions to overcome these barriers. Participants will read a research brief on inquiry-based learning and apply their understanding of the research to take on the role of a student and engage in discourse with each other. Participants will be encouraged to think critically, solve problems, collaborate to create solutions to real-world scenarios, and consider how they can integrate productive discourse into their classrooms.

Learning Goals

- Develop solutions to overcome barriers to productive discourse in the classroom.
- Implement strategies to support the use of discourse to arrive at an explanation to a complex problem.

Standards

InTASC Model Core Teaching Standards (K-12th)

3k: The teacher knows how to collaborate with learners to establish and monitor elements of a safe and productive learning environment including norms, expectations, routines, and organizational structures.
4c: The teacher engages learners in applying methods of inquiry and standards of evidence used in the discipline.
5d: The teacher engages learners in questioning and challenging assumptions and approaches in order to foster innovation and problem solving in local and global contexts.
5e: The teacher develops learners' communication skills in disciplinary and interdisciplinary contexts by creating meaningful opportunities to employ a variety of forms of communication that address varied audiences and purposes.
8i: The teacher asks questions to stimulate discussion that serves different purposes (e.g., probing for learner understanding, helping learners articulate their ideas and thinking processes, stimulating curiosity, and helping learners to question).

Attachments

- CERTIfy Your Thinking—Inquiry Illuminated.docx
- CERTIfy Your Thinking—Inquiry Illuminated.pdf
- Chat Station Posters—Inquiry Illuminated.docx
- Chat Station Posters—Inquiry Illuminated.pdf
- Components of Authenticity - Inquiry-Based Learning research brief – Inquiry Illuminated.pdf
- Exploring Solutions—Inquiry Illuminated.docx
- Exploring Solutions—Inquiry Illuminated.pdf
- Frayer Model—Inquiry Illuminated.docx
- Frayer Model—Inquiry Illuminated.pdf
- Instructional Strategy Note Catcher—Inquiry Illuminated.docx
- Instructional Strategy Note Catcher—Inquiry Illuminated.pdf
- Overcoming Barriers—Inquiry Illuminated.docx
- Overcoming Barriers—Inquiry Illuminated.pdf
- Presentation Slides—Inquiry Illuminated.pptx
- Questions—Inquiry Illuminated.docx
- Questions—Inquiry Illuminated.pdf
- This Will Be a Success If—Inquiry Illuminated.docx
- This Will Be a Success If—Inquiry Illuminated.pdf

Materials

- Presentation Slides (attached)
- This Will Be a Success If handout (attached, one half page per participant)
- Questions handout (attached, one half page per participant, print front and back)
- Chat Stations Posters (attached, one set per session)
- Exploring Solutions handout (attached, one per participant, print front and back)
- Overcoming Barriers handout (attached, one per participant)
- Components of Authenticity - Inquiry-Based Learning research brief (one per participant, print front and back)
- Frayer Model handout (attached, one per participant)
- Instructional Strategy Note Catcher (attached, one per participant)
- "What's a GMO?" LEARN Narrative handout (linked, one per participant)
- CERTIfy Your Thinking handout (attached, one per participant)
- Discourse Moves handout (linked, one per participant, print front and back)
- Sticky notes (two different colors per participant)

20 minutes

Engage

Use the attached **Presentation Slides** to facilitate this professional learning session.

Display **slide 3**. As participants enter the room, distribute one copy of the **This Will be a Success If** handout to each person. Invite participants to read the displayed slide and respond to the prompt using the This Will Be a Success If... strategy. Participants are to add one thing they should do individually on the handout under the **I do** section, one thing the whole group should do under the **We do** section, and one thing the facilitator should do under the **You do** section.

Allow participants time to respond to the prompt.

Facilitator's Note: Guiding the Activity

Prepare for a variety of responses from participants. Participants may mention things that you plan to cover in the session, or they may mention things outside of the scope of the session.

For example, if a participant shares that they are looking forward to learning new strategies they can use in their classroom, respond that strategies will be a part of the session and all participants will receive an Instructional Strategy Note Catcher handout.

If a participant mentions something that will not be included in the session, consider explaining that there will not be time to cover that topic, but other resources on the topic are available. You may consider pointing them towards resources available through LEARN.

Transition to **slide 4** and introduce the Establishing Norms instructional strategy. Explain that participants' responses to the prompt are intended to be used to create the norms. Invite participants to form small groups of three to four people and discuss their responses. Allow groups time to discuss then invite them to share out their main ideas.

As groups share out main ideas, organize them under common themes shared among the ideas. Continue to organize each group's ideas in this way, creating new theme categories as needed. As participants share ideas, ask the whole group if they agree with the idea and would like to add it to a theme.

Once each group's ideas have been discussed, agree on a singular main idea for each theme and add that to the list of norms on **slide 5**.

After the set of norms has been established, explain to participants that the Establishing Norms instructional strategy encourages group discussion and invites buy-in from participants or students. Explain that the process of setting norms encourages learners to identify their own behaviors and needs as they consider what behaviors and settings support their own learning.

Sample Session Norms

- Focus on ideas rather than personalities.
- Be open-minded.
- Take turns speaking.
- Listen actively.
- Begin and end the session on time.
- Provide opportunities for everyone to share ideas.

Transition to **slide 6** and ask participants to find a partner. Give each participant a copy of the **Questions** handout and direct their attention to the Round 1 section of the handout.

Explain to participants that they will have 60 seconds to discuss the questions on the handout with their partner. Encourage participants to use their personal experience with facilitating student discussions as they take turns asking and answering questions. Explain that pairs should attempt to discuss every question on the handout within the time limit. Emphasize that they only have sixty seconds to get through the list together and imply a sense of urgency. Once the directions have explained, start the 1-minute timer on the slide.

Facilitator's Note: Participant Responses

The questions for this portion are questions that can be answered with a simple "yes" or "no." Participants are expected to answer with a yes or no, but do not tell them that those are the type of responses they are expected to give.

After time is called, show **slide 7** and direct participants' attention to the Round 2 portion of their handouts. Explain that participants are now to discuss this new set of open-ended questions with their partner, and that they have the same amount of time to do so. Begin the 1-minute timer on the slide and allow them time to converse.

After the second round, display **slide 8** and invite participants to compare and contrast their experiences with both sets of questions. Emphasize how open-ended essential questions can support student discussion by allowing them to make deeper, personal, and creative connections with the content opposed to questions that demand a succinct response.

Display **slides 9-10** and introduce the essential question and learning goals.

25 minutes

Explore

Facilitator's Note: Activity Preparation

Prior to the activity, create four Chat Stations around the room by hanging each of the attached **Chat Stations Posters** in different locations around the room. Ensure that there is enough space at each station for groups of four to gather around the poster. Print additional posters for larger groups, if space allows.

Give each participant a copy of the attached **Exploring Solutions** handout and organize participants into groups of four. Display **slide 11** and introduce participants to the Thinking Hats instructional strategy. Draw participants' attention to the four chat stations around the room and explain that they will visit each station with their group. Explain that at each station they are to assume a different role, or Thinking Hat, for each discussion so that each group has one type of every role. Allow group members a moment to choose their Thinking Hats for the first station.

Assign each group to a different chat station. Display **slide 12** and invite groups to discuss the scenario represented by the image at their station. Remind them to wear their Thinking Hat and approach the image from that perspective. Explain that as they discuss the image they should record their peers' responses on their handouts. Begin the 5-minute timer on the slide and allow groups time to discuss the image at their stations. Once time is up, have groups rotate stations and remind them to choose a new Thinking Hat for that station. Repeat this process until participants have visited each station and remind them to change their roles during each rotation.

After participants have visited all four stations, transition to **slide 13** and facilitate a group discussion on the following prompts:

- What scenario did you identify at each station?
- What strategies do you believe can address these barriers to productive discourse?

Facilitator's Note: Guiding the Activity

Each poster represents the following scenario:

- Poster 1: Students are afraid to be wrong.
- Poster 2: Students don't talk with one another.
- Poster 3: Student groups don't stay on topic.
- Poster 4: Students don't share out or volunteer answers.

After discussing the prompts, distribute one copy of the **Overcoming Barriers** handout to each participant. Explain that the K20 LEARN strategies listed under each scenario can be used to overcome barriers to productive discourse.

20 minutes

Explain

Transition to **slide 14** and organize participants into groups of four. You may choose to have them remain in their previous groups or ask them to create new groups. Distribute one copy of the **Components of Authenticity - Inquiry-Based Learning** research brief and one copy of the **Frayer Model** handout to each participant. Invite participants to read the research brief individually.

Transition to **slide 15** and draw participants' attention to their Frayer Model handout. Invite participants to answer the following prompts as a group on the handout based on their understanding of inquiry-based learning:

- **Define:** Write a definition of inquiry-based learning (IBL) in your own words.
- **List the Characteristics:** List three to five essential characteristics of IBL.
- **Draw a Visual Representation:** Sketch a scene or symbol that represents IBL.
- **Reflect:** Give an example of what IBL looks like in your classroom.

Allow participants approximately fifteen minutes to complete their Frayer Model then invite participants from each group to share out one quadrant of their model. Once all participants have shared, review the Frayer Model instructional strategy and explain that this method can be used in the classroom to help students organize prior knowledge.

20 minutes

Extend

Facilitator's Note: Activity Preparation

Prior to this activity, download and print the lesson narrative for the "What's a GMO?" LEARN lesson. Download the narrative by navigating to the lesson and selecting the **Download PDF** button.

Display **slide 16** and distribute one copy of the **"What's a GMO?" LEARN Narrative** handout to each participant. Invite participants to skim through the lesson and identify instances of inquiry-based learning. Allow approximately five minutes for participants to review the lesson. As participants read, distribute one copy of the **CERTIfy Your Thinking** handout to each person.

Transition to **slide 17** and inform participants that they will be participating in the debate found in the Extend portion of the lesson. Direct participants' attention to their handouts and explain that they should decide whether they support or oppose GMOs then complete first three sections of their handout labeled "Claim," "Evidence," and "Reasoning." Notify participants that they have three minutes to fill in those portions of the handout, then start the 3-minute timer on the slide.

Display **slide 18** and use the Establishing Norms instructional strategy to establish norms for the debate. After norms have been agreed upon, divide the room into two sections and ask participants to move to one side of the room if they support GMOs or the other side if they oppose GMOs. Use the tips found in the Facilitator's Note below for suggestions on guiding the debate. Monitor participants throughout the debate to ensure that they adhere to the established norms.

Facilitator's Note: Guiding the Discussion

Use the below listed procedures to assist with facilitating the debate.

1. Choose a side to start the discussion. Consider starting with the side with fewer members.
2. Invite one member from that side to share their claim along with one piece of supporting evidence.
3. Invite one member from the opposing side to provide a rebuttal with one piece of evidence.
4. Continue with this process alternating between sides, each time asking a different person to share a unique piece of evidence. Continue for five to ten rounds.
5. After each person has shared, ask if anyone from either group would like to switch sides based on the evidence that has been presented.
6. Allow the final groups 30 seconds to discuss their closing argument as to why their side is correct and to select a spokesperson for their group.
7. Invite a spokesperson from each group to share their side's final statement.

Display **slide 19** and explain that now that participants have had the opportunity to test or defend their claims, they should complete the final row of their handout labeled "Test/Improve."

If time allows, ask for volunteers to share out their improved claims. Review the C.E.R.T.I.Fy Your Thinking instructional strategy and explain that this strategy encourages students to use evidence, as opposed to the opinions of others, to draw their own conclusions about a topic. Additionally, discuss how productive discourse like this debate can be beneficial for students' learning.

Finally, distribute a copy of the **Discourse Moves** handout to each participant. Explain that they can use the questions and prompts on the handout to encourage healthy discourse among students.

15 minutes

Evaluate

Facilitator's Note: Activity Preparation

During this portion of the session, participants reflect on what they learned about inquiry-based learning using the How Am I Feeling? What Am I Thinking? instructional strategy. There are multiple ways you can facilitate this activity based on your number of participants, session space, or time constraints. Consider the following options:

- **Sticky Notes:** Invite participants to record their thoughts on sticky notes and post them in a location where other participants can read them. The narrative below includes directions for using the strategy with sticky notes.
- **Mentimeter:** Create a Mentimeter poll that allows for open-ended responses. Participants can respond to the prompt and view others' answers.
- **Interactive version of How Am I Feeling? What Am I Thinking?:** To prepare K20's digital version of this strategy, follow the steps below:
  1. Access the URL https://is.k20center.ou.edu/strategies/how_am_i_feeling_what_am_i_thinking
  2. Select the "Continue" button.
  3. Fill in the text box with the prompt "How am I feeling about creating and using inquiry-based learning? What am I thinking about creating and using inquiry-based learning?"
  4. Click the "Post" button.
  5. Share the link or QR code with participants.
  6. Click the "Continue" button to view responses.
  7. On the final screen, you can choose to hide names when sharing responses, share certain responses, and share selected responses on participants' screens.

If you have chosen to use a digital option, update **slide 20** with your QR code or link, or insert a new slide with this information.

Display **slide 20** and pass out two different-colored sticky notes to each participant. Invite participants to respond to the following prompts:

- How am I feeling about creating and using inquiry-based learning?
- What am I thinking about creating and using inquiry-based learning?

Indicate to participants on which color of sticky note they should write each response. Ask participants to write their response to each prompt on the specified sticky note, then place their sticky notes in a designated location.

Review participant responses. If time allows, address any of the responses and clear up any remaining questions about the session.

Transition to **slide 21** and distribute the **Instructional Strategy Note Catcher** handout. Invite participants to reflect on the instructional strategies used in the session and consider the impact those strategies had on their understanding of or approach to the content, then fill in their thoughts in the first column.

Invite participants to outline how they plan to integrate each strategy into their teaching practices in the second column. Ask for volunteers to share out their responses.

Research Rationale

Inquiry-based learning encourages students to explore, question, investigate, and analyze relevant information through collaboration and problem-solving. This approach integrates real-life applications and requires students to use high-level cognitive skills (Nachtigall et al., 2022). Throughout the process, teachers act as facilitators, providing academic vocabulary, using guiding questions to foster meaningful connections and ensuring that students avoid common misconceptions as they engage with the content (Chatterjee et al., 2009; Kuhlthau et al., 2015; Vlassi & Karaliota, 2013). Through open-ended questions and discourse, students develop stronger metacognitive skills and gain a deeper understanding of complex issues (Chiu, 2008; Michaels et al., 2008).

Resources

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- Vlassi, M., & Karaliota, A. (2013). The comparison between guided inquiry and traditional teaching methods. A case study for the teaching of the structure of matter to 8th grade Greek students. *Procedia-Social and Behavioral Sciences, 93*, 494–497.