Professional Development Situation: Training

Skill Focus: Facilitating Inclusive Learning Experiences

Time Required: 90 minutes

SEEING YOUTHS' STRENGTHS

Participants will do the Parachute Design Challenge to learn strategies for preparing inclusive STEM learning opportunities.

Agenda

Welcome & Introduction—10 minutes
Hands-On Learning—40 minutes

- Parachute Design Challenge

Seeing Students' Strengths—30 minutes
Conclusion—10 minutes

Materials

- Flip chart paper and markers
- Pens for participants
- Blank paper for name tents
- Paper for each person to write a few paragraphs
- Materials for the Parachute Design Challenge

Before the Session

- **Read this training guide** to become familiar with the content and allow time to personalize the activities to best suit your presentation style. Read the informational materials.
    - *Italics indicate text that can be read aloud to participants.*
- Send reminder email about the training. Determine if any participants require accommodations (sight; hearing; etc.).
    - *The next professional development opportunity to enhance our STEM skills will be on DATE at TIME at LOCATION. Our focus for this session will be "Facilitating*

Inclusive Learning Experiences". Let me know if you require any accommodations to participate in the training. I am happy to answer any questions you have and look forward to seeing you at the workshop. I can be reached at CONTACT INFO.

- Gather all materials needed for the training.
- Develop a list of possible questions participants might have during the training. Create potential responses to be explored through informal conversation. Review any key terms or ideas that may be unclear.

Training Outline

Welcome & Introduction (10 min)

- Greet participants as they arrive. Make sure everyone feels welcome and comfortable.
- Introduce yourself and the focus of the session: "Facilitating Inclusive Learning Experiences".
- Ensure participants are aware of the locations of restrooms facilities, refreshments, etc.
- Pass out blank paper for participants to create name tents.
    - *To introduce ourselves we are going to do two things:*
      1) Fold a piece of paper into three sections to make a name tent—please write your name on one side.
      2) On the other side, write about a time you made a mistake. It could be a silly mistake, small mistake or big mistake. Be sure to only write something you feel comfortable sharing with your group.
- Have groups share their experiences.
    - *Does it make you feel vulnerable to talk about times when you fail? A lot of our youth feel vulnerable in our programs. This can be because of some kind of stigma they feel they have due to their status in school, like "ELL" or "SPED." They can also be shy or afraid of being bullied. We are going to spend the next part of the session talking about youth who might feel vulnerable or afraid of failing in your program, and we'll strategize about how we can help them.*

Reflecting on my Practice (30 min)

- This activity involves your participants thinking about their youth and reflecting on how they foster inclusive environments for them.
- Make sure each participant has a writing utensil and a piece of paper. They will be writing about 2 paragraphs about 3 youth who challenge them to be better facilitators.

- *Our youth come to us from different backgrounds than we've experienced, and sometimes these differences can make for misunderstandings or challenges. We're going to think today about 3 youth in your program who offer you the biggest challenges in your day-to-day facilitation. Go ahead and write a fake name for each of these youth on your paper.*
- *Now write one paragraph for each of them about what you think their major STRENGTHS are. What do you think these youth bring to your program that makes them unique, precious, and good at something? If you need to chat with someone else who knows that youth (if they're in the room) that's great.*

- Allow several (6-7) minutes to **write**.
- Invite participants to **share** their vignettes about these youth with a partner.
- The next step is to have participants write about these youths' learning needs.
  - *What can you do in your setting to help these youth have success?*
- Pass out this list of inclusive strategies.
  - *This list of strategies might give you some ideas of ways to make your program more inclusive.*
- Ask participants to read through the list.
  - *You can brainstorm other things that can help include all youth as well; this is a very short list of possible strategies.*
  - *Out-of-school learning is really important for youth because it allows them a chance to engage in STEM without worrying about being graded or evaluated or tested. It also offers a positive, hands-on experience that they might not get during the school day.*
  - *What kinds of things did you think of doing to support the youth you wrote about? Share with a partner.*
- As a whole group, invite participants to share one great story they heard from a peer. (They can't share their own; this encourages careful listening and appreciation of others' ideas.)
  - *Now we are going to transition to an activity where you'll actively try to include others in your group.*

Hands-on Learning (40 min)

- Set out materials for the Parachute Challenge.
- Part of the project is for groups to collaborate and decide which materials are best to use. Be sure to have at least 2-3 choices in materials and supplies. Display the materials in an area where participants can easily see what is available and easily collect materials as they decide which ones to use. This activity will have them begin individually, then work with a partner. The group can grow to up to 4-6 people. **Each time the group**

grows (1 to 2; 2 to 4), members will need to re-negotiate which design elements are most important and which materials to use. This is to emphasize collaboration, cooperation and the value of multiple perspectives. It is also to show the participants how difficult it is to maintain a positive social environment. How do we tell someone we don't agree with them? These are things that will happen in their own setting. If it is difficult for them, emphasize how difficult it is for the children in their settings.
    - *You will start out the activity today working on your own, next with a partner, and then in a small group. Pay attention to the strategies and interactions of your group.*
- Transition to doing the parachute challenge. Distribute the Participant Copy of the Parachute Design Challenge to each group.
    - *As you do the Parachute challenge, you'll work on your own prototype for a while but then you'll be challenged to join groups with someone else and you'll have to let go of some of your ideas to make the best possible parachute. You might disagree but try to include each other by using positive talk and by keeping your talk about your great ideas.*
- Allow plenty of time to do the challenge (about 10 minutes solo, 10 minutes in a pair, and 10 minutes in a group of 4).
- At the end of the activity, take time to reflect.
    - *How did your ideas change as a result of others' ideas?*
    - *Was everyone included as the group grew? What could have been done differently?*
    - *Would you say that including other people's ideas resulted in a stronger product?*
    - *Can we agree that it's productive to include everyone?*

Conclusion (10 min)

- Go around the room and ask participants to share one take-away they are leaving the session with.
    - *What helped you think hard about inclusive learning environments for your youth? What will you try next?*

After the Session

- From notes you took on the pieces of chart paper, compile a list of strategies for organizing, recording and documenting experiments/experiences shared by the group.
- Within 2-3 weeks of the training, email to all participants. Include the list of strategies used to support documentation of STEM as a resource of ideas for participants.

- *Thank you for your participation in the recent Click2Science training on "Facilitating Inclusive Learning Environments". I hope you found it useful. Consider meeting with a co-worker, supervisor, or friend to share what you learned. I look forward to continuing our learning at the next session on SKILL/FOCUS on DATE at TIME at LOCATION. Please let me know if you have any questions. I can be reached at CONTACT INFO.*

Want to Earn Credit? Click2Science has teamed up with Better Kid Care to provide continuing education units. Check it out at: http://www.click2sciencepd.org/web-lessons/about

Inclusive Strategies

These facilitation strategies can help all youth have success in your program.

I want to include my youth who:	I can try:
Speaks a language other than English at home	• Encouraging that youth to use their home language in my program (even if I don't know what they are saying) • Giving extra support for writing tasks • Pairing that youth with same-language peers so they can communicate about STEM tasks • Inviting guest speakers from the same ethnic background to share their experiences • Do an example task with students as a whole group before they are expected to perform on their own.
Has an emotional/behavior disorder	• Spend extra time on relationship-building. • Give parents a phone call to ask what kinds of strategies best help that youth feel safe and successful • Celebrate successes (even very small ones) • Pre-teach what kinds of behavior are going to be expected • Group student with positive, supportive peers or ask for a volunteer • Failure (especially in engineering) might be difficult; pre-teach that failure is expected in engineering
Has a learning disability	• Do an example task with students as a whole group before they are expected to perform on their own. • Give the student extra time and/or keep the atmosphere relaxed. • Remain positive and encouraging. • Group student with positive, supportive peers or ask for a volunteer

Parachute Design Challenge – Facilitator Guide

Task: To design a model of an effective parachute—one that lands with its contents safely to the ground.

Purpose:

- Incorporate individual, partner, and group work. Although creating an effective parachute is an important aspect of the project, group cooperation and collaboration are key elements. To make the most effective parachute design, the group will work to incorporate elements of each member's ideas.

Procedure:

- Designate a 'safe space' set aside for designing and experimenting. Design space should have room for groups to sketch and talk. Experimenting space should include chairs or step stools to use for dropping parachutes—ensure there is room to do this safely.
- Set out materials for building parachutes.
    - String (2 different widths or types—ex. Fishing line; kite string; thread)
    - Material for canopy (2 different weights/texture—ex. Paper; clothing
    - material)
    - Load 'basket' (2 different types—different sizes of canister lids or water
    - bottle lids would work)
    - Scissors
    - Tape (to secure load basket to string)—masking or duct tape would work
    - best
    - Material to put into load 'basket' (various types/weights—ex. Small rocks;
    - coins; cotton balls; small figurine)
    - Paper and pencil to record steps and testing data
- Have each participant write down 3 design elements they think are the most important in the parachute's success. (some considerations: materials used to make the parachute; load weight; material of canopy; shape of canopy; height of the drop; etc.)
- Have participants discuss with an elbow partner the design elements they listed. Together they must select just three elements to include in their design.
- Move to groups of 4. Have groups discuss the elements in their designs and select three elements to include in the parachute they will build. (At each point, remind participants of ways to appropriately consider other's viewpoints and offer helpful insight/solutions to determine the most important design elements.
- Group members should be encouraged to 'push' each other's thinking in respectful ways. Use 'What if,' Could we try..' 'I wonder…') After the top 3 elements have been determined by the group, have them gather the supplies they need to make and test

their model parachute. Testing and retesting should take place with at least 2 elements (height of drop and weight of load) being considered.

- Provide a 10 minutes warning when time is running out. Encourage groups to re-design their parachute for one last testing and record their final design along with changes them made during the testing process. (At each point, remind participants to appropriately consider other's viewpoints and offer helpful insight/solutions to determine the most important design elements. Encourage participants to 'push' each other's thinking in respectful ways. Use 'What if,' Could we try __" 'I wonder…').
- Each group needs to document steps and decisions they've made based on group input and data collection during testing.
- After testing is completed, have each group select their top 3 design elements to make an effective parachute. Then have two groups join together to compare their lists. Have groups provide feedback in the form of 3 stars and a wish (3 positive things and 1 thing that could be improved/modified).
- Although there are many scientific elements that could be explored in this project and could be used in programs to encourage further STEM investigations, purpose of this training is to focus on risk taking; making mistakes; respect for self and others; collaboration; and building a knowledge base incorporating multiple perspectives. Throughout the planning and implementation these concepts should be emphasized and reinforced to participants to remind them of how to build inclusive learning experiences.

Reflective Questions for Parachute Project

- (To be completed individually on their own as a way to reinforce collaboration; respect; and overall safe spaces)
- How did your group come to an agreement of which design elements were most important?
- Did your design elements change after talking/planning with others? How did you benefit from this?
- How did your group benefit from being able to test, re-design, and re-test your design?
- Did you feel valued in your group (able to make contributions)? Why or why not?
- What strategies did you use to show others you valued their input?
- When facilitating the activity with youth, if at any point if a child feels unsafe in the environment (physical space, materials, self, interaction with others, etc.) they should seek the help of an adult in the program.

Parachute Design Challenge – Participant Copy

Task:

To design a model of an effective parachute—one that lands with its contents safely to the ground.

Criteria:

- Parachute lands with its contents safe.
- Group members demonstrate respect for self and others (physical, social, emotional)
- during the process.
- The group incorporates elements of each member's ideas.

Procedure:

1) Write down 3 design elements you think are the most important in the parachute's success. (Some considerations: materials used to make the parachute; load weight; material of canopy; shape of canopy; height of the drop; etc.)
2) Discuss your design ideas with an elbow partner. Together, make a new list of 3 design elements to focus on.
3) Join another set of partners to create a group of 4. Together, make a new list of 3 design elements to focus on. (Group members should 'push' each other's thinking in respectful ways. Use 'What if,' Could we try…' 'I wonder…')
4) After your group has selected the top 3 elements to include in your design, gather the supplies you will need and proceed with building and testing your parachute design. Testing should include at least 2 elements being considered (height of drop and weight of load).
5) Discuss what you learned from testing and together create a plant to re-design your parachute for one last testing. You must document steps and decisions you've made based on group input and data collection during testing. (Group members should 'push' each other's thinking in respectful ways. Use 'What if,' Could we try...' 'I wonder…') After testing is completed, select your group's top 3 design elements to make an effective parachute.
7) Join with another group and compare your top 3 design elements. Provide feedback in the form of 3 stars and a wish (3 positive things and 1 thing that could be improved/modified).

Reflective Questions for Parachute Project

- How did your group come to an agreement of which design elements were most important?
- Did your design elements change after talking/planning with others? How did you benefit from this?
- How did your group benefit from being able to test, re-design, and re-test your design?
- Did you feel valued in your group (able to make contributions)? Why or why not?
- What strategies did you use to show others you valued their input?