

Challenges encountered and lessons learned by mediators during cogenerative dialogues between scientists and <u>high school students</u>

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INTRODUCTION

Student-scientist partnerships

- Allow students to participate in more advanced scientific practice.
- Help students to exercise their critical thinking and understand the contribution of scientific practice to the society.

(Lawless & Rock, 1998)

PROBLEM

 Working with scientists can be difficult for students due to the complexity of scientific language and advanced knowledge used by scientists (Shein & Tsai, 2015).

COGENERATIVE DIALOGUES

- Cogenerative dialogues (cogen) value respect and differences to accomplish collective decisions (Tobin, 2006).
- Helps teachers to build a more personal and trust worth relationship with students (Luciano Beltramo, 2017).

OBJECTIVES

- Understand what challenges cogen mediators encountered.
- Understand the lessons they learned.
- Provide suggestions for future cogen mediator practices.

RESEARCH CONTEXT

- 2 years
- 7-month internship (10 Saturdays and 30 week days in summer)
- 6 University STEM faculty members
- · 72 High school students
- Open inquiry projects
- · Proposal and final presentations
- 8 cogen mediators
- · 22 one-hour cogen sessions
- This material is based upon work supported by the National Science Foundation under Grant No. DRL 1322600 - "Transforming Students' Partnership with Scientists Through Cogenerative Dialogues."

DATA ANALYSIS AND DATA SOURCES

- Through a thematic analysis, we classified data collected from video recorded individual interviews with eight cogen mediators
- · Interview questions
 - 1. What are some challenges you encountered as a cogen mediator?
 - 2. If you were to be a cogen mediator again, what things would you do differently?
 - 3. What suggestions do you have to improve future cogens?
 - 4. What are some lessons you learned as a cogen mediator?
 - 5. What advice would you give to future cogen mediators?
 - 6. What trainings do you think a person needs in order to be a successful mediator?
 - 7. What qualities should a cogen mediator have in order to be a successful mediator?
- Six phases of thematic analysis (Braun & Clarke, 2006)

Familiarization Coding Searching for Reviewing themes Defining and themes	Writing up
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37.5%

25%

RESULTS

Challenges encountered by cogen mediators

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	1 Participants sometimes did not talk equally or respectfully listen to others	62.5%
	2 Students sometimes shared personal problems that are not directly related to their internship	25%
	3 Authority figures (scientists) did not comply with cogen rules consistently	25%
L	4 Participants had difficulty in expressing their ideas clearly in English	25%

Lessons learned by cogen mediators

1 Be attentive, patient, respectful, empathetic, supportive with participants	100%
2 Have a flexible cogen structure (having different circle settings, period of time, background	87.5%
music) to fulfill students' needs	

- 3 Receive trainings on cogen mediation (e.g., mock cogens, video analysis, discussion on effective mediating strategies, ways to deal challenging situations, personality match)
- 4 Explain specifically to the scientists about their role in cogens, preferred by the program director 62.5%
- **5** Provide a clear definition and expectation of cogen and be on top of the cogen rules and time, 50% be the one to make sure topics are relevant and regulate participants' inappropriate behaviors
- 6 Be willing to confront challenging situations 50%
 7 Have all cogen related materials prepared 37.5%
- 8 Try to learn from participants and enjoy the dialogue as much as possible
- **9** Understand participants' project activities in general and be able to engage in relevant conversations

CONCLUSIONS

- Our analysis identified four common challenges and nine lessons learned by cogen mediators.
- The most frequent challenge mediators encountered is that "participants sometimes did not talk equally or respectfully listen to others."
- The most common lesson learned is that cogen mediators need to "be attentive, patient, respectful, empathetic, supportive with participants".

DISCUSSION & IMPLICATION

- These findings can be used to provide a more structured and carefully guided training for cogen mediators to ensure the quality of dialogue mediation.

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