



#DRL-1322600

Transforming Students' Partnership with Scientists Through Cogenerative Dialogues

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Who's Involved?

- **University of Texas at El Paso** (scientists, engineers, graduate students, undergraduate students, researchers)
- **El Paso Independent School District** (Central Office, Irvin High School, Chapin High School, Andress High School, Burges High School)

Main Audience

- ~172 high school students
- ~10 faculty scientists/engineers
- ~24 young scientists

Project Description and Activities

This project investigates how Co-generative Dialogue (cogen), a respectful conversation among students and scientists for improving teaching and learning, may produce more engaging and productive interactions and learning environments.

Work With A Scientist Program

- 2014 cohort, 2015 cohort, 2016 cohort (36 students/cohort)
- 7 month program (Jan-May: 10 Saturdays, Jun-Jul: 30 days)
- Projects based on students' interests
- Regular cogenerative dialogues
- Proposal and final report presentations

Project Questions and Evaluation Results

1. What are participants' cogen salient experiences?

(1) voicing issues and concerns in a respectful and supportive space, (2) learning different perspectives from different stakeholders, (3) working together as a team to improve science internship teaching and learning, (4) demonstrating care and patience about high school students' science learning, (5) fostering a stronger relationship between scientists and high school students.

2. What are discussion topics during cogen?

(1) **peripheral support**, (2) **oral instruction**, (3) **group communication**, (4) personal needs, (5) **scientific practice**, (6) **scientific knowledge**, (7) scientific equipment, (8) pedagogical materials.

3. What are useful mediating strategies to generate productive cogen?

(1) **invite participants to provide their rationale and clarification to justify their ideas**, (2) provide examples of possible ideas in order to prompt others' own ideas, (3) recognizes participant's ideas, (4) translate ambiguous ideas "for others", (5) **summarize and organize ideas for "collective discussion"**, (6) **check validity and feasibility of idea**, (7) invite participants to think on behalf of other stakeholders' perspectives, (8) check other stakeholders' perspectives, (9) lead the conversation back to the original topic/issue/question when off topics, (10) invite less talking participants to engage in dialogues.

Lessons Learned: Challenges and Insights

1. Participants dominated the conversations during cogen → **enhance mediating strategies & record turns taking**
2. Participants had difficulties of coming up ideas for discussions → **story telling & back up topics for discussions**
3. Participants thought that cogen was useless because the discussion results were not implemented → **add a session to discussion the quality of implementations suggested from previous cogen**
5. Participants could not differentiate cogen from other conversations → **add an cogen introduction session & provide handouts about cogen & add cogen heuristics to evaluate cogen quality**
6. Cogen mediators sometimes had a hard time to mediate dialogues → **Education RA with intensive training serve as cogen mediator**

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