An Engaging Partnership Between High School Students and Scientists

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Research Question

How can scientists create a friendly and engaging learning environment for high school students?

Research Context

Work With A Scientist Program (WWASP) is an internship staffed with a lead scientist, 2 science RA's and 2 educational RA's. There are 9 high school students divided into 3 groups working in an immunology lab.

Purpose

Masson et al., 2016 suggests that a single negative confrontation between a mentor and a mentee can leave a damaging overall effect. Hence, our purpose is to point out our strategies that can be utilized in order to create an enriching and productive learning environment.

Methods

- Ethnographic data
  -Pre and post interviews
  -Field notes, videos and pictures
  -Artifacts collected throughout the program
- Thematic analysis can be used to analyze qualitative information and to systematically gain knowledge and empathy about a person, an interaction, a group, a situation, an organization or a culture. (Komori)

Co-generative Dialogues (Cogen)

"Co-generative Dialogues are conversations cogenerated by different stakeholders to reflect on participants' experiences and help them reach collective decisions about the rules, roles, and responsibilities that govern their partnerships".- Pei-Ling Hsu

Rules and Structure

- Equal turns
- Show respect and listen to others
- Come up with a plan of action to be implemented in further practice
- Different perspectives are valued in my group

1. Last Cogen
2. Challenges encounter during the day
3. Positive features of the day
4. General comments or notes

Benefits of Co-generative Dialogues

1. Creates a welcoming environment.
2. Students feel comfortable asking questions.
3. Students become confident giving feedback to peers and mentors.
4. Students further engage in the program
5. Fosters stronger relationships between students, RA's, and scientists.
6. Customizes the learning style to the lab.
7. Provides a family-like environment

Conclusion

- A family-like environment provides a safe space where students will feel more confident asking questions, giving feedback to peers and mentors, and allows students to get involved in the internship or class.
- This study, specifically, will help school teachers and counselors to consolidate their relationship with students, in order to create a family like classroom environment in which the students are involved in their learning.
- In addition to that, the use of Cogen and creating this type of environment can be useful in any University environment. College education relies on the engagement of the student. Cogens will help build a Professor-Student and overall class relationship.

Strategies to efficiently engage with students	Examples
1. Listen to students' concerns and care about the student's well-being.	-Scientist displays genuine concern for students and RA's well being during and after the program. For instance, two students shared an experience in which they were self injuring during Cogen. In order, to assist this students, the scientist spoke with a social worker and a psychologist on proper ways of handling such a situation. He inquire of the RA's state of mind and inform the PI of the issue.
2. Identify students' strengths to boost their self-esteem.	-At times, students need a little encouragement regarding public speaking and/or note taking. The scientist and the science RA's encourage the students to practice presenting to their lab partners. Also, a fellow student presented to everyone on "how to take notes" due to their confidence in note taking.
3. Take student's ideas into consideration for developing scientific projects.	-In one instance, a group was not satisfied with their project. The scientist researched the students' ideas to find a more suitable project.
4. Provide constant feedback to students' performance	-The scientist always uses Cogen to reassure the students when they were doing something right and never hesitated to express when he was proud of them.

References

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