GIFTS: Role-playing in Service of Developing Psychological Safety in Teams

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GIFTS Work in Progress:
Role-playing in Service of Developing Psychological Safety in Teams

Introduction

Teamwork is a vital professional skill and a key student outcome identified by the Accreditation Board for Engineering and Technology (ABET) [1]. Psychological safety is a shared belief held by team members that the team is safe for interpersonal risk-taking [2]. In a student team, psychological safety manifests in team members' abilities to share ideas, ask for help, seek feedback without being made to feel shameful or even to feel safe to bring up concerns at all. Though in different stages of development, the authors are currently employing role-play in their respective design courses to provide students practice in fostering psychological safety and are sharing this active learning approach in a GIFTS presentation. This active learning approach is used to stimulate higher order thinking in the affective domain and deepen students' understanding of team dynamics. Notably, both authors encourage student teams to acknowledge and implement psychological safety in their teams in design courses.

The authors of this work represent two different institutions: Rose-Hulman Institute of Technology (Rose-Hulman) and Colorado School of Mines (Mines). This collaboration is in its early stages, currently centered around the exchange of unique experiences between the two institutions. While existing literature includes numerous studies on psychological safety in workplace settings, there are comparatively fewer publications addressing psychological safety in higher education contexts [3]. Through sharing their practices and experiences, the authors aim to contribute to closing this gap in literature. In the GIFTS presentation, the authors plan to share their experiences to date.

Experimental Methods and Project Approach

At Mines and Rose-Hulman, the authors have developed scenarios for role-playing related to psychological safety. Role-playing in education must be supported by a script that the players adhere to, because the general aim is for students to learn from playing out a specified scenario [4]. Samples of these scripts are included in the Appendix and additionally through the KEEN website.

Implementation at Mines

In this experimental stage, Mines focused on Lencioni's *Five Dysfunctions of a Team* [5]. A visual representation of these dysfunctions is seen in Figure 1. The audience, who are also the players of this role-play activity, are students in a first-year design course which are put in teams for one semester. In this activity, each team is assigned one of the five dysfunctions to simulate and present to the class. Together after each team presents, the class then discusses possible solutions. The goal of this exercise is to help students recognize the potential consequences of poor team dynamics early in the semester, reinforcing the importance of using the Team Safety Brief —a tool developed by the author at Mines—to support healthy, effective teams based on psychological safety [6]. Applications of the Team Safety Brief are reinforced throughout the

semester. The rollout of this tool and how it relates to the role play activity will be provided in the GIFTS presentation.

Figure 1. The five dysfunctions of a team by Lencioni, in a hierarchal visual format [5]

Implementation at Rose-Hulman

At Rose-Hulman, freshman students were introduced to psychological safety through an affective-domain focused intervention implemented in an Introduction to Engineering course in the Civil and Environmental Engineering Department. The students were introduced to three attitudes to practice psychological safety in one, 90-min active class presentation on the first day of the class. The psychological safety instruction teaches the following attitudes: (1) every idea has the potential to contribute to a positive outcome, (2) questioning an idea can provide valuable insight, and (3) applying the brake can be productive. Throughout the training, students practiced the three attitudes using role-play activities. In these role-play scenarios, students were asked to take the perspectives of design engineers and of various team members to practice saying the words and to experience firsthand how to manage potential conflict that could develop in their team experiences [7]. Specific intervention materials can be obtained from Engineering Unleashed KEEN Card #3679. A vetted, retrospective gains survey was administered after the class, and students' experiences were compared to a non-intervention cohort. More details on this will be provided in the GIFTS presentation.

Next Steps

By sharing notes on these pedagogical approaches to psychological safety in teams within a higher education setting, the authors hope to connect with groups beyond their own departments to explore opportunities for scaling up and out.

Further Development at Mines

- Recognizing the value of helping students develop professional skills of fostering psychological safety in teams, there are plans to collaborate with the Professional and Scholar Communities Applied Learning (PASCAL) Center to:
    - Pilot a “pop-up” workshop focused on intentional, guided teamwork.
- PASCAL has existing partnerships with the Cornerstone Program (which oversees the first-year design course) offering professional development opportunities. Hence the plan for this new initiative is to:
    - Leverage materials that were originally developed by the author.
    - Aim to expand these materials across other sections of the course.
    - Collect feedback through surveys to inform future improvements.

Further Development at Rose-Hulman

- Develop role-play scenarios to help students practice conflict navigation skills.
- Acknowledging that while psychological safety can reduce and help recognize conflict early, it cannot eliminate it entirely.
- Equip students with tools and practices to reestablish psychological safety when conflicts arise.
- Integrate the high-impact practice of story-driven learning to:
    - Help students better understand themselves and others.
    - Support stronger, more effective team dynamics and teaming success.

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Appendix

Sample Scenario of the Five Dysfunctions of Teams

Absence of Trust
Scenario:
An engineering design team is tasked with developing a water filtration system for a rural community. During the initial phase, one team member miscalculates the filtration rate, but instead of admitting the mistake, they remain silent. Another team member, feeling insecure about their CAD modeling skills, avoids sharing their designs, fearing judgment. Over time, team members begin to assume others are withholding information or intentionally cutting corners. Meetings become tense, with little collaboration, and members dread attending because they feel unsupported and judged.

1. **Analyst:** Miscalculates the filtration rate but hides the mistake out of fear of judgment, leading to flawed data that affects design decisions.
2. **CAD Specialist:** Avoids sharing their designs, worrying about criticism of their modeling skills, and holds back on collaboration.
3. **Project Manager:** Notices the team's lack of openness but avoids addressing it, hoping the issues resolve themselves.
4. **Researcher:** Becomes suspicious that team members are intentionally withholding critical information, which sours relationships further.
5. **Fabrication Lead:** Feels unsupported during meetings, leading to disengagement and reluctance to contribute ideas.

Instructors' Note (related to Team Safety Brief)

Integration with "Empathy, Elevate, & Empower"

- **Practice Empathy:** Encourage students to actively listen and validate their teammates' concerns or struggles. For instance, during project check-ins, allocate time for each member to share challenges, ensuring no one feels left out or judged.
- **Team Rituals:** Start every meeting with a brief "team pulse check" where members share something they're proud of or a challenge they're facing. This builds trust and openness over time.
- **Team Norm Alignment:** Reinforce the importance of empathy and mutual support to create a high-performing and inclusive culture.