A case study of cultural change: learning to partner with students

Fatima Abdurrahman, Chandra Turpen, and Diana Sachmpazidi
Department of Physics, University of Maryland, 4150 Campus Dr, College Park, MD 20742, United States

This work presents a case study of a team of students and faculty working to increase the diversity of their department through cultural change. We focus on the perspective of the two faculty change leaders organizing this team, who received training and continued support by Departmental Action Leadership Institutes (DALIs). DALIs are workshops led by the Effective Practices for Physics Programs (EP3) team that prepare faculty members to lead change efforts in their local departments by forming teams based on the Departmental Action Team (DAT) model. Concurrent to change leaders' participation in DALI, the DAT pursues a change effort to address internal issues relating to undergraduate education.

In this work, we look at how one DAT approaches the practice of "Students as Partners" (SaP), a pedagogical practice that re-positions the relationship between educators and students in the endeavor of learning. While most efforts of SaP illustrated in the literature center curriculum, assessment, teaching, and research as areas of collaboration, this particular DAT used SaP in their efforts to increase the enrollment and retention of underrepresented students in their department. Through a series of interviews with change leaders and observations of DAT meetings, we document the pre-existing and emerging departmental cultures of partnering with students Additionally, we describe the culture of SaP on the DAT that appears to be operating as the transition between these pre-existing and emerging cultures . Finally, we discuss the elements present that enabled a potentially productive attempt at cultural change through SaP.

I. BACKGROUND

The Effective Practices for Physics Programs (EP3) Initiative was established to assist physics programs in departmental change efforts related to undergraduate education [1]. In 2021, the EP3 Initiative team launched the Departmental Action Leadership Institute (DALI), in which participating faculty apprentice into strategies for sustainable institutional change and facilitation practices associated with leading change teams. Two physics faculty change leaders represent each participating department in the DALI, receiving continued support over a year on how to form and facilitate a local Departmental Action Team (DAT) [2, 3]. Within the DAT model, department-level change efforts are led by groups of faculty, students, and/or staff. Through regular meetings over the course of a year or more, DATs work on a single broad departmental issue, such as recruitment, curriculum, or diversity. Supported by their participation in the DALI, the change leaders learn to embody the principles that guide the DAT model in their home departments [4].

The EP3 research group is interested in how a collective, team-based approach to change facilitates elements of cultural change. One of these principles—that students are partners in the educational process—is the focus of this work. The value of this principle is evidenced by a growing collection of literature on the topic of "students as partners" (SaP) [5]. SaP broadly describes efforts within higher education to for students to collaborate with faculty as creators of educational environments, rather than passive participants. This collaboration is characterized by "reciprocal process through which all participants have the opportunity to contribute equally, although not necessarily in the same ways, to curricular or pedagogical conceptualization, decision-making, implementation, investigation, or analysis" [6]. As an example, an SaP effort might consist of students and faculty members developing a new course together. The vast majority of SaP literature reports positive outcomes for students and/or staff in areas including relationships, learning, confidence, and employability [7]. Previous works have even begun examining SaP in the context of DATs [8].

While the value of SaP is increasingly demonstrated in the literature, there remain areas of research that have yet to be addressed. First, most research on SaP focuses on collaboration efforts on topics including curriculum, teaching, and research, with relatively little (<5%) being focused on diversity, equity, and inclusion work [5]. Second, an additional systematic review of SaP literature pointed to cultural change as a necessary area of future work, saying "further consideration of if and how partnership is working to transform institutional cultures more broadly would help to shore up (or complicate) claims about its radical potential" [5]. **In this work, we aim to address both of these areas by presenting a case study of a DAT working on an equity-related issue and examining its potential for cultural change in a department.**

II. STUDY CONTEXT AND ANALYTIC APPROACH

This work is part of a larger project aiming to understand how participation in the DALI and use of the DAT model can transform departmental culture. We examine a case study of the Department of Physics and Engineering at Hemlock University (a pseudonym). Hemlock is a public research university in which about 30% of students are first-generation college students, 84% are white, and 16% indicate a different ethnicity or race. The two faculty change leaders (pseudonyms Harold and Henry) participated in the first iteration of the DALI, launched Spring 2021. With a program review upcoming, Harold and Henry applied to the DALI hoping to receive support as they go through a period of self-reflection as a department. They are the two most senior members of the department, with Harold serving as the current Chair of the department and Henry having served as Interim Chair. In addition to the change leaders, the DAT was composed of two more faculty members, the associate dean of the college, and two URM undergraduate physics majors.

This work draws on data from interviews with the two change leaders. We interviewed each change leader three times in the first year of the DAT. The hour-long interviews consisted of open-ended questions regarding topics including their experiences in the DALI, norms and activities of their local DATs, and their confidence on achieving their team's goals. Additionally, we include notes from researchers' observations of three DAT meetings conducted over Zoom.

The first pass at analyzing these six interviews consisted of identifying transcript segments that discussed the DAT's involvement of students, as well as change leaders' thoughts, recollections, and hopes about partnering with students more broadly. In an attempt to track the departments cultural change regarding partnering with students, these segments were grouped into three temporal categories: the department's previous experiences (or lack thereof) with SaP, the DAT's approach to SaP, and indicators or intentions of future departmental efforts with SaP outside of the DAT. As a shift between pre-existing and emerging approaches to SaP came to light, we conducted an additional pass through the interviews identifying elements that supported the DAT's attempts at SaP. This work focuses on the culture practices of SaP within the DAT, how this partnership may be transforming the department, and elements that enabled the shift.

III. FINDINGS

In the following subsections, we describe the department's culture of SaP in three different contexts. First, we share the change leaders' recollections of what the department's pre-existing cultural practices look like. Then, we report change leaders' stated hopes, expectations, and plans for SaP in the future. Finally, we describe the culture within the DAT and identify elements that may be facilitating the shift from pre-existing to emerging approach to SaP.

A. Pre-Existing Departmental SaP Cultural Practices

Harold and Henry report that prior to the establishment of the DAT, students were largely absent from decision making and change efforts within their department. Decisions were often made unilaterally by the chair or other senior members without consulting other stakeholders. More recently, faculty developed bylaws to vote on departmental issues. When committees were formed to work on an issue, they were composed of only faculty members, with clear delineations between members and leaders. Student input, though generally not a part of the decision making process, was sometimes considered in several ways. First, students submit petitions to the faculty, which faculty would vote on. Second, faculty members would informally ask students they had relationships with (i.e., "favorite students") for their thoughts on an issue. Harold notes that both of these avenues are biased towards students who are comfortable voicing their opinions to faculty and do not represent the full student body. He also notes that faculty sometimes incorrectly believe that they are "tuned into" student concerns and therefore assume they were operating with student input:

> *I think a lot of the faculty feel that we're kind of really tuned in and aware of how students are thinking and what they're feeling, but we're not... Having the students there on the DAT really allows us to get at least a taste of what they're actually experiencing. (HD2)*

B. Emerging Departmental SaP Cultural Practices

At the time of the final interview, both Harold and Henry agree that one of the most significant impacts of the DAT has been their partnership with students. They both intend to adopt the practice of SaP and surrounding norms developed in their DAT more widely in the department, and believe that because they are the two most senior members of the department, they will be successful in that effort. They have presented their DAT's work to the rest of the faculty several times, and report that faculty members outside of the DAT are becoming more receptive to collaboration with students. In addition to plans to continue the work of the existing DAT, they have already identified particular areas (such as recruitment) for which they plan to create new DATs. Both change leaders believe that in the future, students will be an essential part of change efforts in their department, with Henry citing their experience with the DAT as the space in which they learned facilitation skills and developed relationships that will make further collaborations with students possible:

> *I see the work of the DAT and the relationship with the students in itself is valuable, but more importantly, it's setting up a pattern of partnering with students to make change, which I think*

is a healthy direction for the department to move in. (HY2)

C. Cultural Practices of SaP in the DAT

In examining how the DAT approaches partnering with students, two themes emerge. In the first, we consider the role of students within and outside of the DAT, and how they were drawn on as influences, idea generators, data sources, and data interpreters. In the second, we consider the role of the change leaders, and how their norms in the DAT were designed to encourage engagement from student members.

1. Building Ownership: Student Role

Student input informed the goals and methods of the DAT's work at several points. To begin, student members on the DAT played a pivotal role in deciding the group's focus. The DAT was formed to broadly "think critically about underrepresented minorities...and what we can do to better support students who are underrepresented in physics" (HY3). To narrow this down, an early DAT activity had each member read the 2020 TEAM-UP Report for AIP [9], the result of a two year study which sought to understand "the persistent underrepresentation of African American in physics and astronomy in the US," and culminated in five factors that contribute to this issue. In an early DAT meeting, each member ranked the five factors in order of perceived priority. However, rather than averaging all the rankings, the change leaders chose to prioritize the factor that students had unanimously voted for ('belonging'), despite faculty members voting differently and constituting a majority. Harold says of this decision:

> *All the students [ranked belonging] number one or two. There are a couple faculty members that put it further down not realizing that's such an important; you need to feel that you belong...Some of the faculty members kind of, I think, have an idea that we're already doing a good job on that, let's focus on some other things. And I think the students were generally in agreement with that, but they said...the very first thing [students need] is to feel they have a mentor, feel they have somebody to talk to you, feel that they have classmates they can talk to, and feel like they're a part of the community before they can go any further. So I think [the students] were instrumental in making that the thing that we were focusing on. (HD2)*

Once the DAT decided to focus on the factor of 'belonging', they decided to examine old exit surveys and survey current students to understand what areas could be improved. The results of the survey conveyed to change leaders that students have unique awareness of what they need. Harold said:

[Students] came up with some of the ideas of building buddy systems and having some of the upperclassmen mentor first year students, or giving presentations or research talks on how to navigate your first year...Those are those are not topics that any of the faculty came up with...A lot of students are on board with those sorts of things, so they've definitely given some input and things that we didn't think of as faculty members. (HD2)

After the data were collected, student DAT members were responsible for analyzing the results and presenting them to the rest of the DAT. In doing this, students DAT members were able to 'translate' other students' responses for faculty DAT members using their own experiences. Henry gives an example of how the student members offered insight to survey results that faculty alone were not able to make sense of:

[We] would get this data that would seem to contradict itself: why are students [in surveys] saying that, overall, they feel supported by the department, but they also don't think that the advising fully supported them?...The students [on the DAT] were able to kind of talk about their experience of being a student, where you felt like the faculty member was happy to try to work with you to solve a problem that you brought to them, but was also trying to minimize the time they spent working with you... Also, they were able to comment how they noticed things would change the longer they spent in the department. So by the time they were in their third year or fourth year, they felt like their advising sessions were more meaningful and there was more buy in from the advisor, but that the sense you get early in your academic career is that the faculty member is really just like trying to address whatever immediate needs you have and then move on. (HY3)

With the students' interpretation, the DAT was able to both understand what needed to be addressed in their advising structure, and the time at which that need was most critical. As a result, the DAT focused their efforts fully on increasing a sense of belonging for first year students specifically.

In regards to the amount of direction student DAT members provided in this process of identifying and narrowing down a goal, Henry stated that he believes their involvement gave students ownership over their work on the DAT. Speaking about a DAT meeting in which student members presented their analysis of survey data to the rest of the team, he says:

I feel like [that meeting] engaged the students in a way that they had not been engaged before by giving them some ownership...They got to decide themes and stories that they were seeing in the

exit surveys, so I thought it was a great activity for them. (HY3)

2. *Building Engagement: Change Leader Role*

Prior to the first DAT meeting, Henry indicated an awareness of the potential for power differentials to stifle student input on the DAT, saying:

I also worry about the voices of our students, and making sure that their voices are empowered. So [I am] thinking through what are the norms that we can have in place so that student voices can be heard. (HY1)

This early awareness of power dynamics and consideration of norms to mitigate them preceded several practices of centering student voices in DAT meetings. For example, in our in-situ observations of the DAT's meetings, there was a pattern of active facilitation by Henry in which he regularly requested, affirmed, and reinforced student input. One way this happened is through change leaders' frequent solicitations of students' opinions (e.g., "[Student], what did you think of the mission statement?"). A more robust example of this facilitation approach can be seen in an exchange between Henry and a student in a DAT meeting:

Student: So I think a big thing is that the statement would be aimed towards people who are looking at the university, to help other minority students to come.
Henry: Right, so kind of signaling the values of the department? Talking about the kind of space that's here?
Student: Mhm (nods head in agreement)
Henry: I agree, and this is fascinating, [student's name], because we're coming at it from different perspectives, so this could be also useful for the faculty. (DO2)

In this exchange, when the student gives his opinion, Henry first revoices what he understands to have been said ("so kind of signaling the values of the department?"). When the student verifies his understanding, Henry affirms the student ("I agree") and reinforces the student's comment by stating why it's valuable ("This could be also useful for the faculty").

Another norm the DAT established to encourage student engagement was the use of affinity-group based breakout rooms (all DAT meetings were conducted over Zoom). Harold describes this practice in which each group discusses a topic within itself before reconvening with the full team to share across groups:

[We would make] small breakout groups: we have the students break out into one group, all the female members [in one group]... and then

the men over on another one... When we break them into smaller groups everybody has more of an opportunity to participate in their sub group, I think. (HD2)

Harold believes students are as engaged as other members:

During the meetings everybody seems to be talking and answering and adding their input fairly nicely. It seems to be going very smoothly, as far as the students participating. And not feeling like "Oh, I'm just kind of in the background watching and I'm here as a token or whatever," I don't think they feel that way because they do participate. (HD2)

D. Elements Enabling Partnership with Students

We found three categories of SaP enabling elements:

Tools: DALI Principles and Methods. Both change leaders frequently cited their experiences in DALI workshops as supporting their ability to partner with students in their DAT. One aspect of these experiences were the activities that DALI facilitators used in the workshops that change leaders then implemented in their meetings, such as a norm setting activity and a collaborative brainstorming technique. Harold describes these activities that they "pretty much copied" from the DALI as helping to "even the playing field" in their DAT. Additionally, both change leaders described themselves as aligning (or beginning to align) with principles presented to them in the DALI, such as the importance of a shared vision or the necessity of uncomfortable conversations.

Willingness: Change Leader Characteristics. The change leaders' ability to partner with students is likely related to their initial motivations and beliefs, some of which suggest a predisposition to successful partnership. One aspect of this is the way in which both change leaders are student-focused in their work, not only by their own account, but in the words of the other (i.e., both Henry and Harold describe the other as prioritizing relationships with students). Furthermore, both change leaders indicate awareness of their limitations as leaders and a desire to improve. Both Henry and Harold felt inspired by DALI facilitators to learn more leadership and facilitation skills for their work in the DAT and their department.

Opportunity: Departmental Context. Finally, an important aspect of the DAT's work is the particular moment in which it was situated. Harold and Henry began participating in the DALI less than a year after their department chair of over fifteen years abruptly retired. Harold, now the most senior member of the department, filled the position. With the change leaders being the most senior members of the department at this moment of transition, they were able to start their DAT not only with the specific goal of increasing student belonging, but as an opportunity to do what Harold calls "beginning to approach things in a little bit different way". Harold and Henry frequently cited their new positions in the changing department as the opportunity to begin running the department differently, including their use of SaP.

IV.   DISCUSSION

From the change leaders' perspectives and observations of DAT meetings, we see the first glimmers of cultural change in Hemlockâs physics department. First, in Sections III A and III B, we see initial evidence of a shift in departmental culture around SaP, with dramatic differences between past practices and future plans. This shift appears to be facilitated by the DALI-informed approach to SaP in the DAT. We see how the involvement of students in the DAT was essential to guiding the groupâs understanding of how to best address the underrepresentation of minoritized students in Section III C 1, and in Section III C 2 we see how change leaders in the DAT mitigated the power dynamics that inevitably exist between minoritized students and non-minoritized faculty in such work. Thus, this case study reveals not only the value of including students in equity work, but a model of how to ethically collaborate with marginalized students in such endeavors.

The elements enabling the partnership in Section III D reveal several things. First, the change leaders credit the retirement of the longtime department chair that preceded the DAT with allowing the space to try new leadership models and types of collaboration. Thus, we emphasize leveraging transitional moments as opportunities for departmental change; overcoming the inertia of existing department norms is difficult, and moments of transition have the potential to establish new norms. Second, the change leaders themselves appear to be just as critical as the methods they used. While we do not want to perpetuate lone "champion" myths of change (organizational change theory indicates that change requires distributed leadership from both the top-down and bottom-up [10]), the success of the DALI's principles hinge on change leaders' willingness to de-center themselves, recognize shortcomings, and share institutionally sanctioned power. As such, it is important when building equitable departments to consider these qualities in both current faculty who are charged with implementing change and with future faculty hires.

This work examines the partnership through the perspective of the DAT's change leaders. This limits our view, as different members of the partnership can have different perspectives of it [8]. To build a more complete case study of this DAT, we conducted interviews with the remaining members, once each in April 2022. We intend to publish a broader case study with these additional data in the near future, with a particular focus on the students' perspective.

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