DEAR WHITE PEOPLE: Recommendations to Attract, Recruit, and Retain Minoritized Students in Green Energy

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Abstract

Inspired by her own academic journey, this paper illustrates how an early introduction into the energy field can illuminate a lifelong career in the clean energy movement. Utilizing the theories of culturally relevant pedagogy, experiential learning, and ecological design process, this project highlights the parallels between engineering education and energy justice to inform approaches towards early exposure to green energy for minoritized high school students. The questions that guide this research are 1. How do you attract, recruit, and retain minoritized students in energy 2. What types of interventions can promote long-term career pathways for students? The author argues that one way to achieve energy justice is for there to be adequate representation of impacted communities in the decision-making process and one way to achieve this is through empowering the future generations sooner than later. Energy justice is defined as achieving social and economic equity for all persons no matter their demographic through reducing environmental harm related to the production and distribution of energy resources. This paper will use Skyline High School's Green Energy Academy in Oakland, CA as a model for other school districts to consider when developing alternate pathways to education. Moreover, the findings of this paper highlight the importance of getting an early introduction to the professional energy field through a variety of qualitative assessments of the students in the Green Energy Academy. Lastly, the author collaborated with teachers at Skyline High School to develop a culturally relevant curriculum recommendation in the form of a Green Energy Black History Month project.

Acknowledgements

First, I would like to thank God for carrying me through this journey towards completing my master's degree. Without my faith and trust in His ultimate plan, I would not be here today.

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I want to thank Oakland for welcoming me with open arms. Being a resident of this city has opened my eyes to the possibilities of making a living in California. I am committed to making a difference and I genuinely value the diverse backgrounds of all of those I came into contact with. All in all, my experience at Berkeley would not have been possible without the community that I built and will continue to build in Oakland.

To Skyline High School Green Energy students and staff, first and foremost thank you for allowing me to work with you. Thank you for answering my annoying surveys and participating in the field trip. To the seniors, it was gratifying dropping into your class and speaking with you about your capstone projects. Engaging with the Green Energy Pathway students has been rewarding on many levels in this research project. Based on the feedback from the students on the field trip, they enjoyed engaging with UC Berkeley as well.

Lastly, I want to thank my family and friends who have not stopped supporting me on this journey. To my mother for being there for me every step of the way, literally driving for 5 days across the country to get me here safely. To my father for instilling in me the values of networking and how to have a business oriented mindset. To my brother for always being one call away to help me make sense of obscure situations as if he were standing beside me even though he's thousands of miles away. To my brother's family for being so warm and full of energy any time I call. To my cousins and distant relatives that have checked in on me and provided me motivation to keep going. To all of my life sisters (35TTT) who have heard me rant about personal, professional, and social life. To all of the amazing friends from D.C. to Atlanta to Boston and across the country who have poured life into me - thank you. This work would not have been possible without you!

Introduction

Engineering Education

According to the ASEE Engineering by the Numbers, it was found that 61.5% of engineering bachelor's degrees were granted to White students as opposed to 4% of Black students (Roy, 2018). Moreover, the percentage of engineering bachelor's degrees awarded to Black students has hovered around 4% for the last nine years. The study also found that only 22% of engineering bachelor's degrees are obtained by women and the share of Black women awarded engineering bachelors was barely 1% (Roy, 2018). These statistics are jarring and underscore the importance of creating space for women and minoritized groups in the field of engineering.

Ever since the senseless murder of George Floyd in the summer of 2020 there has been a shift in society towards more justice, equity, inclusion, and diversity. There was a shift in consciousness where non-minoritized people began to understand the importance of being an ally. In nearly two years, there have been newly established divisions of diversity and inclusion for any company that did not have one previously. The HR Policy Association conducted a survey that found that 70% of respondents either expanded or started new implicit bias training to increase awareness to align with the Black Lives Matter movement (Colletta, 2021). Although this type of training exists at the professional level, there is still a lot of work to be done at the academic level.

Representation is important in academia for a multitude of reasons. The first is that students can be more encouraged to preserve if there is a person that looks like them in positions of power. According to psychologist, Dr. Nadal, "representation can serve as opportunities for minoritized people to find support and validation (Nadal, 2021)." In addition, having representation is merely the right thing to do. The amount of White male representation is oversaturated in most of the professions from doctors, lawyers, to engineering. As the nation continues to diversify and prioritize diversity initiatives, it is imperative to provide the best possible educational opportunities for all students.

Based on the article, “If you aren’t white, asian, or Indian, you are not an engineer: microaggressions in the STEM field”, being a Black woman in the STEM field is more difficult than for other minoritized demographics. Studies show that the average mean frequency of Black women experiencing microaggressions is almost 90% (Lee, M.J., Collins, J.D., Harwood, S.A, 2020), shown in Figure 1. A microaggression is a term that describes the persistent verbal or environmental slights, intentional or not, that harms student learning (Desmond-Harris, 2015). Microaggressions are a leading cause of racial battle fatigue which is the “cumulative result of a natural race-related stress response to distressing mental and emotional conditions and these conditions emerged from constantly facing racially dismissive, demeaning, incentive, and/or hospital racial environments and individuals.” (Goodwin, 2018). The symptoms associated with racial battle fatigue are suppressed immunity and increased sickness, tension headaches, trembling, chronic pain in healed injuries, elevated blood pressure, and a pounding heartbeat (Goodwin, 2018). Based on this information, one can infer that the experiences of minoritized students in STEM are exacerbated based on their identities. Moreover, the paper also states that “... Black and Latinx students have reported feeling as though they have to prove that they belong as they are assumed to be subpar compared with their peers…” (Lee, M.J., Collins, J.D., Harwood, S.A, 2020). The purpose of this research paper is to intentionally focus on how to make the experience of Black and Brown students more holistic so they may see themselves in the STEM disciplines.

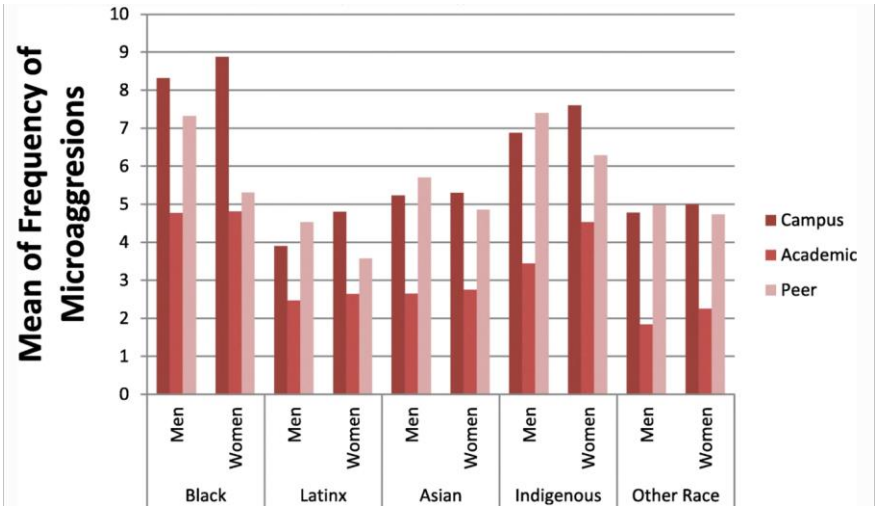

Figure 1. Mean Frequency of Microaggressions for minority groups

In the Forbes article "Students of Color Are Missing Out on STEM Opportunities, so the World is Missing Out on Their Brilliance", it mentions a known fact in High School STEM classes. The article states, "STEM curricula and materials prioritize the stories of STEM contributions made by White men, and minimize, omit, or perpetuate harmful stereotypes about the knowledge and history of STEM leaders of color" (Milgrom-Elliot, 2020). It is important to be intentional about how educators engage minoritized students because the STEM curriculum is fundamentally whitewashed. According to scholar James Holly Jr., educators need to go beyond acknowledging equity and incorporate a culturally inclusive curriculum (Holly Jr., & Masta 2021). One way that K-12 STEM educators can do this is to be intentional about lesson plans and projects that highlight and celebrate the meaningful contributions of wonderful leaders of color in STEM so that students of color may be inspired.

Culturally Relevant Pedagogy

The term culturally relevant pedagogy was coined by scholar Dr. Gloria Ladson-Billings who defines culturally relevant pedagogy in three equal components represented in Figure 2. The first is academic achievement/student learning which refers to the reinforcement of learning for students (Ladson–Billings, 2020). The next is cultural competence which connects students of all races to their cultural relevance (Ladson–Billings, 2020). The final component is socio–political/critical consciousness that addresses the need to ask relevant questions in lesson planning (Ladson–Billings, 2020). This research emphasizes the importance of creating lessons that are culturally connected to the student audience.

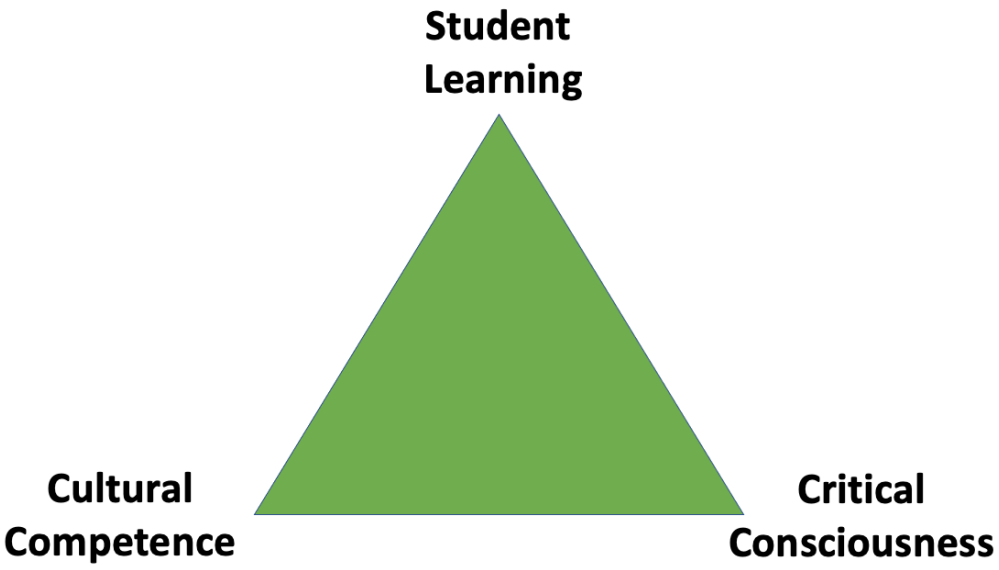

Figure 2. Three Dimensions of Culturally Relevant Pedagogy

Energy Justice

We are in an energy crisis- economically, socially, and resourcefully. The workforce development needed for the just transition away from fossil fuels has an enormous impact on our future World. According to the U.S. Census Bureau, women only comprise 27% of the clean energy workforce (E2, 2021). In addition, it also states that Black/African Americans make up 8% of the clean energy workforce (E2, 2021). Based on these statistics, there is evidence that there is a need for an increase in Black and female personnel in the clean energy workforce to reach parity and more diverse representation in the field.

Energy justice is an emerging field currently being spearheaded at the federal level by scholar-activist Shalanda Baker. Energy justice is defined by the Initiative for Energy Justice at Northeastern University as, "the goal of achieving equity in both the social and economic participation in the energy system." (IEJ, 2018). According to Baker, the inaugural deputy director of energy justice at the Department of Energy, there are four main arguments of energy justice. The first is that there is a community proposition, meaning that communities impacted by the problems should be part of designing the solutions (Baskin, 2021). The second is that social compassion must inform technological progress. For example, the way that electricity rates are designed does not consider low-income communities and

the energy burden that they face paying bills (Baskin, 2021). Energy burden is defined as the percentage of gross income spent on energy costs. The third argument is that 'Big Green' needs to be modernized and she calls on non-profit organizations to increase the amount of research they conduct that underscore racial disparity (Baskin, 2021). The fourth and final point is not to overlook equity in the favor of urgency (Baskin, 2021). This point is emphasized by the need to decentralize the energy industry and create more micro-grid systems for vulnerable communities. For example, with the wildfires in California there is a need for the energy infrastructure to withstand the harsh impacts of climate change (Baskin, 2021). To address these needs that Baker highlights, an important strategy is not only the need to increase the energy workforce, but *how* we are training the next generation, in particular minoritized students to engage in STEM and energy.

Case Study - Skyline High School

Skyline High School was established in 1959 and is located in the residential Oakland Hills neighborhood. The school has an enrollment of around 1800 students and an 18:1 student to teacher ratio (NCES, 2021).

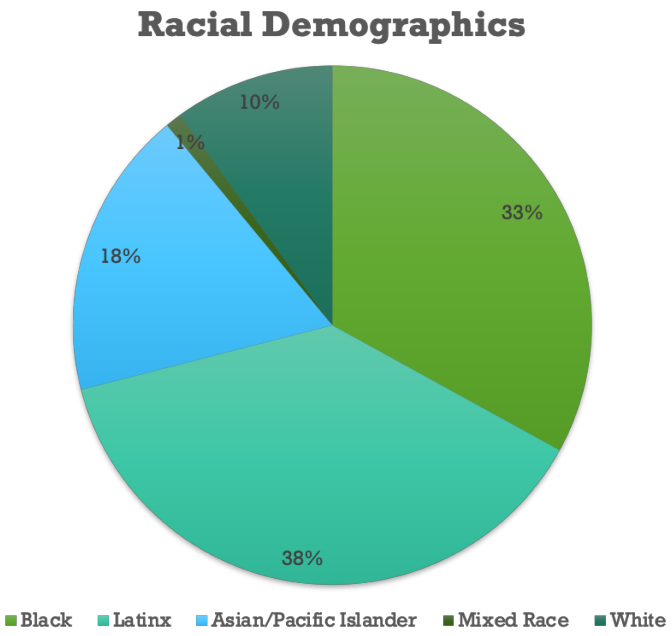

Figure 3. Racial Demographics of Skyline High School

Skyline has four unique pathways that students can join when they begin school. The four pathways include computer science/tech, education and community health, visual and performing arts, and green energy. The green energy pathway has allowed students to engage with sustainability topics as early as 9th grade by taking “Biological Connections to Energy and the Environment" instead of biology. The students in 10th grade are taking “Sustainability 1” where they learn more in depth about green infrastructure. The 10th grade students and teacher, Ms. Van-Hare, are currently collaborating with UC Berkeley Department of Civil and Environmental Engineering along with the City of Oakland through the Y-PLAN project. Y-PLAN is an acronym that stands for Youth, Plan, Learn, Act, Now and has been a service of the Center for Cities + Schools at UC Berkeley since 1999. The purpose of Y-PLAN is to engage the youth and provide them with an experiential learning opportunity to make a difference in their communities (McKoy, 2022). The pilot program with the students at Skyline allows them to inform the sustainability plans for the City of Oakland. The students attended a field trip to areas in East Oakland that were most in need of green infrastructure improvements. The students then brainstormed innovative ideas and offered recommendations through group projects to City of Oakland environmental planners to inform future planning efforts.

Burns Model of Sustainability Pedagogy - Ecological Design for Transformative Learning

The Burns Model of Sustainability Pedagogy or Ecological Design Process is a framework that was developed in 2009. The purpose of this model is to provide an adaptable model to teach sustainability (Burns, Kelley, Spalding, 2019). This framework stood out because of the living nature of the design. Using this framework as a guide to design this research aims to facilitate transformative learning, with a particular focus on minoritized students, to occur.

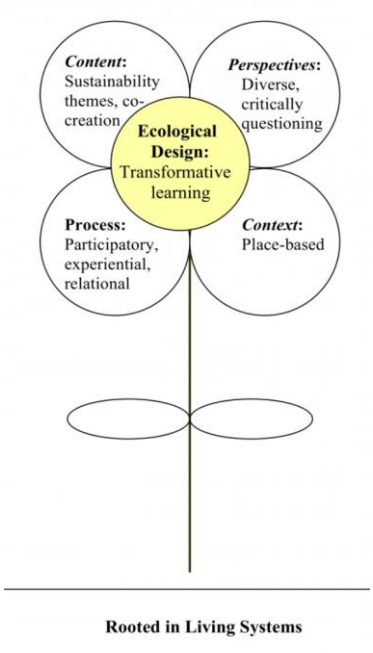

Figure 4. Burns Model for Sustainability Pedagogy

Rooted in Living System: Skyline High School Green Energy Pathway, UC Berkeley's Department of Civil and Environmental Engineering, and Y-PLAN program are all living and functioning systems

Context - place-based: The students in the Green Energy Pathway are already engaging with sustainability topics and UC Berkeley through the Y-PLAN program. This research integrates both.

Process - participatory, experiential, relational: The participatory process involved implementing a baseline survey that gave the students an opportunity to give feedback on the program. The experiential process was planning and executing the campus visit for the students by providing them an opportunity to experience a day in the life of a graduate student. The relational process was developing a culturally relevant research project for Black History Month to incorporate in the existing 'Sustainability 1' curriculum.

Content - sustainability themes, co-creation: The researcher reviewed the 'Sustainability 1' curriculum and offered a recommendation based on the gaps observed. We talked about how often historical figures in the STEM field, specifically people of color, and she said not often or ever. With that in mind, the idea of creating a Black History Month project about prominent Black historical figures came to mind and

seemed like the best assignment to fill this gap. This type of assignment is designed to have the students work in pairs to research the life and contributions of 23 scientists and engineers who identify as African American. Future work would include making projects that center all minoritized identity groups such as Latinx, Native American, Asian American, and LGBTQIA+. I recommend that teachers become more intentional about highlighting the various affinity groups to ensure a sense of belonging for the students in the STEM field.

Perspectives - diverse, critically questioning: The researcher planned a campus visit for the 10th grade 'Sustainability 1' class and recruited a diverse set of students that assisted with the day. There was representation from all racial demographics: African American/Black, Asian American, Latinx, White, and Native American. The visit was paramount because it gave the students an opportunity to see the school from a variety of perspectives.

Research Questions

The two questions that drive this research project: 1. How do you attract, recruit, and retain minoritized students in energy? 2. What types of interventions can promote long-term career pathways for students? One way to retain students in green energy is to explore opportunities to collect feedback from students to ensure that all students, especially those with minoritized identities, are having their needs met and feel supported. One way to recruit students in green energy is to introduce the topics at a younger age while their minds are still developing. Skyline does this already by having the Green Energy Pathway, however, this research suggests that incorporating college campus visits as a part of the experience is another way to recruit diverse talent. One way to retain minoritized students is to include culturally relevant projects to expose students to trailblazers that came before them as a source of inspiration. The project deliverables answer the second question of what are the types of interventions or recommendations that can promote long-term career pathways such as an experiential learning activity and culturally relevant pedagogy within the curriculum. The researcher hypothesized that if there are opportunities for minoritized students to engage in green energy through experiential learning and culturally relevant pedagogy, then they may have an increase in interest in the field. In addition, in the

paper “If you aren’t white, Asian, or Indian than you aren’t an engineer” it highlights there is, “... the need to address the ‘low participation, representation, engagement, and inclusion in engineering and related STEM fields among underrepresented students’ because to do so will enrich the intellectually capacity of the U.S. STEM workforce” (Lee, M.J., Collins, J.D., Harwood, S.A, 2020). Therefore, the type of research that this paper illustrates aligns with the call to action in this quote.

Methods

Baseline Survey

The researcher worked in collaboration with the 10th-12th grade teachers and administered a baseline survey that asked about the students' experience in the pathway. The purpose of the survey was to gather information about the student experience in order to guide future projects and programming to align to the direct needs of the students. The students were asked to identify themselves based on gender pronouns and racial demographics. Additional open-ended and likert-type questions were asked to determine students’ overall experiences, influences and suggestions for the program. Here are the questions that were asked in the survey:

Table 1. Baseline Survey Questions

1. How likely are you to major in environmental studies, engineering, or any other related STEM field when post-graduation?
2. Who is an influential scientist/inventor/engineer that shares the same identity as you?
3. What types of resources, activities, and projects were helpful during your time in the Green Energy Pathway? Which were not as helpful?
4. What are two things that you have learned in the Green Energy Pathway that you feel would be useful in your adult life?
5. On a scale from 1-5, 1 being the not great and 5 being the exceptional, how would you rate your experience throughout the Green Energy Pathway?
6. What are your honest feelings about the Green Energy Pathway?
7. How likely are you to attend college/university?
8. How often were you encouraged to pursue a lifelong career in STEM?

Experiential Learning

Experiential learning through field trips is a proven method to engage students and reinforce what they are learning in the classroom (AUSE, 2021). In previous years the 10th grade teacher in the Green Energy Pathway would bring the students to a different college campus and this year the campus was unavailable to host. Therefore, the teacher and the researcher worked in collaboration to plan a field trip to visit the UC Berkeley campus. Having a balance of theory and practice is important to ensure that students are developing holistically (AUSE, 2021). Moreover, the students were already collaborating with UC Berkeley through the Y-PLAN pilot program with the Department of Civil and Environmental Engineering so it made sense to connect the dots.

Results & Discussion

The initial baseline survey was administered prior to other proposed intervention. Figures 7 and 8 show the demographic makeup of the current green energy pathway students, with a total of 95 respondents.

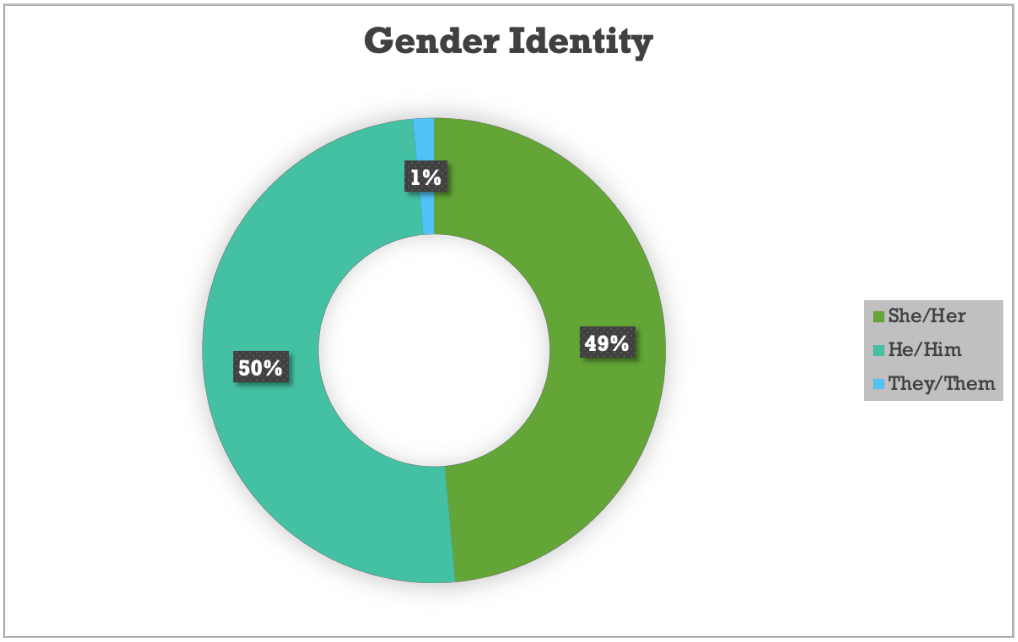

Figure 5. Gender Identity of green energy students (n = 95)

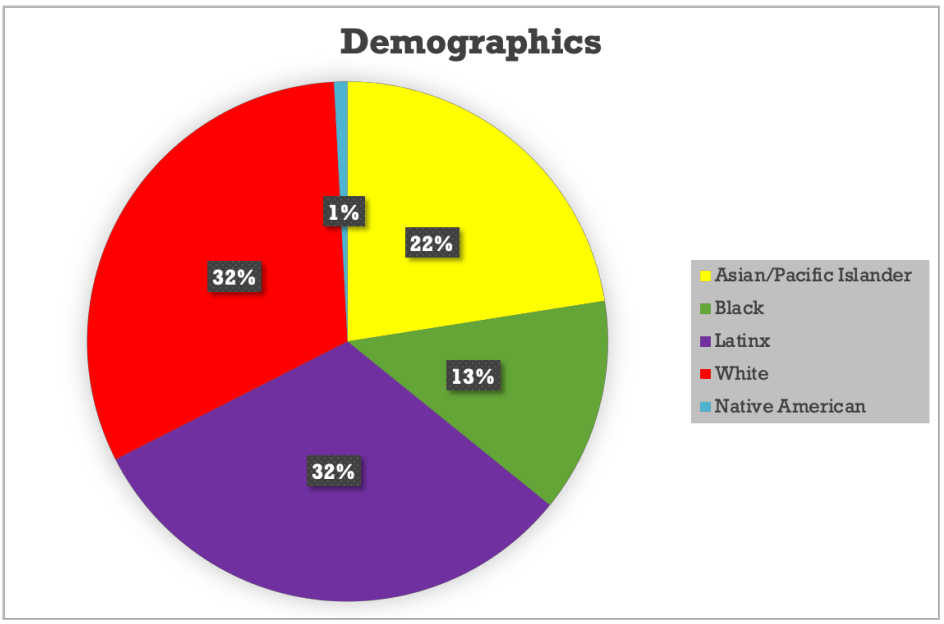

Figure 6. Racial/ethnic identity of green energy students (n = 95)

In the following three figures (7, 8, 9) the results from the baseline are illustrated by bar graphs. The results of figure 7 show that 67% of students rate their experience in the Green Energy Pathway a score of 4 or higher. The results of figure 8 show promising results with 86% of students interested in attending college once they graduate from high school. The results in figure 9 show that there are at least 20 students who felt that they were not encouraged enough to pursue STEM while in the Green Energy Pathway. On the other hand, there were 42 students who felt that they were encouraged more often to pursue STEM.

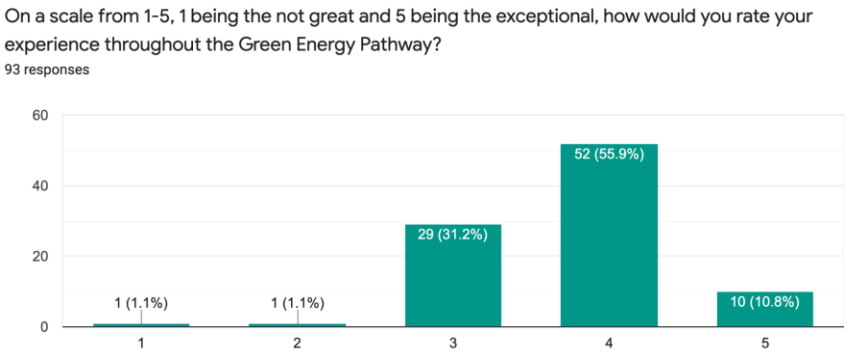

Figure 7. Student responses to question to 5

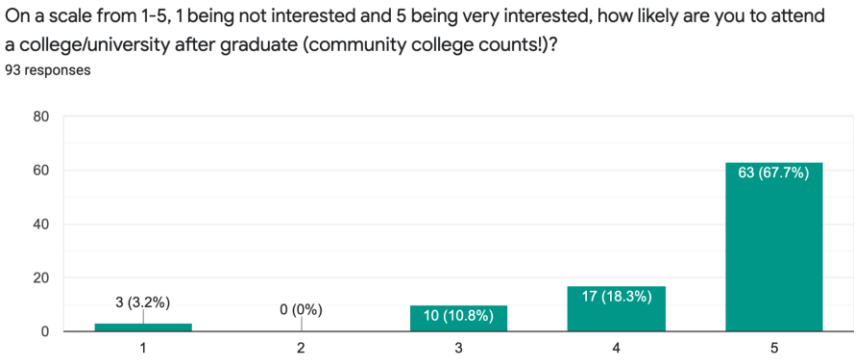

Figure 8. Student responses to question 7

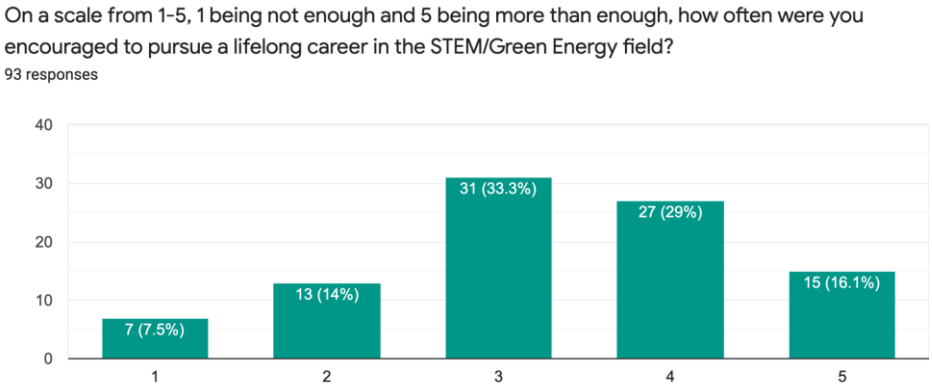

Figure 9. Student responses to question 8

In figures 10 - 14, the researcher intended to investigate how the different demographics correlated with the likelihood of majoring in environmental studies, engineering, or related STEM fields after graduation. The green in figure 10 highlighted the students that chose very unlikely. In figure 14, it shows that 31% of Black students chose very unlikely and this is the highest unlikelihood of all of the demographics. In contrast, figure 16 shows that 50% of the White students are very likely to major in environmental studies, engineering, or other related STEM fields. This finding is core to the research question because it highlights the disconnect that exists and emphasizes the importance of attracting, recruiting, and retaining minoritized students in green energy.

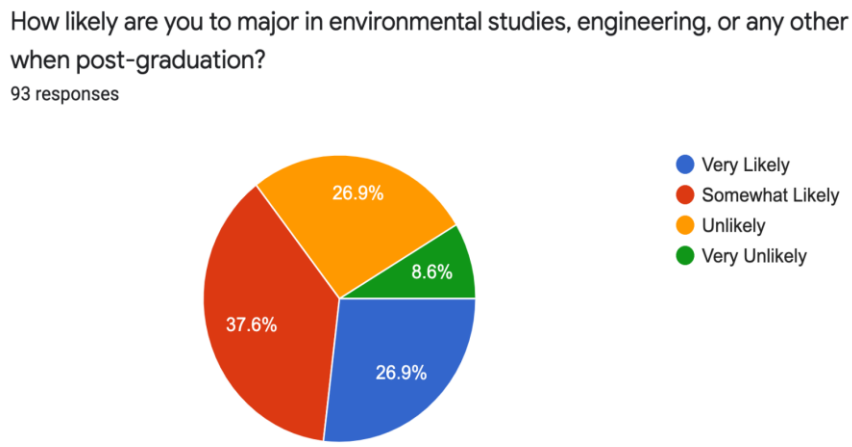

Figure 10. Results from Baseline Survey for all students "How likely are you to major in environmental students, engineering, or related STEM fields?"

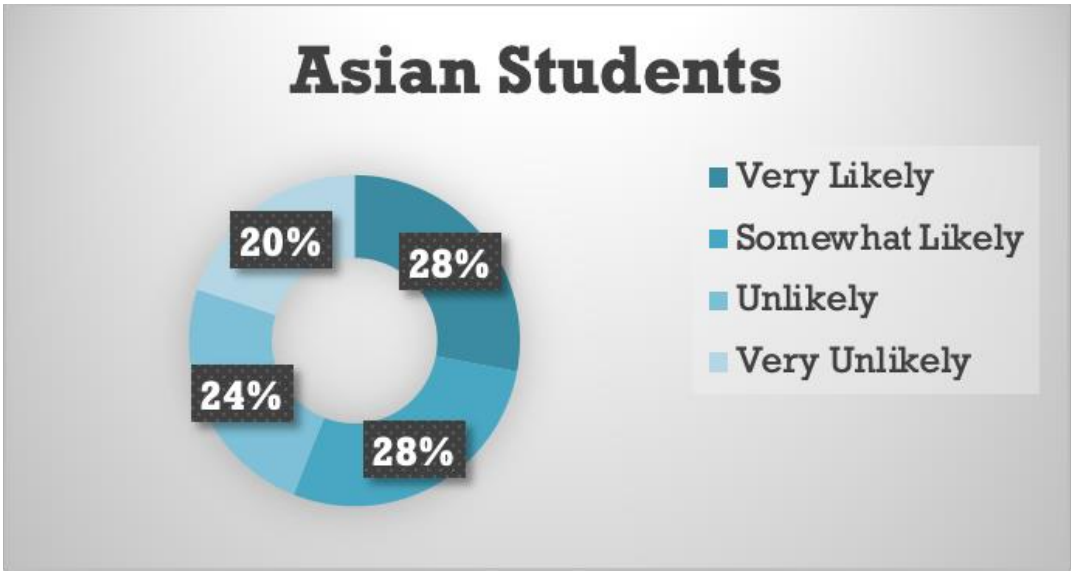

Figure 11. Results from Baseline Survey for Asian students "How likely are you to major in environmental students, engineering, or related STEM fields?"

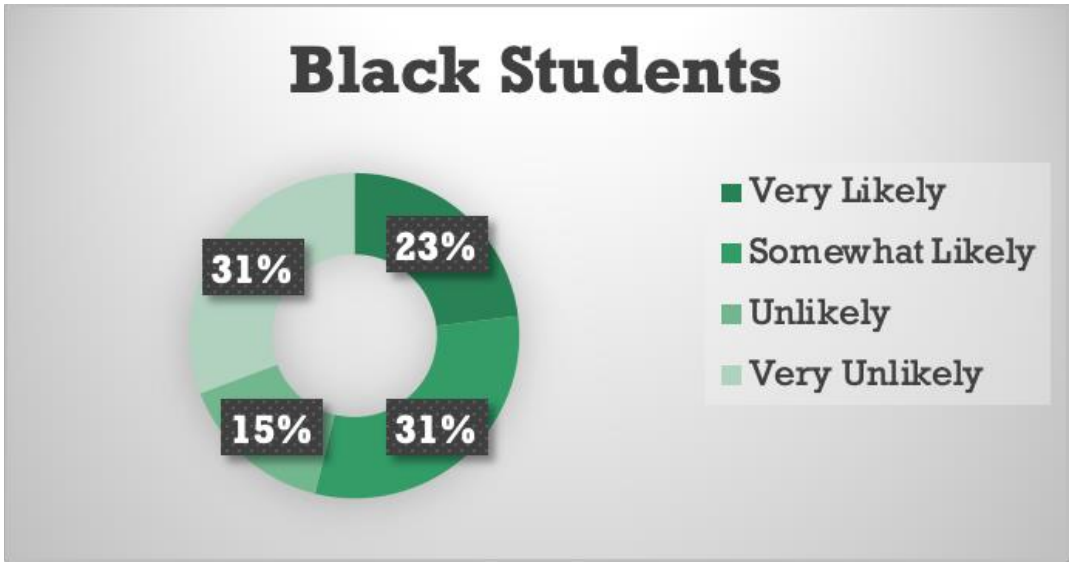

Figure 12. Results from Baseline Survey for Black students "How likely are you to major in environmental students, engineering, or related STEM fields?"

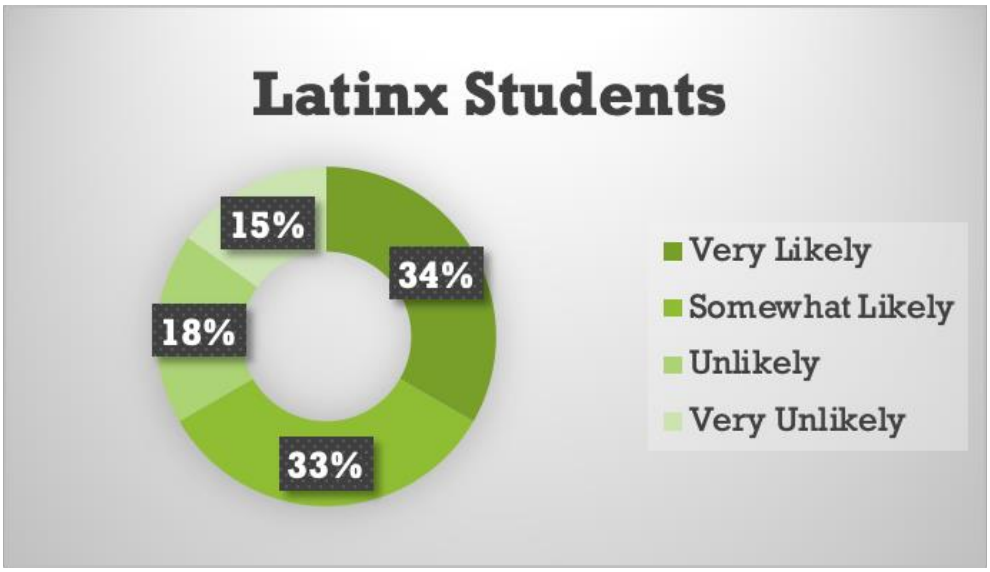

Figure 13. Results from Baseline Survey for Latinx students "How likely are you to major in environmental students, engineering, or related STEM fields?"

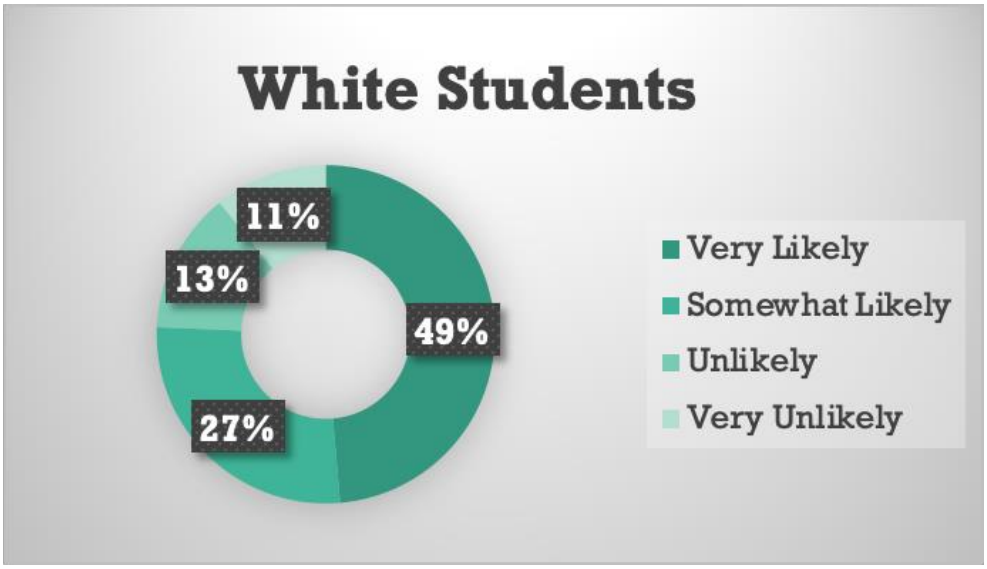

Figure 14. Results from Baseline Survey for White students "How likely are you to major in environmental students, engineering, or related STEM fields?"

UC Berkeley Visit Day

The purpose of the visit was to expose the 10th grade students to the UC Berkeley campus. The goal of the visit was to connect graduate students from the Energy & Resources Group (ERG) with the high school students to create dialogue around shared interests. However, due to a limited number of volunteers from ERG the volunteer list was opened to undergraduate and graduate students affiliated with the Black Graduate Engineering Student Society (BGESS). In total there were 15 volunteers across multiple departments on campus and most racial, ethnic, and gender identities were represented. The volunteers indicated what parts of the day he/she would be available to devote time and the agenda was planned accordingly.

The beginning of the day began with picking up a donut/pastry order to energize the students upon their arrival. Once the donut, juice, and clementines were set up in the lobby of Giannini the volunteers awaited the arrival of the high school students. When the high schoolers arrived, the host greeted them with the rules of the day and then the plan for the morning. The five rules are represented in Table 2.

Table 2: Rules for Skyline Visit Day

1. Be polite
2. Have an attitude of gratitude
3. Refrain to complain
4. Ask questions
5. Have fun!

The rules were intentionally picked because most are applicable rules of life. Once the students were off the bus the breakfast volunteers were ready to serve the students pastry and juice.

The students were given name tags from their teacher complete with a shape and distinct color to make putting them in groups easier for the host and volunteers. After the students received their breakfast they were instructed to get in groups based on the shape drawn on their name tag to begin a firecracker. The firecracker is the host's hot take on the typical icebreaker activity and each group had to answer one of the four questions. The questions were 1. If you could be a sandwich topping, what would you pick and why 2. If you could have dinner with any living person, who would it be and why 3. If you could travel to any place in the World, where would you go and why 4. If you could have any superpower what would it be and why? After the firecracker, the students were divided into groups based on their color to start the campus tours.

The campus tours were given by the volunteers and were all different based on the experience of the tour guide. The students in the host tour group visited the earth sciences building where there were crystals, the CITRIS lab, the civil engineering building, the public policy school, the famous Greek theater, and the memorial stadium. The students learned about earthquake seismic machines, the importance of public policy, and finally they pointed out a 3-D printed spaceship from Star Wars. The tours were each unique and the initial feedback from the students were positive.

After the tours, the students were allowed to explore the surrounding areas for lunch and were on their own until it was time to go to the bus. Thankfully, all of the students who attended made it back on

the bus on time to make it back to Skyline. One student told the host, “this was my dream school and I am definitely going to apply after today.” Another student told the host, while simultaneously also scarfing down a 15-inch burrito, that “this was one of the best field trips they have gone on.”

Feedback of Visit Day

Overall, the general feedback from the students about the campus visit was positive. The overall rating is represented in Figure 15, with all students rating the field trip as a 4 or higher. Therefore, it can be inferred that the students enjoyed their time visiting UC Berkeley. The students were asked what were two things they learned during the visit day. Several responses are highlighted below in Figure 19.

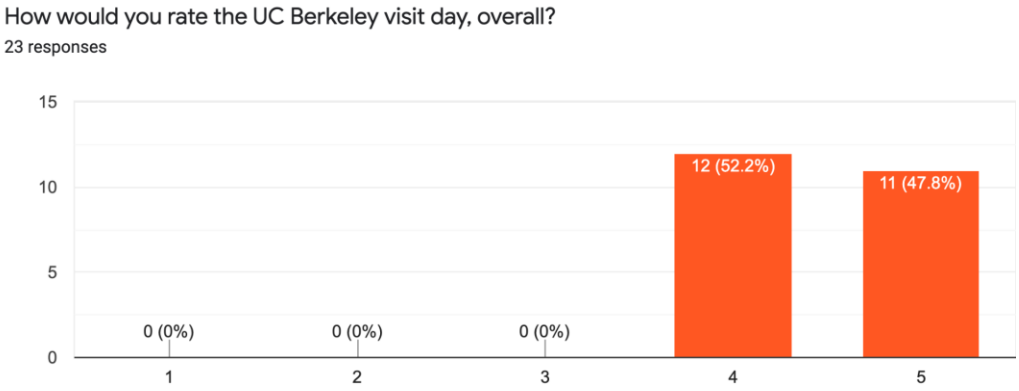

Figure 15. Visit Day Feedback for “How would you rate the day overall”

Table 3: Student Responses to Feedback Survey

Student Response	Student Demographic
“I learned the backstory of some of the campus buildings. I also learned more about the business major and how competitive it is. Overall this campus tour was a really great experience for me especially because that is my dream school.”	She/Her, Black/ African American
“I learned that UC Berkeley has a ton of different majors that people can take. Another thing I learned was that UC Berkeley is a very national college so a lot of people around the world goes to UC Berkeley”	He/Him, Asian American/Pacific Islander, Latinx

“I loved the way the tour wasn't just a ton of talking and standing around. I loved that we got brief descriptions with important information and got to see so much. I would say one thing is to talk about a variety of things that include more information about things like what the teachers are like or just personal experiences.”	She/Her, Asian American/Pacific Islander
“I learned that UC Berkeley focuses on engineering and sciences and also that there are similar houses to our pathways. ”	She/Her, Latinx
“I learned about several notable alumni from the college, and I learned about the locations of some of the different divisions of learning.”	He/Him, White
“I learned that the Davis Hall in UC Berkeley is for earthquake research. I also learned that it is probably the most structurally enforced building at Berkeley because of the research made about earthquakes.”	She/Her, White

The bottom line is that minoritized students, specifically Black and Brown students, learning needs to be prioritized in STEM disciplines. With the representation of Black and Brown people in the clean energy workforce, society runs the risk of repeating energy injustices. In addition, there needs to be an increase in the number of leadership classes offered to students who show signs of possessing leadership qualities. Fostering leadership skills at an early age opens up the door for more opportunities down the professional line. For any science, math, or related STEM teacher reading this paper here are four easy steps to being a more inclusive and effective educator.

Proposed Intervention/Recommendation Black History Month Project

The purpose of the Black History Month project is to incorporate culturally relevant pedagogy in the existing 10th grade sustainability curriculum. The researcher and the teacher of the sustainability class collaborated to pilot a Black History Month project for future months. The curriculum of the class was mostly technical and had little to no historical significance or opportunities for the students to engage in the history of the energy industry. The project is designed to be a team project to allow opportunities for collaboration between the students. Once the students are paired off they will be assigned a Black engineer/scientist/inventor who has made a meaningful contribution to the energy industry. The students

are instructed to create a presentation to present to their peers and are given several guiding questions. Here are the questions for the project:

Table 4: Black History Month Project Questions

1. What is family history?
2. What is their educational background?
3. Where are they from?
4. What is their contribution to the science/engineering/energy community?
5. Does their work have an impact on the present day? If so, how?
6. In your opinion, why are they significant to science/engineering/energy?
7. If you had the opportunity to meet them in person, what are three things you would want to discuss with them, and why?
8. Please feel free to add any relevant information

Future Work

The findings in this research emphasize the importance of attracting, recruiting, and retaining minoritized students in green energy. For K-12 educators that may be reading this paper, the researcher has identified four steps that one can take towards cultivating a more inclusive learning environment for all students.

The first step is to create an identity safe classroom. An identity safe classroom is one that cultivates a feeling of belonging for all students (Cohn-Vargas, Steele, 2015). If you are a White teacher within a majority White school, this section does not apply to you. If you are a White teacher within a majority Black school, this applies the most to you. This rule is first because there are far too many White teachers who still claim to be colorblind and that is dangerous for a multitude of reasons. Colorblindness creates an unsafe environment for learning because it fails to address the nuances of the different backgrounds and unintentionally convey that the background does not matter (Cohn-Vargas, Steele, 2015). Therefore, by creating an identity safe environment, students will feel more comfortable showing

up as their full selves in the complexities of their personhood. The four pillars of identity safe classrooms are student-centered teaching, cultivating diversity as a resource, classroom relationships, and caring classroom environments (Cohn-Vargas, Steele, 2015). Each pillar is important to develop throughout the school year so that students feel like they can thrive in their learning environment.

The second step is to be obsessed with giving quality education. The best teachers are the ones that are constantly working towards being better. The type of teachers that give midpoint reflection surveys and end of the school year evaluations. Although the schools themselves conduct teacher evaluations throughout the year, the teacher themself has to want to be better for their students. Teaching is not an easy job and it takes a lot of time, effort, and resources to be an effective one. If the teacher takes the time to ask the students questions about his/her performance or creates opportunities for students to give feedback, then it provides leverage for the teacher to constantly do the best job possible. This type of quality will spill over into how the teacher conducts lessons and trickles down to provide a better learning experience for the students. Moreover, this type of obsessions provides the teacher with ample opportunity to grow and be the best professional he/she can be.

The third step is to find ways to integrate sustainability into every discipline in schools. There are songs, movies, books, and board games about climate change. There is no reason why every student in the American school system should not be exposed to this topic at an early age. Reflecting back on going to school in the early 2000s, this was not a priority in the classroom. However, the Covid-19 outbreak was a point of inflection that has exacerbated all pre-existing problems that society has faced and climate change/global warming is a big one. The students who are growing up in today's World need to know about this not to scare them but to challenge them to be a part of finding solutions that will save us. What is clear is that the people who are in position to stop being extractive are not interested in stopping. Therefore, the future generations need to grow up learning that the greenhouse gas effect and its relationship to energy have a direct impact on global warming.

The last step is to bring love into every lesson plan, activity, assessment, project, and homework assignment. In research or in literature, love is rarely ever brought up as a discipline to ground the work

that is being done. However, if love was intentional in teaching then there is a greater chance that students and teachers can have powerful relationships.

To institutions of higher learning on a Diversity/Equity/Inclusion hiring spree, hire people who actually want to do the work and know how to do the work effectively. During my own experience at Berkeley I have engaged with staff at a variety of departments who are involved in DEI efforts without any experience. This is a major issue in my opinion because there are many scholars and educators who specialize in this type of work. Therefore, there ought to be more intention going into the people who are selected to run programs for minoritized students and create incentives to gather more minoritized students on campus. To school districts across the World, invest in sustainable education materials because the future depends on it.

Figures & Table Appendix

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