Work in Progress: Using Student Focus Groups to Improve an Undergraduate Bioengineering Transport Course

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Introduction

Reflective teaching fosters equitable learning environments by incorporating student feedback through surveys, in-class responses, interviews, and focus groups. These feedback mechanisms are essential for improving engineering education by enhancing student engagement, learning outcomes, and instructional strategies. Methods range from formative assessments and peer evaluations to structured interviews and data-driven feedback systems [1,2], with bioengineering courses often incorporating frequent, low-risk formative assessments and clicker-based questions to reinforce learning. In addition, interdisciplinary teamwork exercises and leadership training contribute to the development of essential skills [1,3]. Structured evaluations, such as data envelopment analysis (DEA) and Cooperative Learning Object Exchange (CLOE) frameworks, have been explored to enhance active learning and minimize subjective bias in assessment [4,5] (**Appendix 1**).

In technical courses, informal and non-graded assessments help instructors adjust teaching strategies based on student perspectives, providing valuable insights into how to integrate effective hands-on experiences that directly relate to course content. Engineering often relies on a traditional, lecture-based approach to teaching technical concepts [6]. While students reinforce their understanding through homework and exams, opportunities for hands-on learning outside of laboratory courses remain limited [7,8]. However, engaging in experiential activities enables students to deepen their understanding of key concepts, apply coursework to practical situations, and cultivate valuable skills for their professional endeavors [9,10].

Heat and Mass Transport in Bioengineering (BIOE 360) is a required undergraduate course at the University of Illinois Urbana-Champaign. Pre-semester perceptions in Spring 2022 and 2024 showed that over 30% of students had a negative opinion, while only 10% had a positive opinion of the course before it began. In the summer following the 2024 offering of BIOE 360, we formed focus groups to collect feedback on course elements such as lectures, groupwork, and class structure. Before and after these discussions, surveys assessed the groups' impact and guided future recommendations. Participants were asked for input on the effectiveness of the feedback structure and were given an opportunity to suggest course improvements. Focus group participants emphasized the need for experiential learning to connect complex topics to real-world applications, to foster an enhanced understanding of the material and classroom equity.

In this Work in Progress paper, we present the initial stages of the study: (1) development of a series of focus groups; (2) a mixed-methods analysis to identify pervasive themes from the feedback; and (3) identification of recommended action items for the next offering of the course.

Methods

Following the Spring 2024 offering of BIOE 360, students were recruited via email to join a series of three focus groups facilitated by the instructor during Summer 2024. Sessions were structured to allow for participant flexibility, with offerings in person and over Zoom. The first session covered the initial 40% of course material and lectures, the second session addressed the second 40%, and the third session (offered over Zoom only) focused on the remaining 20%. This final session also included discussions on homework sets, exams, in-class participation, groupwork and activities, and office hours. Students were asked to come prepared with notes on the content and delivery of those topics (including specific recommendations for improvement of confusing topics in the lecture notes), additional references (such as videos or schematics) to solidify the concepts, and connections to real-world scenarios in biology or engineering.

Before the first session, participants completed the Pre-Focus Group Survey, which inquired about work styles and sense of connection and belonging to the course during the previous semester (**Appendix B**). After the third session, participants completed the Post-Focus Group Survey that inquired about various aspects of the focus group, including expectation fulfillment, average time commitment, suggestions for improvement of the group, and future impacts on the course (**Appendix C**). To analyze these data, the instructor de-identified the evaluation responses. Numerical ratings from Likert-scale questions were aggregated to calculate averages. Responses to open-ended qualitative prompts were analyzed using a thematic grouping approach. Generative AI tools were used to identify recurring patterns across the feedback. The AI clustered similar responses by analyzing language and keywords to provide a preliminary organization of data into broad themes. This automated process was followed by a manual review to ensure that the themes were contextually relevant. This study was deemed exempt by the Institutional Review Board of the University of Illinois Urbana-Champaign (IRB24-1456).

Results and Discussion

Focus Group Sessions

Between 10 and 12 students attended each of the three focus groups, representing ~12.5% of the total students to whom invitations had been sent. Survey data indicated active participation, with 57% of students attending all three sessions, 29% attending two, and 14% attending only one. Regarding time commitment, most students (69%) reported that they spent 2-3 hours preparing in advance of focus group meetings, with 23% spending over 3 hours and 8% spending only 1 hour. These results reflect a high level of engagement in the series, indicating that students were invested in the feedback process and willing to contribute to the improvement of the course.

Pre- and Post-Focus Group Survey Analysis

To analyze student feedback, qualitative focus group discussions were combined with quantitative survey data to gather opinions on course content, teaching methods, and classroom setup. The AI tool efficiently identified patterns in qualitative data, saving time and reducing bias, while manual review ensured contextual accuracy and addressed ambiguities for a comprehensive analysis. Together, these methods provided a robust framework for summarizing student feedback. Initially, the AI conducted thematic coding, categorizing responses into broad themes, including engagement, belonging, confidence, and challenges. A subsequent manual review refined these themes to capture qualitative insights. **Table 1** summarizes key themes with representative student quotes in each category.

In the pre-focus group survey, students gave examples of times they felt a sense of connection to the field (**Appendix B**, question 7). Responses generally fell into three categories: applications to the field of bioengineering/medicine or to other courses (n = 7), real-world examples (n = 5), and taking an active role in the material (n = 2). Representative quotes are shown in **Table 2**.

Theme	Description	Example Quote
Activities and collaboration to promote engagement	Collaborative in-class group activities such as problem sets fostered a sense of belonging.	*"The dedicated group time to the participation questions was always reassuring because it made me feel like I was not alone in any confusion about the content…"*
	Real-life examples and active learning activities increased course engagement.	*"I really learned well with the examples done in class that supplemented the conceptual material. The[y] helped me to learn also because they kept me engaged."*
Real-world applications	Connecting real-world material to bioengineering increased learning and course engagement.	*"Watching videos of applications in the real world, seeing examples that applied to my real life and then thinking about them later (ex: thawing meat)."*
Confidence through practice	Practicing example problems and homework provided confidence in applying concepts.	*"Being able to successfully do the homework on my own, practicing all the problems before the test."*
Challenges with course pace	Students struggled with the fast-paced environment and difficult technical problems.	*"Usually, the course was at a fair pace where I could absorb the content but for [in-class] problems, I had not fully processed the math and couldn't get those problems right."*
Classroom setup	Sitting in the same groups limited student interaction.	*"I didn't like that we were in the same groups for the whole semester. I wish I got the opportunity to interact with different people throughout the semester."*
	A hexagonal table layout in an active learning classroom promoted effortless interaction.	*"I really liked how the desks were oriented for group work. It made it really easy to talk to group members and ask questions."*

Table 1. *Major themes and representative quotes from focus group discussions.*

"Give an example of a time you felt a sense of connection to the field of bioengineering in BIOE 360."	
Theme	**Example Quote(s)**
Application to the field or to other courses	• *"The application of nanomedicines made me feel more in-tune with the content."* • *"Problems that related to medical devices and required us to do some basic research about design instead of just plugging in numbers [or] equations."* • *"Some examples during class were also applicable to other classes that we had taken so I could connect my classes and create a more complex understanding of the content."* • *"Since my interests are in drug delivery, many of the mass transport questions felt relevant, and [several] questions specific to drug transport also came up. It was interesting to get a feel for what I might be doing should I continue research in this field for a career."* • *"Watching videos in class also helped me contextualize the bioengineering relevance."*
Real-world examples	• *"The problems were always oriented toward[s] real-life problems, which helped me put the class into the context that I could understand."* • *"I really liked the specific examples that you provided, especially from TikTok and Instagram [videos] that applied/explained the material in real life situations. The Stanley [thermos] example and the [thawing of snow on the] backyard patio really helped enforce the material and made what we were learning feel real!"*
Taking an active role	• *"When we wrote our own problem for mass transfer at the end of the semester. I found myself looking at a lot [of] resources for that assignment."*

Table 2. *Example of times students felt a sense of belonging in BIOE 360.*

Students were then asked when they felt engaged with the material (**Appendix B**, question 10). Responses varied from doing group activities or problem-solving in class (n = 3), connecting to real-life examples or applications (n = 2), homework and practice problems (n = 3), and when studying the material through office hours, review questions, and games (n = 4). Others felt connected to the material when they understood the relevance and bigger picture (n = 2); for example, "*when learning the 'why' for all aspects of the class*" and "*when we covered deriving the temperature or concentration profiles using the governing equation […] It felt like an opportunity to apply the basic math I learned in differential equations to a real-life solution*."

Finally, the pre-survey inquired about when students felt distant from the material (**Appendix B**, question 11). Responses ranging from formula derivations (n = 2), difficult sections or homework problems that required more time for understanding (n = 2), not understanding the relevance (n = 1), and desiring a higher-level approach to practice problems (n = 1) were noted.

While the pre-survey aimed to evaluate students' perceptions of the course, the post-survey collected students' opinions of focus group participation and outcomes (**Figure 1**). Overall, students reported that their expectations and goals – such as providing feedback and engaging in constructive discussions – were met, and that all voices were valued. However, they acknowledged that the opinions of participants did not fully embody the entire class, as the group did not represent the distribution of final grades.

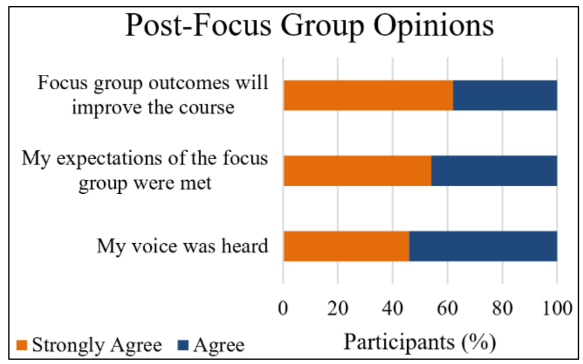

Figure 1. *Post-focus group perceptions.*

Overall, focus group participants felt strongly that the outcomes of the group would have an impact on the lectures and in-class active learning opportunities, among other components (**Figure 2**; from **Appendix C**, question 8). Participants recommended several strategies to improve the course, which mirrored the feedback from the pre-survey (**Table 2**). Experiential learning was especially highlighted to help students incorporate real-life activities that reinforce concepts across various teaching and learning modes. Personal interest in course topics also helped students better understand and engage with course content, while in-class activities – such as trivia, problem-solving, or creating examples with peers – also played a role in satisfaction.

Lastly, students were questioned as to whether the focus group would ultimately lead to a more equitable environment in the class (**Appendix C**, question 12; representative quotes in **Table 3**).

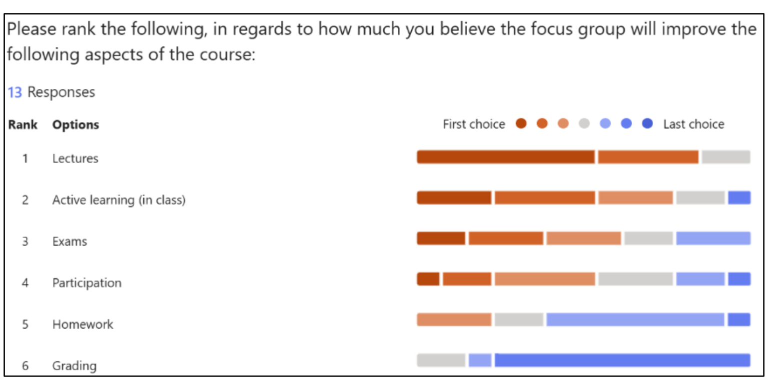

Figure 2. *Projected impacts on various course aspects, according to focus group participants.*

Overall, these results emphasize the positive reception of the preliminary focus group initiative among participants, validate the structure as an effective tool for gathering actionable and inclusive student feedback, and highlight the participatory and collaborative nature of the improvement process.

"How will this focus group ultimately lead to a more equitable environment?"
• *"Having all of these perspectives will lead to some changes that can include everyone's learning style."*
• *"To some extent, yes, given the variety of participants present, but [...] there will inevitably be some unrepresented perspectives in the class environment."*
• *"Feedback regardless of the person or motive is good to hear. Different perspectives can bring forth different ideas even if they are not explicitly stated in that feedback."*
• *"It offers students with many perspectives to offer their opinions. When one person said their piece, I would remember that moment in the semester and know what else I wanted to say about the materials."*
• *"It is important to have multiple student perspectives on the course content to be able to accommodate different learning styles."*
• *"We tried to be very inclusive and identify any barriers."*
• *"...by providing ideas or avenues on what can be done to cater to students who are doing well or those who are not understanding the content."*

Table 3. *Examples of how the feedback could increase equity in BIOE 360.*

Modifications and Future Activities

Suggestions for improvement were categorized into two main areas: modifications to course delivery to clarify lecture content, and recommendations for experiential activities or demonstrations that would complement or connect the content to larger real-world concepts, with both aimed at improving students' conceptual understanding of the material. For the former, we identified simple action items for each lecture that were proposed to have the greatest impact on comprehension. For example, when being introduced to conduction, convection, and radiation, students desired examples of how these heat transfer modes related to bioengineering. Thus, a slide illustrating real-world cases was added (**Figure 3**). This modification requires minimal effort from the course staff but yields a significant impact by drawing connections to concepts or items with which students are familiar.

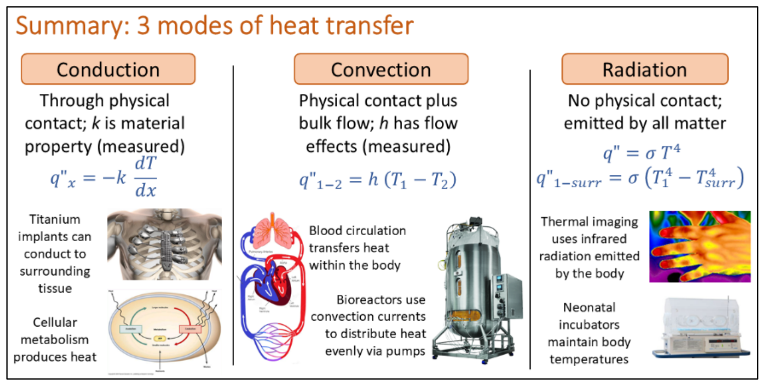

Figure 3. *Example lecture slide developed to demonstrate how modes of heat transfer relate to bioengineering.*

Next, we planned for tactical adjustments that enhanced the existing lectures with short, hands-on activities. >50% of participants ranked active learning among the top impactful aspects that would improve the course. We began with creating a comprehensive list of potential interactive experiments, generating multiple ideas aligned with the course topics. We then assessed each of the experiments and categorized based on their anticipated difficulty of implementation, using criteria such as time requirements, availability of materials, and associated costs. Activities for each topic of heat (**Table 4**) and mass transfer are planned for future implementation.

Conclusion and Future Directions

Here, we highlight the importance of incorporating student feedback – particularly through focus groups – to enhance teaching and learning in a technical, content-focused course. While similar studies have used pre- and post-lecture assessments to collect feedback and facilitate student-driven changes, they often lacked a key component: hands-on experiential learning [1]. A related study incorporated similar surveys to assess the impact of active learning on engineering course improvement, aiming to foster an inclusive learning environment [11]. Building on this approach, our study not only assessed feedback through surveys but actively integrated these insights into course design, fostering a dynamic and responsive learning environment. Survey and thematic analysis findings highlight that active, collaborative learning boosts student engagement and confidence. These insights will guide BIOE 360's course enhancement, with specific changes including integrating interactive and hands-on activities. Linking class topics to real-world studies allows a better connection between theoretical concepts and practical applications, thereby enhancing engagement.

Compared to traditional reflective teaching methods, this study provided students with the ability to directly influence course content, structure, and delivery. A similar study involving first-year engineering students incorporated assignments, in-class activities, and weekly writing exercises to encourage reflection on class experiences and inform future course decisions [12]. While that approach successfully identified students' challenges with preparedness for studying engineering, our study's use of focus group discussions provides a direct line for students to influence actionable changes. Additionally, the feedback identified challenges in content delivery, classroom setup, and group assignments, which will be addressed through more inclusive and engaging strategies.

Moving forward, we will assess the long-term impact of these revisions through ongoing student feedback and the application of evidence-based teaching practices. To extend these efforts, a toolkit of activities could be published as a resource for other instructors teaching similar courses. By aligning teaching strategies with student needs and evolving bioengineering advancements, we aim to foster a more engaging and effective learning environment. Ultimately, this work fosters a more interactive and supportive learning experience, equipping bioengineering students to navigate interdisciplinary challenges and build a stronger sense of belonging in the field.

Topic	Proposed Activity
Modes of heat transport	• Activity: "Colored Water Currents in Beakers" • Objective: Instructor heats beakers of water (with and without food coloring) to demonstrate how heated water becomes less dense and rises, driving natural convection.
Thermal boundary conditions	• Activity: "Boundary Condition Challenge" matching game • Objective: Using a categorization quiz on Canvas LMS, teams of students match real-world bioengineering scenarios to one of three boundary conditions of heat transfer.
Thermal resistance	• Activity: "Thermal Resistance in Biological Circuits" • Objective: Students must solve for the effective conductive and convective resistance in a series/parallel circuit, representing an epidermal patch or a neural network.
Freezing and thawing	• Activity: "Freezing Water in Different Containers" • Objective: Students observe the influence of surface area, volume, and material properties on freezing times of water in different containers during the class period.

Table 4. *Sample excerpt of active learning content for various topics in heat transfer.*

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References

[1] Khojah, R., & Relaford-Doyle, J., “Measuring the Pedagogical Impact on Undergraduate Students through Frequent, Low-Stakes Pre- and Post-Lecture Self-Assessments,” in *Proceedings of the 2024 ASEE Annual Conference & Exposition*, Portland, OR, 2024. doi:10.18260/1-2—47767.
[2] Harris, A., & Washington, C., “Formative Feedback: Providing Bioengineering Professors with Quantitative Measures of Their Teaching,” in *Proceedings of the 2003 ASEE Annual Conference & Exposition*, Nashville, TN, 2003. doi:10.18260/1-2-11899.
[3] Coger, R., and De Silva, H. (1999). "An Integrated Approach to Teaching Biotechnology and Bioengineering to an Interdisciplinary Audience," *Int. J. Engng Ed.*, vol. 15, no. 4.
[4] Alves Junior, P.N., et al. (2024). "Efficiency Analysis of Engineering Classes: A DEA Approach Encompassing Active Learning and Expositive Classes towards Quality Education," *Environ. Sci. Policy*, vol. 160, p. 103856. doi:10.1016/j.envsci.2024.103865
[5] Zywno, M., “Work in Progress: Development, Implementation, and Evaluation of a Learning Object for Teaching Control Systems,” in *Proceedings of the 2004 ASEE Annual Conference & Exposition*, Salt Lake City, UT, 2004. doi:10.18260/1-2—13754.
[6] Wang, J., "Bidirectional and Collaborative Feedback Between Instructors and Students for Scholarship of Teaching and Learning (SoTL)," in *Proceedings of the 2020 ASEE Virtual Annual Conference Content Access*, 2020. doi:10.18260/1-2—34215.
[7] Fila, N.D., Hess, J.L., Mathis, P.D., and Purzer, S., "Challenges to and Development of Innovation Discovery Behaviors Among Engineering Students," in *Proceedings of the 2015 ASEE Annual Conference & Exposition*, Seattle, WA, 2015. doi:10.18260/p.23677.
[8] Connor, K.A., Ferri, B.H., and Meehan, K., "Models of Mobile Hands-On STEM Education," in *Proceedings of the 2013 ASEE Annual Conference & Exposition*, Atlanta, GA. 2013. doi:10.18260/1-2—22295.
[9] Aglan, H.A. and Ali, S.F. (1996). “Hands-on Experiences: An Integral Part of Engineering Curriculum Reform.” *Journal of Engineering Education*, *85*(4), pp. 327-330.doi: 10.1002/j.2168-9830.1996.tb00252.x.
[10] Bridge, J., "Incorporating Active Learning in an Engineering Materials Science Course," in *Proceedings of the 2001 ASEE Annual Conference & Exposition*, Albuquerque, NM, 2001. doi:10.18260/1-2—9369.
[11] Fong, K. D., & Ciston, S., “Modifications to a Graduate Pedagogy Course to Promote Active Learning and Inclusive Teaching,” in *Proceedings of the 2020 ASEE Virtual Annual Conference Content Access*, 2020. doi:10.18260/1-2—34984.
[12] Bankhead, R. B., & Olmstead, T. A., & Mannard, J., “Changing Student Behavior through the Use of Reflective Teaching Practices in an Introduction to Engineering Course at a Two-Year College,” in *Proceedings of the 2001 ASEE Annual Conference & Exposition*, New Orleans, LA, 2016. doi:10.18260/p.26476.

[13] NSF AWARD SEARCH: Award # 2308531 – Collaborative Research: Track 4: Developing Equity-Minded Engineering Practitioners (DEEP). https://www.nsf.gov/awardsearch/showAward?AWD_ID=2308531
[14] Rosch, D. M., & Imoukhuede, P. I. (2016). "Improving bioengineering student leadership identity via training and practice within the core-course." *Annals of Biomedical Engineering*, *44*(12), 3606–3618. doi:10.1007/s10439-016-1684-5.
[15] Walker, J. M., & King, P. H. (2003). "Concept mapping as a form of student assessment and instruction in the domain of bioengineering." *Journal of Engineering Education*, *92*(2), 167–178. doi:10.1002/j.2168-9830.2003.tb00755.x
[16] Billiar, K., Gaver, D.P., Barbee, K. et al (2022). "Learning Environments and Evidence-Based Practices in Bioengineering and Biomedical Engineering." *Biomed Eng Education* 2, 1–16. doi:10.1007/s43683-021-00062-z.
[17] Vlasseva, S., & Razmov, V., "Feedback Techniques for Project Based Courses," in *Proceedings of the 2004 ASEE Annual Conference & Exposition*, Salt Lake City, UT, 2004. doi:10.18260/1-2—12749.

Appendix A

Type of course [Ref.]	Type of feedback	What was studied/changed	Impact of study on course
Bioengineering [1]	• Formative assessments (frequency, voluntary, low-risk)	• Feedback in every lecture • Pre/post lecture assessments (non-graded) • Clickers to test understanding	• Timely, targeted interventions • Assessments with course learning outcomes (CLOs)
Bioengineering [2]	• Quantitative feedback based on observations with graphs and numbers as feedback	• Use of VaNTH system to observe and assess teaching effectiveness • Class interactions, engagement, and effective teaching	• Professors improved lesson delivery by using elements of How People Learn (HPL) theory • Increased student engagement and effective teaching practices
Bioengineering [14]	• Leadership training • Teamwork feedback with CATME assessment • StrengthsQuest feedback	• Team roles/dynamics • Effectiveness of role rotation for teams • Leadership identity and leader motivation	• Increased leadership identity and motivation to lead • Improved teamwork and interpersonal skills • Positive student development for leadership roles
Biomedical Engineering [15]	• Interviews that are structured • Concept mapping feedback	• Novice-expert distinctions in knowledge structures • Students' conceptual understanding over time • Concept mapping use as an assessment tool	• Improved conceptual understanding and integration of BME concepts • Helped students visualize intellectual growth • Engaged students in critical thinking and knowledge structuring
Biomedical Engineering [16]	• Interactive workshops and surveys • Faculty and student participation in learning environment discussions	• Team-based, project-based, and experiential learning • Problem identification for different problems in industrial, clinical, and global settings	• Encouraged adoption of active and team-based learning • Identified need for faculty training on inclusion and diverse team-based projects
Biotechnology/ Bioengineering [3]	• Cooperative learning exercises • Cross-disciplinary and teamwork • Peer feedback • Mid-semester and end of semester evaluations • Peer evaluations • Student to professor feedback • Peer-to-peer feedback	• Added interdisciplinary learning for engineering, chemistry, biology, and physics • Studied students' complete final projects in teams	• Improved interdisciplinary communication and collaboration between students • more hands-on experience with bioengineering/ biotechnology applications
Engineering [2]	• *To student:* reflective essays, peer reviews, team rankings, journaling • *To instructor:* outside experts, effective conversations	• How to choose feedback mechanisms for a course • Ease of access, unbiased, sensible feedback styles	• Variety of feedback styles to support different learning styles

Engineering [4]	• Data envelopment analysis (DEA)	• Active learning strategies • Assessments avoiding subjectivity from instructors & students • Smaller classes	• Instructors receive training on adapting strategies for different class sizes
Engineering [17]	• *To student:* instructors, outside experts, project artifacts and tools, peer students, self • *To instructor:* students, other domain experts, previous versions of the course, self	• Instructors concerned about time spent on feedback • Student essays, student portfolios	• Feedback to students & instructors • Peer student feedback • Group feedback • Team rankings • Peer reviews • Self-observation & reflection • Journaling
Engineering [5]	• Cooperative Learning Object Exchange (CLOE)	• Enhance active learning & visualization • Provide students formative feedback	• Online quiz with instant feedback & scoring • Interactive online modules • Increase student engagement & support active learning

Studies of bio(medical) engineering and general engineering course feedback.

Appendix B

Pre-Focus Group Survey

1. Name
2. When you took BIOE 360, what was your status?
    a. 2nd year (sophomore)
    b. 3rd year (junior)
    c. 4th year (senior)
    d. Course staff (TA or grader)
3. What grade did you earn in the class? (For example, C+, A-, B)
4. I identify as...
    a. Female
    b. Male
    c. Non-binary/non-conforming
    d. Prefer not to respond
5. During class, I mostly...
    a. Worked with a group
    b. Worked on my own
    c. A mix of both
6. Give an example (or examples) of a time(s) you felt a sense of <u>belonging</u> in BIOE 360.
7. Give an example (or examples) of a time(s) you felt a sense of <u>connection to the field of bioengineering</u> in BIOE 360.
8. Give an example (or examples) of a time(s) you felt a sense of <u>confidence</u> in BIOE 360.
9. Explain how you <u>reflected on your learning</u> in BIOE 360.
10. When did you feel <u>engaged with</u> the material in BIOE 360?
11. When did you feel <u>distant from</u> the material in BIOE 360?
12. What did you <u>like</u> about the classroom setup […]?
13. What did you <u>dislike</u> about the classroom setup […]?

Appendix C

Post-Focus Group Survey

1. Name
2. What were your goals/expectations for the focus group? Explain if they were met or not.
3. Please rate the following (*strongly disagree, disagree, neutral, agree, strongly agree*):
    a. My voice was heard
    b. The focus group met my goals and expectations
    c. The outcome of this group will improve the course
4. I participated....
    a. Online
    b. In person
    c. Over email
    d. A combination of the above
5. How many meetings did you attend or prepare for?
    a. 1
    b. 2
    c. 3
6. On average, how many hours did you spend preparing for each meeting? (*0-10*)
7. Do you have any comments/suggestions on the format of the focus group? What were the advantages and disadvantages to the format you chose?
8. Please rank the following, in regards to how much you believe the focus group will improve the following aspects of the course:
    a. Lectures
    b. Exams
    c. Active learning (in class)
    d. Homework
    e. Grading
    f. Participation
    g. Other (explain below)
9. Use this space to explain your rankings, if desired.
10. For "other", what additional aspects will be improved?
11. In your opinion, whose view(s)/voice(s) were *not* captured in this focus group? How could that be improved?
12. In your opinion, will this focus group ultimately lead to a more equitable environment? How?
13. Any final thoughts or ideas not captured in the focus group?