

## **Defining your Why: Cultivating Identity and Belonging through Coaching on Communication**

**Dr. Andrea T Kwaczala, Western New England University**

Andrea Kwaczala is an associate professor at Western New England University in the biomedical engineering department. She teaches Biomechanics, Product Development and Innovation, Senior Design and Prosthetic and Orthotic Devices. She also teaches in the 1st year program.

**Andrea Davis, Western New England University**

**Dr. Heidi Ellis, Western New England University**

Heidi Ellis is a Professor in the Computer Science and Information Technology department at Western New England University. Dr. Ellis has a long-time interest in software engineering education and has been interested in student participation in Humanitarian Free and Open Source Software (HFOSS) since 2006.

## What's Your Why?

### Helping students define their explicit value proposition using a 3-minute pitch

#### Abstract

Articulating your value and defining identity within a learning community can be a challenge for undergraduate students. Developing appropriate communication skills and strategies to improve can be taught using peer-, self- and faculty-feedback tools. This is done through providing opportunities to fail and iterate. An appropriate framework using a pitch worksheet and in-class practice helped to guide students to curate unique attributes about themselves and strongly articulate how they create value for their community framed in their identity. Students from 3 different 1<sup>st</sup> year seminar classes were assigned to create a 3-minute pitch about their identity, purpose of studying their major at Western New England University, and to include a personal anecdote. After a short 15-minute lecture on effective pitch communication techniques, students were given a worksheet to help formulate their script and were required to practice out loud with a classmate. They were instructed to video record and watch their pitch to give self-improvement. The final pitch video was evaluated by the faculty member using a rubric to score pitch performance, communication skills, and value creation. Three faculty teaching different sections of seminar worked collaboratively across disciplines to measure n=19 engineering students, n=14 computer science students, and n=8 communication students. An additional 68 students in a different seminar class served as a control group. Additionally, after the completion of the project, the three faculty evaluated the student pitches using a pitch rubric that was designed to assess technical content, communication skills, and articulation of the entrepreneurial mindset, focused on “Creating Value. To identify the interrater reliability of the faculty feedback, each of the faculty-evaluations were compared to one another and screened against an AI-based evaluation tool that had been trained using the scoring rubric and individual student's video content. Student self-perception of communication, identity and belonging were evaluated using IRB-approved pre- and post-surveys. Students were asked to reflect on the various forms of feedback and the overall pitch experience.

#### Background

***Public Speaking Anxiety and Improving Communication:*** Public speaking anxiety refers to the high level of anxiety or distress a speaker feels while delivering or preparing to deliver a presentation in front of a group of people. (O’Hair, et. al, 2011; Bodie, 2010). Fear of public speaking is one of the most reported fears in the population at large (Sawyer, 2016). Students who have high public speaking anxiety may engage in avoidance behaviors which can include attempts to avoid public speaking and giving shorter speeches than their peers with lower public speaking anxiety (Gallego, et. al, 2022). Managing public speaking anxiety and improving communication skills can better prepare students for advanced study and communication required in the workplace. Helping students manage public speaking anxiety can build

confidence. Nash, Crimmins, and Oprescu (2015) found that the first-year students who completed pre- and post-public speaking exercises and assessment identified greater feelings of satisfaction and less fear, indecision and confusion in relation to public speaking and public speaking assessment” (p. 594). Giving students additional opportunities to practice public speaking – including workshops, courses, and modules within classes – can help increase students’ confidence with presentations. (Grieve, 2021).

***AI in Assessment in Public Speaking:*** The use of AI in higher education is growing rapidly. In a meta-analysis of AI in student assessment, Gonzalez-Calatayud, et. al, (2021) the main use of AI in education has been for tutoring and assessment (p. 5467). Cope, et. al, (2021) argue that AI could, in time, replace most traditional assessments. “Artificial intelligence... can support recursive feedback systems that are integral to learning itself. Instead of sampling, the dataset can be all recordable interactions during the learning process, including among other things engagement with computer-mediated content resources, interactions with peers and teachers, and knowledge representations in the form of student work” (p. 5) Cherner, et. al, (2023)’s study on use of AI in public speaking courses notes that the immediacy of AI feedback for students is valuable, but it should not be the sole piece of feedback students received on their presentation. In a study of AI feedback in public speaking, Isotalus, et. al, (2025) found an AI coach provided valuable feedback but required a faculty member’s support in interpreting that feedback.

## **Study Design**

Three different 1<sup>st</sup> year seminar classrooms were used in this study. The seminars were from different majors, one of each in communications, computer science, and engineering. A general engineering seminar was used as a control, who did not receive the educational intervention and only completed the pre-survey. A pre- and post- survey was given to students before the intervention and within a week of the completion of the in-class assignment, concluded by faculty-feedback on their “Why” pitch video. The following number of 1<sup>st</sup> year college students completed the study (control: 68; engineering; pre: 19 and post:15, computer science pre:14 and post:14, communications pre:8 and post:8).

## **Intervention**

A short PowerPoint lesson on effective communication was presented by each instructor for the seminar class. The faculty discussed pitch structure focusing on speaking to your educational identity. Students learned the importance of emphasizing value creation, telling a personal story, and using strong communication tools such as voice projection, eye contact, and clear, concise statements to emphasize their purpose as a student at Western New England University. The instructors focused on the importance of practicing and working towards speaking naturally and fluently about themselves in a professional manner.

Students were given a 1-page pitch worksheet to outline their pitch (**Appendix A**) and time outside of class to draft their first pitch script. In the following class, they presented to an

individual classmate and received feedback on pitch story/theme, communication style and noticeable things to improve the quality of the pitch. After receiving peer feedback, students made a <3-minute video using a Western New England University background slide on PowerPoint and were allowed to use the typed script to present. They were instructed to convert the final .PPT file to an .MP4 and upload the final pitch to the school's learning management system (LMS, Desire2Learn).

The final video was analyzed by course instructors using a pitch rubric (**Appendix B**) who also wrote personalized feedback to encourage each individual student to continue to develop their Why Pitch. The transcripts from pitches were also evaluated by AI tools and compared to faculty evaluations (**Appendix C**).

A pre- and post-survey was delivered via QR code projected in the classroom and students were encouraged to participate in the research Study. Those that chose to complete the Qualtrics survey used the anonymized form and completed it using their cell phones. The survey asked brief background questions, major, gender identity and personality type. It also included Likert-scale (1-5) questions that had been combined from 3 validated tools. Questions focused on engineering/computer science/communication self-efficacy (Mamaril, 2016), classroom identity (Hoffman, 2022), and self-perceptions towards their ability or experience with oral communication (McCrosky, 1970). The classroom surveys were modified to read as [Major]-specific responses, to evaluate engineering-self efficacy vs computer science self-efficacy vs communications self-efficacy (**Appendix D**). The survey was approved by Western New England University's Institutional Review Board.

## Results

**Summary Data:** From 145 students surveyed, 67% identified as male, 26% as female, and 7% as non-binary/third gender (3 individuals self-identified as transfeminine). Thirty percent considered themselves first generation students. Twenty one percent self-reported as extroverts, while 55% identified as introverts (**Table 1**).

**Table 1. Summary data from the intake on the survey.** A total of n= 145 students were surveyed from engineering, computer science and communications 1<sup>st</sup> year while they attended 1<sup>st</sup> year seminar classes.

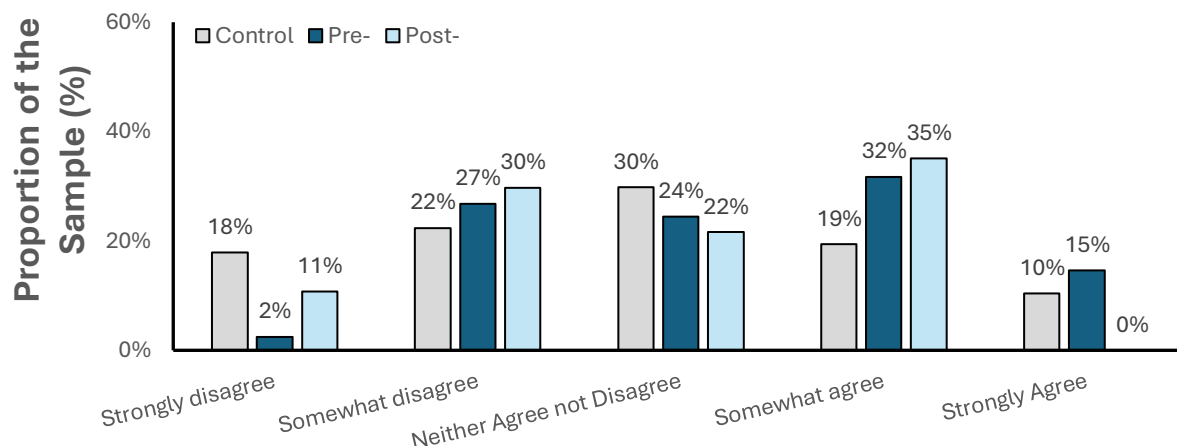
Family History		Gender Identity		Personality Type	
1 <sup>st</sup> Generation	43 (30%)	Male	97 (67%)	Introvert	79 (54.5%)
Not 1 <sup>st</sup> Generation	94 (65%)	Female	38 (26%)	Extrovert	30 (21%)
I don't know	8 (5%)	Non-binary / third gender	10 (7%)	I don't know	15 (10%)
				Neither	21 (14.5%)

**Intervention did not change student self-perceptions, but there were experiential differences based on personality type:** In the pre-survey, all measures of self-perception on major-identity, classroom belonging and skills in communication were similar across each of the three majors:

Communication, Computer Science, and Engineering. There was only a significant difference between Communications majors who felt less relaxed when giving a speech compared to their cohorts in the Computer Science class (One-Way ANOVA, post hoc: Student's t-test,  $p=0.03$ ).

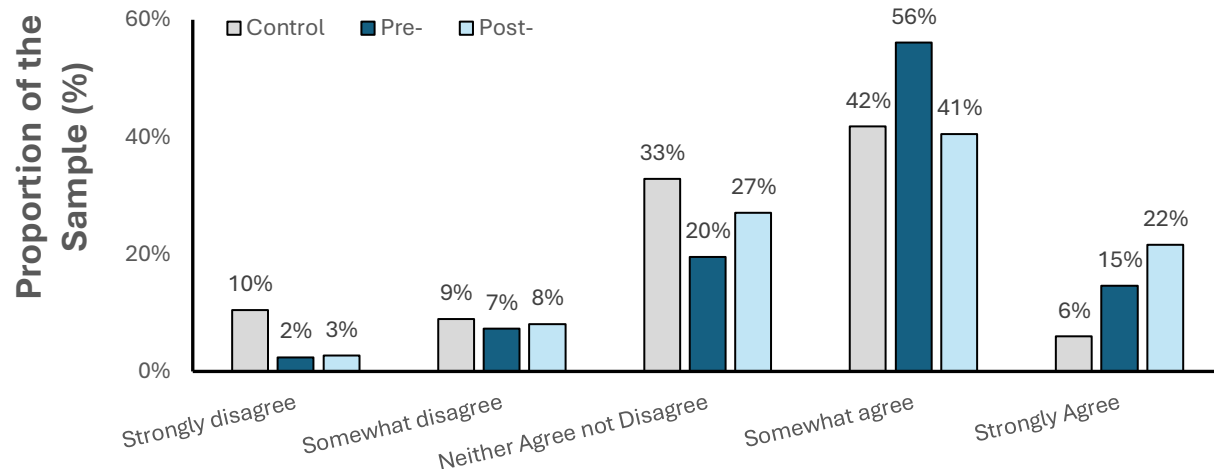
After the module completed, the post-survey results revealed that Computer Science students were more likely to express embarrassment about giving a pitch in front of the class, compared to both Communication students and Engineering students (One-Way ANOVA, post-hoc: Student's t-test,  $p=0.01$ , Comm, and  $p=0.04$ , Eng). Communications students felt the highest level of respect in their classroom, which was significantly higher than Computer Science students (One-Way ANOVA, post hoc: Student's t-test,  $p=0.02$ ).

There were no significant changes in student's self-perception related to self-efficacy, classroom belonging, or feelings towards using video analysis or presenting in front of a classroom. There was a 14% reduction in response to "Speaking in front of a peer or a small group of peers about myself will make me feel self-conscious or embarrassed" but this was not yet significant (Student's t-test,  $p=0.065$ ). However, there was a downwards shift towards neutral that was hopeful of a positive impact of the module on student's self-perception (**Fig. 1**). This suggests students felt more comfortable presenting in front of their peers after finishing the pitch module.



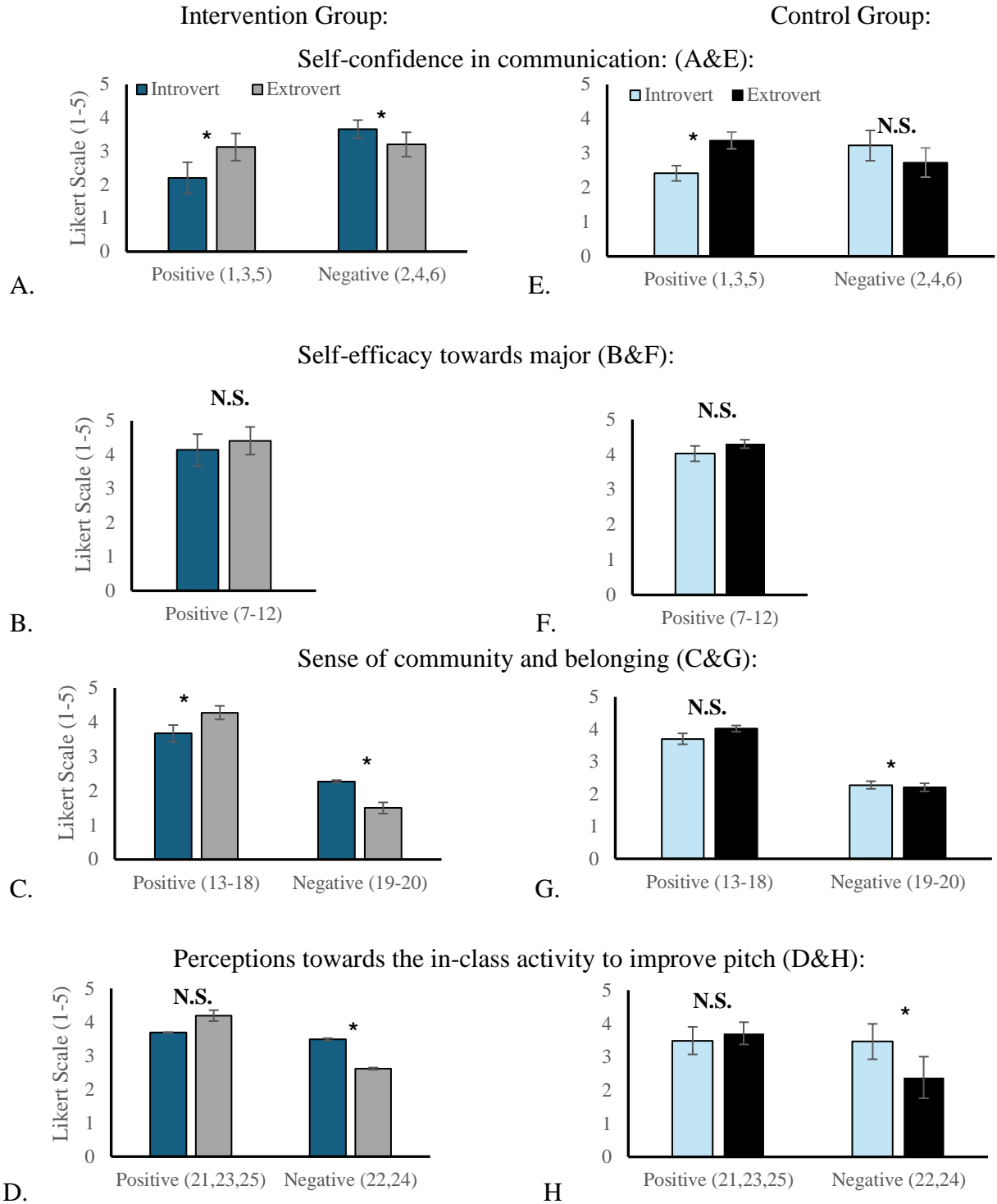
**Figure 1. Student self-perceptions related to classroom presentation.** "Speaking in front of a classroom makes me self-conscious or embarrassed."

The class was split in terms of positive feelings towards the value of video recording the pitch for feedback, with some shifting to a neutral stance and others shifting to a strongly agree. This suggests variability in the type of learner and the importance of varied modalities of class assignments and methods of assessment (**Fig. 2**).



**Figure 2. Student self-perceptions related to the value of using a video to self-evaluate their pitch performance.** " Video recording my 3-minute pitch was an objective way to notice and correct any habits or mistakes that might affect my confidence."

Interestingly, when data was sorted based on self-reporting of personality types "introvert" vs "extrovert" only those that confirmed either type was analyzed, and all others were excluded for this analysis. Extroverts were consistently higher when self-scoring their confidence in giving speeches (Student's t-test,  $p < 0.05$ ). There was little difference between extroverts and introverts in terms of their perceived ability to succeed within their major (Student's t-test,  $p > 0.05$ ). Extroverts consistently rated their sense of belonging within their classroom higher than introverts and recognized the value of pitch exercise and tools taught as positive, such as watching their video to improve the pitch (Student's t-test,  $*p < 0.05$ , N.S., not significant, **Fig. 3**).



**Figure 3. Average scores from the self-perception survey.** Averages were found for questions related to (A&E) confidence in giving a speech, (B&F) self-efficacy in selected major, (C&H) sense of belonging in the 1<sup>st</sup> year classroom and value of the review of videos to improve pitch (D&H) in intervention group (left, navy/gray) and control group (right, light blue/black). Individual questions can be found in **Appendix B (Q5-Q10)**. Positive implies positively phrased survey questions and negative are inversely or negatively phrased survey questions (student's t-test, \*p<0.05, N.S. – not significant).

These results were consistent in both the intervention group (A-D) and the control group (E-H). It is possible that the extroverts were high performers in the pitch exercise and therefore rated this as a positive experience with a higher level of value of the exercise because it was a positive experience for them. Inversely, it seems intuitive that introverts would find a public-speaking assignment more stress-inducing and something they have less confidence in compared to the extroverted students. These data could suggest higher levels of self-confidence in their individual skills in oral communication, specifically related to presentations, but these results require additional research to confirm these findings.

**Using AI to Assess Student Outcomes:** Co-Pilot and ChatGPT were both used to evaluate pitch transcripts using the Grading Rubric. The results of AI-evaluations were compared to the faculty evaluations using the same grading rubric. This was limited to transcripts of the pitch as any online video-based platform for video analysis was by paid subscription only. In identifying available AI tools, some interesting subscription-based options we discovered. These tools focus specifically on video analysis of body language and pitch performance, including uSpeak (Sarang, 2023) and Bodha (Cadet, 2024), which offer their services as AI tools that serve as coaches of body language and communication.

The researchers focused on pitch transcripts to compare individual faculty evaluations vs evaluations by AI using both Co-Pilot and ChatGPT. Three scripts were selected that represented a high- medium- and low-scoring pitch. The faculty were consistent in their evaluation using the pitch grading rubric (**Appendix B**). The high-score received a 90 +/- 4.2%, medium received an 83 +/- 5.5% and low-score received a 53 +/- 9.4%.

Co-Pilot matched the faculty response better than ChatGPT. Co-Pilot used the rubric and evaluated with lower scores at high: 75, medium: 69, and low: 46%. ChatGPT scores were much higher than the faculty scores with high: 98, medium: 96 and low: 71%. These results demonstrate the importance of considering which AI tool to use to complete student evaluations, where Co-Pilot seemed to be more consistent with the faculty evaluations compared to ChatGPT (**Table 2**). The researchers noted that the AI-tool offered excellent individualized suggestions for specific ways to improve their pitch, which could serve to further improve if students were to use this tool to practice and get better during an early iteration (**Appendix C**). It could save significant time when evaluating something like elevator pitches for a large class of 1<sup>st</sup> year students.

**Table 2. Pitch Scores for High-Medium and Low-scripts.**

Evaluator	Pitch 1	Pitch 2	Pitch 3
Faculty Evaluation Average	83.33%	89.58%	53.47%
Faculty Evaluation Standard Dev	5.51%	4.17%	9.39%
Co-Pilot Evaluation	68.75%	75.00%	45.83%
ChatGPT Evaluation	95.83%	97.92%	70.83%



The researchers were not able to find an AI tool that could evaluate body language of the pitches, given its importance in communication. However, during this study a strong resource was discovered that can help in self-evaluation of the pitch. Built within the Microsoft Office platform a tool called Microsoft Coach can provide real-time pointers on pitch performance (Perelman, 2024). This was tested using a few of the submitted PowerPoint presentations that were submitted to LMS. It did not work with the .MP4 file submissions. It was useful to demonstrate ways to practice and receive feedback prior to recording final video.

The program did not make improvements to the content-specific material, for instance the focus on value creation was not evaluated, or quality of storytelling. However, it informed the user on ways to improve talking points, evaluated word pacing, use of word fillers, pronunciation, and inclusive language (**Figure 4**). When you click on “learn more” it offers a plethora of communication skill techniques to make your pitch performance better. Microsoft Coach is incredibly helpful for students and faculty alike who need to make high-quality PowerPoint presentations and want feedback using AI, prior to their final presentation delivery.

## Your Rehearsal Report (Preview)

[Rehearse Again](#)

### Summary

Good job rehearsing! Keep up the hard work.

**1:07**

total time spent

**1**

slides rehearsed

### Fillers



Fantastic! You didn't say too many filler words in your speech!

[Learn More](#)

### Repetitive Language



Nice work! Your variety of word choice will help keep your audience engaged.

NEW

[Learn More](#)

### Inclusiveness



Great job! Your use of inclusive language was excellent.

[Learn More](#)

### Pace



100 – 150 words per minute is the recommended range for presentations. Try speeding up a little to better capture the audience's attention.

Your average pace over time

There's not enough data to show your pace over time.

[Learn More](#)

### Pronunciation

\* Based on General American English

BETA



Good job! Your pronunciation sounded clear.

How was your experience? ☆☆☆☆☆

### Pitch



Good pitch variation increases liveliness in your speech and keeps the audience engaged.

[Learn More](#)

### Body Language



Great job keeping your gaze forward, maintaining good distance from the camera, and giving the audience a clear view of your face.

NEW

[Learn More](#)

**Figure 4. Microsoft Coach is an online AI-based platform within PowerPoint that is integrated into Microsoft Office.** It provides real-time feedback on communication performance when practicing within a PowerPoint presentation.

***Transcribing and Ground Theory to Categorize Student Pitches:*** All audible .mp4 videos were transcribed using Restream: transcribe-video-to-text (Kuhda, 2025). Personal identifying information was removed from the transcript, including name, age, and connection to Western New England University. A singular transcript was created based on all student submissions; this was fed into ChatGPT, which was asked to identify 8 unique themes. The results are as follows:

*Summary of transcripts evaluated by ChatGPT:*

*1. Identity and Personal Background:*

- Many students reflect on their upbringing, cultural identity, and familial influences.
- First-generation students and those inspired by family members' careers (e.g., engineering, healthcare) often mention their desire to make their families proud.

*2. Passion and Discovery of Major:*

- A significant number of students chose their majors after early exposure to technology, engineering, or healthcare.
- Many reference personal projects (e.g., building computers, robotics teams) or life experiences (e.g., volunteering, gaming) that ignited their interest.

*3. Career Aspirations and Practicality:*

- Job security and financial stability are prominent motivators, especially in healthcare and engineering fields.
- Some students explicitly shift majors due to perceived job market stability, such as moving from computer science to nursing.

*4. Community and Giving Back:*

- Students frequently mention a desire to contribute to their communities, either through mentoring, developing technology, or working in public service.
- Plans to create clubs, offer after-school programs, or develop tools to help others highlight this sense of social responsibility.

*5. Communication and Self-Expression:*

- Communications and journalism majors emphasize storytelling, the importance of listening, and creating meaningful connections.
- Students express a desire to amplify voices, inspire social change, and share knowledge through media or public speaking.

*6. Overcoming Challenges and Growth:*

- Many students narrate personal challenges, such as overcoming fear, switching majors, or convincing family members to support their chosen path.
- Resilience and self-discovery are recurring themes as students navigate uncertainty and adapt their goals.

*7. Creativity and Innovation:*

- Students in engineering and computer science often discuss innovation and problem-solving, highlighting their love for designing new products or solutions.
- Creative majors express a passion for artistic expression, media production, and using creativity to influence societal change.

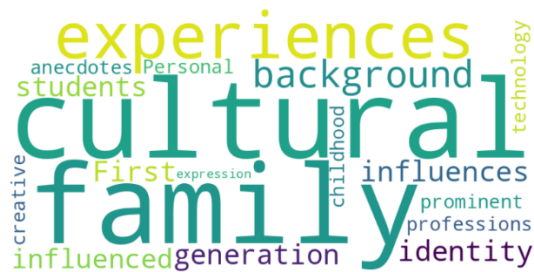
*8. Teamwork and Collaboration:*

- Participation in team projects, sports, or student organizations is frequently highlighted as shaping teamwork skills and fostering collaboration.
- Robotics teams, athletic experiences, and group projects reflect the importance of collective effort in student development.

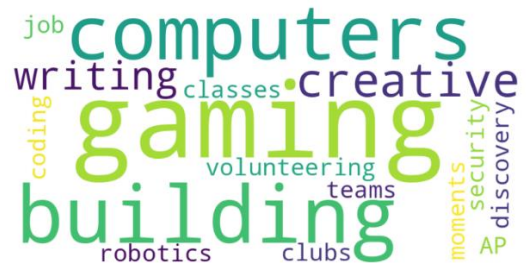
With the common goal of using this in-class activity to help with community formation within the 1<sup>st</sup> year seminar classroom, the faculty discussed ways of improving the output in the future. An interesting way to utilize the AI-based results would be to report back to students the findings of these common themes. They used AI to generate word clouds for each topic area within the

evaluation framework. For instance, “*identity and personal background*” was used to find similarities across students, where “*passion for the chosen field*” revealed common topics in the computer science seminar class (**Figure 5**).

*Identity and Personal Background:*



*Passion for the chosen field:*



**Figure 5. Word clouds generated by AI that were topic-specific from the entire class transcripts.** These can be used to report back to students as a class to find commonalities among the cohort.

The researchers instructed ChatGPT to provide an in-depth analysis of each of the major areas that it identified. The 8 themes had several common patterns within that included desire to do good, desire to teach others, interest in expressing creativity, and balance between receiving a practical degree for career success and pursuing something they were passion about when selecting their degree or major.

***Time Analysis of Grading Using AI:*** It took approximately 7 minutes for faculty to evaluate each individual pitch. This included listening to the 3-minute pitch and completing the evaluation in Excel, providing feedback and posting it back to LMS for student feedback. For a small class size of 20 students this equated to 140 minutes of grading time for the pitch assignment.

In comparison, to utilize AI to aid in grading, the pitches first had to be converted to .MP4 files and then converted to transcripts prior to loading into AI. The conversion of pitch to scripts was burdensome and took ~140 minutes but had a learning curve to identify the right tool and to clean the scripts of identifying information. Once all scripts were converted, it took approximately 5 minutes to set up the prompts and load the rubric into Co-Pilot/ChatGPT. After setup, it took ~20 seconds to run the assessment. Scores were then manually entered into the final Excel to track student work requiring another 30 seconds. In total, the process took 20-30 minutes for a class of 20 students to complete. This could be done faster with practice, especially after running the same assignment for several sections, and/or repeated over several semesters. This represents a significant time saved of nearly 2 hours of time back in the faculty’s schedule. The downfall is the lost opportunity to learn personal details about the individual students that can only be gained by watching each of their pitch videos.

## Discussion

Introducing an assignment that allows students to articulate their purpose for studying in higher education is an important exercise that helps to get to know 1<sup>st</sup> year students and to help them identify and focus on their choice to go to college. This activity can strengthen classroom relationships and help instructors to connect more personally with their students in the critical first few weeks when retention problems are most likely to occur. Feeling connected to campus and close to a professor can make strong bonds to the university. In the future, this assignment will utilize AI by having an assignment that allows students to interact with ChatGPT or Co-Pilot. They will use this tool to help improve their pitch, further emphasizing the way of getting feedback from many sources and practicing their pitch to several different audiences to maximize their performance.

**Using AI to reduce evaluation burden:** Using AI tools can help consistently evaluate every individual pitch, to provide instrumental feedback to help students improve. It can also be used to aid in creating class discussions and follow up by developing word clouds to show commonalities across people's individual stories. Comparing human-based evaluation to AI-based evaluation saw a time savings of 2 hours for a class of 20 students. It could improve the quality of feedback and the speed at which feedback can be provided. However, it might limit the faculty-student connection that can be created by the assignment when the faculty does not directly evaluate each individual student.

**Technology Challenges:** Accessibility of technology can be challenging for some students. Making the videos on phones was easier for them, but sharing the large video file to the LMS was complicated and led to several not completing the assignment. Two students worked with the instructor to share the video file using Google drive. Finding effective ways to share and exchange large video files will be a challenge with assignments like this moving forward. The research team used Microsoft Teams to share content within the university's OneDrive which made this easier.

**Final Format of the Pitch:** Some students expressed discomfort in giving a class-wide presentation and felt better after realizing the assignment was a video. Others expressed that it would have been more impactful to have the chance to present orally in front of their peers. This would also have let everyone learn more about each of their classmates. Student preference was evident in their feedback. One computer science student said:

*"I liked being able to say my pitch to someone else in the class. Through this I was able to improve my pitch and find issues with my presenting skills. I also found it a lot easier to tell my pitch to a fellow class member than a camera"*

Another student noted that it would have been better to present in front of the class.

*"I feel as if it would be good to have a secondary option for the final pitch. I consider talking to a camera and talking to a class to be very different."*

***Time Restraints on Assessment and Connection:*** It was a time-consuming assignment to complete in the 1<sup>st</sup> semester to provide individual feedback to ~20 students in the class. It would be hard to expand this to seminars that have 50 or more students, or multiple sections, but this is where AI evaluations could help to improve grading efficiency. Additionally, if the point of the activity is to improve classroom connections and improve communication, switching to an AI-based evaluation of the student pitches will take away the human interaction.

This personal knowledge accumulated by the professor learning about personal anecdotes about each student is what elicits a personal connection between faculty and student. This should be considered carefully when selecting the mode of evaluation. One suggestion is to have the students submit the videos for evaluation (by AI) but have the final pitch be assigned as an in-class presentation, so all members of the learning community hear their personal stories.

The researchers also recognized a time-efficient way to document and summarize student written feedback. This feedback came in the form of open-ended responses at the end of the survey, but this could also apply to student evaluations at the end of the course. See the AI based summary for the prompt “*What could be improved in this module?*”

(Co-Pilot) Here's a summary of the suggested improvements for the module:

1. **Practice and Preparation:**
  - a. Have 2 practices with people and 2 individual practices of the pitch.
  - b. More in-class time and opportunities for peer review.
  - c. More feedback before making the final video.
2. **Submission Process:**
  - a. Provide a secondary option for submitting presentations, such as a meeting instead of just a video.
  - b. Submit the video a week before to allow time for feedback and transition to in-person presentations.
3. **Content and Structure:**
  - a. Include more short answer questions.
  - b. Avoid asking the same question in different ways.
  - c. Provide more structure for the pitch to help with timing.
4. **Class Dynamics:**
  - a. Focus on other aspects of college instead of just clubs.
  - b. Make people give some form of presentation in class.
5. **General Feedback:**
  - a. Some found the module already exemplary and wouldn't change much.
  - b. Others felt it covered the basics of communication well and didn't need significant changes.

These suggestions highlight areas where the module can be enhanced to better support students' learning and development. Is there anything else you'd like to add or discuss?

Additional survey question summaries can be found in **Appendix F**.

## **Lessons Learned and Instructor Tips**

**Provide options for final pitch format:** This was a positive classroom experience for both students and the instructors. Several pitch practices together in class helped to create a

community. To make this successful, allow enough time for both in-class preparation, practice with each other, and the opportunity to have those who want the chance to talk in front of the class. Some would choose to perform live then to be bothered with technology and video creation, while others like the chance to make an optimized video in a private setting. Giving students autonomy on a personal assignment like this helps to increase their engagement.

**Use AI to practice before the final pitch:** Microsoft Coach was a major discovery that can benefit both students and faculty alike to get critical feedback when practicing for an important PowerPoint presentation. Microsoft Coach provided excellent feedback for body language and communication skills, but it lacks the ability to critically evaluate the quality of your content.

**Use AI for evaluation:** When using AI as a tool to grade student work, Copilot provided better feedback than ChatGPT but both tools were excellent for personalized comments that can help make grading faster. As models develop, this might change and paying for better ChatGPT models may also provide improved feedback. There is some setup time, and currently it only evaluates the pitch transcripts which have to be formulated in a separate step. However, this still drastically reduced grading time once the process was set up.

**AI reduces faculty-student connection:** Be aware that using AI in this way will remove the chance to watch your students' videos and to learn about them on a more personal level. The pitches spurred several out-of-class conversations that fostered a deeper faculty-student connection.

**Give various forms of feedback:** Students respond to feedback in different ways. Some prefer a positive cheerful email with some gentle reminders of ways to improve. Others like clearcut rubrics with scored evaluations. Remember, some students do not even look at feedback so limiting the time spent on grading is critical for faculty success.

**Protect student data:** As AI emerges, it is important for society as a collective to be mindful of rights and responsibilities when feeding information into the models. With something as person as a "What's your why?" elevator pitch about family, identity, and belonging, it is important to safe-guard personal information. We were careful to exclude all identifying information prior to feeding the transcripts into AI tools. As universities develop policies around the use of AI, they should consult with campus IRB representatives to better understand the process of protecting student data.

## **Future Work**

Pitch presentations are about delivering a dynamic conversation, using eye contact and positive body language. It will be interesting to see how AI technologies explore techniques to analyze body language. Finding a model that can properly analyze and interpret differences in non-verbal communication including facial expression, eye contact, posture, voice tone and pitch will be instrumental to properly evaluate a pitch performance and provide feedback on these aspects.

Future work should look at how students are impacted when expected to utilize AI tools to self-evaluate their own pitches. This will help make undergraduates more fluent in the power of using AI in day-to-day tasks. AI is also beneficial to make it more realistic to provide real-time feedback to students when performing assessments and using analytics of large data sets, like transcripts from pitches. Using AI to generate word clouds, or generate in-class discussions on commonalities among the students can help create culture and community within the classroom. The use of AI to construct some of these topics will help to easily close the loop or open further in-class discussions/activities about unique and overlapping student identities. This will ultimately help with community building during their 1<sup>st</sup> year experience to help faculty learn more about their students and find commonalities among the seminar class.

## Conclusions

This study determined that using a “What’s your why?” elevator pitch with guided support and a chance to practice and improve increased their confidence in giving oral presentations. It demonstrated the value of utilizing AI to complete evaluations of student work and to summarize large transcripts to share common themes among students in the 1<sup>st</sup> year classroom. This work helped to demonstrate differences between introverted and extroverted students when it comes to self-perception of confidence and oral communication. Most critically, this paper produced data that demonstrates how AI can assess student work and provide high-quality feedback to students which can save faculty time. However, the quality of the AI-based assessment varied by the specific AI tool used and the results differed from the faculty scores.

## References

- Bodie, G. D. “A Racing Heart, Rattling Knees, and Ruminative Thoughts: Defining, Explaining, and Treating Public Speaking Anxiety,” *Communication Education*, 59(1), 70–105, 2009. <https://doi.org/10.1080/03634520903443849>
- Cadet K, Pammi S, “Assessments utilizing AI” [bohda.ai](https://bohda.ai), Bohda, 2024.
- Cherner, T., Fegely, A., Hou, C. & Halpin, P., “AI-Powered Presentation Platforms for Improving Public Speaking Skills: Takeaways and Suggestions for Improvement,” *Journal of Interactive Learning Research*, 34(2), 339-367, 2023.
- Cope, B., Kalantzis, M., & Searsmith, D., “Artificial intelligence for education: Knowledge and its assessment in AI-enabled learning ecologies,” *Educational Philosophy and Theory*, 53(12), 1229–1245, 2020. <https://doi.org/10.1080/00131857.2020.1728732>
- Gallego, A., McHugh, L., Penttonen, M., & Lappalainen, R., “Measuring Public Speaking Anxiety: Self-report, behavioral, and physiological” *Behavior Modification*, 46(4), 782-798, 2022. <https://doi.org/10.1177/0145445521994308>



González-Calatayud, V., Prendes-Espinosa, P., & Roig-Vila, R., “Artificial Intelligence for Student Assessment: A Systematic Review,” *Applied Sciences*, 11(12), 5467, 2021.  
<https://doi.org/10.3390/app11125467>

Grieve, R., Woodley, J., Hunt, S. E., & McKay, A., “Student fears of oral presentations and public speaking in higher education: a qualitative survey,” *Journal of Further and Higher Education*, 45(9), 1281–1293, 2021. <https://doi.org/10.1080/0309877X.2021.1948509>

Hoffman, M., Richmond, J., Salomone, K., “Investigating “Sense of Belonging” in First-Year College Students,” *Journal of College Student Retention: Research, Theory & Practice*, vol. 4, issue 3, 2022.

Isotalus, P., Eklund, M., & Karppinen, K., “Artificial intelligence as a feedback provider in practicing public speaking,” *Communication Teacher*, 39(1), 78–85, 2024.  
<https://doi.org/10.1080/17404622.2024.2407910>

Kuhda A., Surzhynskiy A., “Transcribe Video to Text - Get an AI-powered transcription of your videos for free right from your browser,” Restream, Inc, 2025.  
<https://restream.io/tools/transcribe-video-to-text>

Mamaril, N., Usher E.L, Li C., Ross, D., “Measuring Undergraduate Students' Engineering Self-Efficacy: A Validation Study,” *Journal of Engineering Education*, 105 (2), April 2016.  
DOI:[10.1002/jee.20121](https://doi.org/10.1002/jee.20121)

McCroskey, J. C., “Measures of communication-bound anxiety,” *Speech Monographs*, 37, 269-277, 1970.

Nash, G., Crimmins, G., & Oprescu, F, “If first-year students are afraid of public speaking assessments what can teachers do to alleviate such anxiety?” *Assessment & Evaluation in Higher Education*, 41(4), 586–600, 2015. <https://doi.org/10.1080/02602938.2015.1032212>

Perelman, P. “Can AI help with public speaking? A review of AI platforms” Duarte, Communication, Skills Training: <https://www.duarte.com/blog/review-of-public-speaking-ai-platforms/> April, 2024.

Sarang, J, “Upskill your communication. Record a video, Get Instant Feedback, Learn & Practice. Get an AI-powered report on your Body Language, Vocal Tone, and Words.” [Uspeaknow.com](https://uspeaknow.com), 2023.

Sawyer, C. R. De Gruyter, “Communication apprehension and public speaking instruction,” In P. Witt (Ed.), *Communication and learning* (pp. 397–426), 2016.

## Appendix A:

### Brainstorming Your Elevator Pitch Presentation

**Assignment:** You need to create a 3-minute pitch about yourself that clearly defines your purpose and informs others about yourself in a clear, concise way. Use this document to frame some concepts.

Outlining Your Pitch		
Prepping for Your Pitch	<b>Notes and Ideas:</b>  <i>Who is your audience?</i>  <i>What detailed information is most important?</i>  <i>What story are you trying to tell?</i>	
	<b>Intro: Who are you?</b>  <i>Use a simple description of your major/identity/role in society/ etc.</i>  <i>Using a hook can help lead them into your story.</i>	
	<b>Argument for Exigence:</b>  <i>Set a spark and come up with a catchy line that makes you memorable. What is it you want people to know about that is inspiring? A personal struggle, a sentimental connection to your major, a life dream or aspiration.</i>	
Writing the Pitch	<b>Value Proposition:</b>  <i>How does your degree or field of study help you bring value to the world/community/job market</i>	
	<b>Conclusion:</b>  <i>Finish with a definitive statement so people</i>	

## Appendix B.

The following survey was administered at the beginning and end of the in-class module. The survey was adjusted to express the individual's major on identity questions.

### Post - Survey - 1st Year - What's Your Why - Engineering

Intro: Thank you for participating in our survey! We are collecting data to see how developing a 3-minute elevator pitch can affect your mindset about your area of study, skills in communication and your feelings of belonging within your classroom.

#### Q1 My major is:

- ☐ Engineering (1)
  - ☐ Computer Science (2)
  - ☐ Communications (3)
  - ☐ Other (4)
- 

#### Q11 My engineering discipline is

- ☐ Biomedical (1)
- ☐ Civil, Construction, Environmental (2)
- ☐ Computer (3)
- ☐ Electrical (4)
- ☐ Mechanical (5)
- ☐ Undecided (6)

#### Q2 I am a 1st generation college student

- ☐ Yes (1)
- ☐ No (2)
- ☐ I don't know (3)

#### Q3 I identify as:

- ☐ Male (1)
  - ☐ Female (2)
  - ☐ Non-binary / third gender (3)
  - ☐ Self Identify as: (4)
- 

- ☐ Prefer not to say (5)

#### Q4 I consider myself a:

- ☐ Introvert (1)
- ☐ Extrovert (2)
- ☐ Neither (3)
- ☐ I don't know (4)

**Q5 Rate your opinion related to your communication experiences.**

	Strongly Disagree (1)	Somewhat disagree (2)	Neither agree nor disagree (3)	Somewhat agree (4)	Strongly agree (5)
I have no fear of giving a speech. (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Certain parts of my body feel very tense and rigid while giving a speech. (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel relaxed while giving a speech. (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My thoughts become confused and jumbled when I am giving a speech. (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I face the prospect of giving a speech with confidence. (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
While giving a speech, I get so nervous I forget facts I really know. (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**Q6 Rate your opinion in the following areas related to skill mastery in the classroom.**

	Strongly Disagree (1)	Somewhat disagree (2)	Neither agree nor disagree (3)	Somewhat agree (4)	Strongly agree (1)
I can master the content in the engineering-related courses I am taking this semester. (7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I can master the content in even the most challenging engineering course if I try. (8)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I can do a good job on almost all my engineering coursework if I do not give up. (9)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I can do an excellent job on engineering-related problems and tasks assigned this semester. (10)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I can learn the content taught in my engineering-related courses. (11)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I can earn a good grade in my engineering-related courses. (12)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**Q9 Rate your opinion in the following areas related to community and inclusion in the classroom.**

	Strongly Disagree (1)	Somewhat disagree (2)	Neither agree nor disagree (3)	Somewhat agree (4)	Strongly agree (5)
I feel that I belong to the WNEU's engineering community. (13)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I consider myself a member of the engineering world. (14)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel like I am part of the engineering community. (15)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel a connection with the engineering community. (16)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
In this engineering class I feel accepted. (17)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
In this engineering class I feel respected. (18)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
In this engineering class I feel excluded. (19)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
In this engineering class I feel insignificant. (20)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**Q10 These questions ask about your opinion on self-analysis after giving your oral presentations.**

	Strongly Disagree (1)	Somewhat disagree (2)	Neither agree nor disagree (3)	Somewhat agree (4)	Strongly agree (5)
Video recording my 3-minute pitch was an objective way to notice and correct any habits or mistakes that might affect my confidence. (21)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Video recordings of a 3-minute pitch made me self-conscious or embarrassed. (22)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Feedback from a small group or single peer was a useful way to help identify gaps and opportunities for improvement in myself. (23)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Speaking in front of a peer or a small group of peers about myself made me feel self-conscious or embarrassed (24)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Getting feedback from the professor on ways to improve my pitch was helpful. (25)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**Q11 I prefer feedback on my work (Select all that apply):**

☐

Through email (1)

☐

Through Kodiak (2)

☐

Oral feedback (3)

☐

Using a rubric (5)

☐

General comments from professor (6)

☐

I do not check or look at feedback (4)

**Q12 During this module, what did you learn about yourself or others, skills you developed, etc.:**

---

**Q13 What did you like about this module, and why:**

---

**Q14 What could be improved or changed about this module:**

---

## Appendix C:

**Table 1. A Pitch Rubric.** This was used to assess the “What’s your why” pitch. The rubric was completed while listening to individual student presentations and then given back to provide feedback to further improve their pitch.

	Example	Student 1	Student 2
<b>Value Creation</b>			
Used Story Telling	4	4	2.5
Had a clear hook	4	3.5	2
Had a theme to story	4	4	2
Added a memorable ahah!	4	3	2
<b>Value Creation Sub-score</b>	16	14.5	8.5
<b>Defined their Purpose</b>			
Connected to a personal anecdote	4	2	3.5
Defined impact on community or	4	3	3
Understood audience	4	3.5	3.5
Demonstrated intentions with	4	4	3
<b>Purpose Sub-score</b>	16	12.5	13
<b>Communication Skills</b>			
Did not fidget	4	4	4
Spoke confidently	4	4	3
Avoided use of clutter words "Uh,	4	4	4
Finished with clarity did not say	4	3.5	3.5
<b>Communication Skills Sub-score</b>	16	15.5	14.5
<b>Final Score</b>	48	42.5	36
<b>Grade</b>	<b>Score/48 *100</b>	<b>88.5</b>	<b>75</b>

**Individual Comments:** Your body posture, tone, and pitch were excellent. You are a strong and confident presenter. Slow your voice down a bit, so you can articulate and make a bigger impact. Give small pauses to allow your listener time to connect and catch up. It might feel unnatural but talking slower will make you come across as even more confident in your voice and your story. I liked your hook talking about squeamish - pain. You loop it back in the end and it really made for a nice story telling narrative. Your pitch was short in length, so go a little deeper, did you have an experience with pain or hospitals that gave you this personal sense of being squeamish? Is your goal to overcome this feeling through championing medical devices or to try to prevent it all together? This might lead you down different paths, more clinical focused vs wet lab/benchtop behind the scenes focused. I would like more details, more input about you as an individual - even to talk about your individual strengths as a student and how you will apply them. Your section about the different areas of biomed was really strong, expand this more.

## Appendix D.

Co-Pilot used the pitch grading rubric to evaluate individual transcripts from the elevator pitch assignment.

### Value Creation

1. **Used Storytelling:** The script uses some storytelling elements, such as personal anecdotes about your brothers and your decision to choose this major.
2. **Had a Clear Hook:** The hook is somewhat clear when you mention doing the pitch in your car, which grabs attention due to its unconventional setting.
3. **Had a Theme to Story:** The theme of choosing a major for job security and personal interest in technology is present but could be more consistent.
4. **Added a Memorable "Aha!" Moment:** The script lacks a strong "aha!" moment that clearly defines a turning point or realization.

**Sum - Value:** 3/4

### Defined Their Purpose

1. **Connected to a Personal Anecdote Purpose:** You connect your purpose to personal anecdotes, such as your brothers' influence and your interest in technology.
2. **Defined Impact on Community or Society:** The script does not clearly define the impact on the community or society.
3. **Understood Audience:** You address your audience directly, but the script could be more focused on their interests and expectations.
4. **Demonstrated Intentions with Passion:** The script shows some passion, but it could be more evident and consistent throughout.

**Sum - Purpose:** 2/4

### Communication Skills

1. **Did Not Fidget:** While this cannot be assessed from the script alone, the written content is somewhat casual and could be more polished.
2. **Spoke Confidently:** The script is written with some confidence, but there are areas where it could be more concise and clear.
3. **Avoided Use of Clutter Words ("Uh, um, like"):** The script uses several clutter words like "you know" and "like," which could be minimized.
4. **Finished with Clarity (Did Not Say "So, that's it"):** The script concludes with a statement, but it could be more clear and impactful.

**Sum - Communication Skills:** 2/4

### Total Score

**Total:** 7/12

**Total/48\*100:** 58.33%

### Individual Comments:

- Your script has some good personal anecdotes, but it could benefit from a more consistent theme and a stronger "aha!" moment.
- Consider defining the impact you want to have on the community or society more clearly.
- Minimize the use of clutter words like "you know" and "like" to maintain a more professional tone.
- Practicing your delivery will help ensure you maintain the same level of confidence and clarity when speaking.



## Appendix E.

ChatGPT was used to summarize the pitch text transcripts combined from all students into common themes.

Here are some common themes that emerged from the analysis of the student video transcripts:

### **1. Identity and Personal Background:**

Many students introduced themselves by describing their background, cultural identity, or family Influences. First-generation students and those influenced by family professions or cultural experiences are prominent. Personal anecdotes, such as childhood experiences with technology or creative expression, are often used to shape their narratives.

### **2. Passion for the Chosen Field:**

Students frequently highlighted personal experiences that sparked interest in their majors (e.g., gaming, building computers, creative writing, volunteering). They often described moments of discovery, like joining coding clubs, robotics teams, or AP classes, as pivotal. Some students shifted their focus after exposure to new areas (e.g., switching from computer science to nursing for job security).

### **3. Future Aspirations and Career Goals:**

Many presentations linked students' majors to their long-term aspirations, such as creating software, working in healthcare, or pursuing media careers. Students expressed a desire to use their skills to positively impact the community or address social issues. Career stability and financial security were commonly cited motivators, especially in fields perceived to have high demand (e.g., nursing).

### **4. Value Proposition and Contribution:**

Several students framed their future careers as opportunities to give back, either by teaching others, developing software for underserved communities, or creating meaningful content. The desire to “leave a mark” or contribute to societal change through technology, healthcare, or media was a recurring theme. Students often connected personal interests (e.g., gaming, art, sports) with the broader impact their field could have.

### **5. Challenges and Growth:**

Students reflected on the difficulties of choosing or justifying their majors, particularly in the face of familial expectations or job market uncertainty. Overcoming fear of failure, lack of direction, or communication barriers was a central narrative in several pitches. Personal growth through college experiences and the confidence gained from coursework, clubs, and internships were emphasized.

### **6. Creative and Non-Traditional Presentation Styles:**

Some students adopted informal, humorous, or unconventional approaches to their pitches (e.g., recording in a car or referencing pop culture). Authenticity and self-expression, such as poetry, storytelling, or casual language, were frequently used to engage the audience.

### **7. Community and Collaboration:**

A recurring theme was the importance of collaboration, whether through class projects, extracurriculars, or professional aspirations. Students expressed interest in fostering community through teaching, healthcare, or media representation. Many envisioned working in teams, learning from others, and making a collective impact.

## Appendix F.

**Co-Pilot was used to summarize student responses to 3-open ended questions in the post-survey. The questions were**

1. What did you learn about yourself and others, skills developed, etc?
2. What did you like about this module?
3. What could be improved or changed about this module?

### **Co-Pilot summary: What did you learn about yourself:**

1. **Speech and Presentation Skills:**
  - a. Slowing down your speech to manage time better.
  - b. Recognizing the importance of relaxing and staying calm during public speaking.
  - c. Realizing that talking for a few minutes can feel longer than expected.
  - d. Improving your ability to talk one-on-one and present better overall.
  - e. Finding it challenging to talk to a camera, which feels awkward.
2. **Confidence and Professionalism:**
  - a. Acknowledging the need to be more professional and confident.
  - b. Understanding that you need to be less nervous and take your time when presenting.
  - c. Gaining confidence through practice and exercises.
3. **Self-Reflection and Personal Growth:**
  - a. Learning more about yourself, including your interest in engineering.
  - b. Reflecting on why you want to be a biomedical engineer, which solidified your career path.
  - c. Discovering that you might be better at public speaking than you initially thought.
4. **Practical Tips and Feedback:**
  - a. Picking up key tips to improve public speaking.
  - b. Benefiting from multiple sources of feedback to enhance your presentation skills.
  - c. Realizing the importance of managing time and planning your schedule better.
5. **Miscellaneous Insights:**
  - a. Noticing that you tend to talk fast.
  - b. Questioning whether you are an extrovert or introvert.
  - c. Observing that others can push through challenges just like you do.

### **Co-Pilot Summary: What did you like about this module:**

1. **Preparation and Practice:**
  - a. Forced you to prepare for more oral presentations.
  - b. Provided opportunities to practice with others and by yourself.
  - c. Warm-up sessions helped polish your final presentation.
2. **Presentation Format:**
  - a. Enjoyed recording a video instead of presenting in front of everyone.
  - b. Found it easier to pitch to a classmate than to a camera.
3. **Self-Reflection and Learning:**
  - a. Gave you time to learn about yourself.
  - b. Helped you confront fears of presentations and pushed you out of your comfort zone.
  - c. Made you realize the importance of managing time and planning your schedule.
4. **Feedback and Improvement:**
  - a. Benefited from professors' feedback, which was very helpful.
  - b. Multiple sources of feedback helped improve your presentation skills.
5. **Class Dynamics:**
  - a. Enjoyed getting to know your classmates better.
  - b. Appreciated the small class size and the background provided.
6. **Content and Structure:**
  - a. Liked the freedom the module offered.
  - b. Found the module practical and helpful for professional development.

- c. Appreciated the low-stress environment while still learning about making presentations.
- 7. **Personal Growth:**
  - a. Realized you need to gain more confidence and be less nervous when presenting.
  - b. Found it interesting and enjoyed speaking your mind.
  - c. Appreciated the opportunity to give a speech and receive feedback.

**Co-Pilot summary of the suggested improvements for the module:**

- 1. **Practice and Preparation:**
  - a. Have 2 practices with people and 2 individual practices of the pitch.
  - b. More in-class time and opportunities for peer review.
  - c. More feedback before making the final video.
- 2. **Submission Process:**
  - a. Provide a secondary option for submitting presentations, such as a meeting instead of just a video.
  - b. Submit the video a week before to allow time for feedback and transition to in-person presentations.
- 3. **Content and Structure:**
  - a. Include more short answer questions.
  - b. Avoid asking the same question in different ways.
  - c. Provide more structure for the pitch to help with timing.
- 4. **Class Dynamics:**
  - a. Focus on other aspects of college instead of just clubs.
  - b. Make people give some form of presentation in class.
- 5. **General Feedback:**
  - a. Some found the module already exemplary and wouldn't change much.
  - b. Others felt it covered the basics of communication well and didn't need significant changes.

These suggestions highlight areas where the module can be enhanced to better support students' learning and development. Is there anything else you'd like to add or discuss?