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Work in Progress: KLIQED, A Feedback Tool for Fostering Peer Engagement during Student Oral Presentations

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Work-in-Progress: KLIQED, A Feedback Tool for Fostering Peer Engagement during Student Oral Presentations

Abstract

Oral communication skills are important in all academic disciplines (e.g. liberal arts, science, and engineering) and hiring decisions. In many college courses, oral communication skills are often assessed through student presentations. When requiring peer feedback, many instructors observe distractions, a lack of engagement, and low quantity and quality of feedback from non-presenting students. We developed a tool called KLIQED which offers a mnemonic template for students to use and comment in specific areas of the presentations they are attending or watching. The tool is unique in that it is specifically intended for use during oral presentations when attention and good listening skills are essential for students to be able to provide strong peer feedback. The intuition behind the acronym is to help the presentations resonate or "click" with students in the audience. This work-in-progress introduces the KLIQED tool along with its rationale, a template, emerging evidence on its effectiveness from students' perspectives, and tips for instructors. Future work includes survey data analysis and a content analysis of the peers' comments collected from completed KLIQED sheets to further assess the effectiveness of the tool.

Keywords: Oral communication, student engagement, project-based learning, attention

Background and Motivation

The value of oral communication skills

Communication skills, including reading, writing, listening, and presenting, are essential competencies for entering the workforce and for participating in society. Therefore, degree programs in all disciplines (e.g. liberal arts, science, and engineering) are expected to include communication skill development throughout their curricula. ABET-accredited engineering programs, for example, must demonstrate that graduates can communicate effectively with a range of audiences (Student Outcome 3) [1]. Furthermore, over 75% of AACSB-accredited business programs include oral communication as a learning goal [2]. Oral presentation skills in particular have been recognized as a great need for graduates since the 1990s [3] but research that focuses on oral communication, except for in ESL and EFL classrooms, tends to be sparse.

Effective oral communication cannot just be "studied" but requires practice. In higher education, this practice often comes in the form of delivering oral presentations (e.g., PowerPoint/seminars, posters) in the classroom or in a recording [4]. Oral presentations not only provide an opportunity to improve students' communication and presentation skills but have the potential to help students collect, organize, and construct information, increase student interest in learning, increase classroom interaction and participation, and enhance teamwork [5]. Though outside the scope of this paper, the ability to function effectively on a team is another essential professional skill that all graduates need. One suitable way to combine these professional skills is to have teams of students work on open-ended projects and present their work in a summative oral presentation. This strategy is suitable for multiple disciplines and all levels of undergraduates. In this paper, we include how our courses in engineering and economics use project-based learning and team oral presentations for the development of communication skills, including listening skills for non-presenting students.

Peer-feedback and the problem of distracted students during oral presentations

The benefits of oral presentations for the *presenting* students are well-established. However, the benefits of oral presentations for students when not presenting (i.e., when in the audience) can be much less clear. The hope is that non-presenting students will be able to develop active listening skills, provide peer-feedback, and learn something new from their peers' work. However, this requires that non-presenting students pay attention and engage with the presentations, which can be challenging. Just as others have described [6], [7], we have observed non-presenting students in our classrooms who are distracted or disengaged, which can be demotivating for presenters and makes for poor post-presentation question and answer sessions. To combat this challenge, instructors may task their non-presenting students with providing feedback to the presenting students.

Not only can peer feedback reduce audience distractions, but peer feedback is essential for developing an overall oral presentation competence in higher education. In their framework for developing this competence, van Ginkel et al. [8] include "providing feedback to peers" and "dealing with receiving feedback" as parts of the learning process. The authors also outline a set of guiding principles for oral communication competence that include providing opportunities

for students to observe models of peers (principle 3) and encouraging the involvement of peers in formative assessment processes (principle 6).

Peer feedback is a process where peers give opinions, suggestions for improvements, and ideas to one another [9]. Peer feedback is distinguished from peer *assessment,* which focuses on students *grading* the work of their peers against relevant criteria. Feedback, on the other hand, refers to a communication process between learners that ideally includes rich detailed comments related to performance [10]. Peer feedback should also allow instructors to provide the presenting teams with a greater amount of feedback and in a timelier manner, especially in large class sizes [11]. However, another challenge when collecting peer feedback during oral presentations is that non-presenting students may provide a low quantity and quality of comments and/or superficial comments. As a result, presenters don't perceive their peers' feedback as useful and won't use it to improve their work or future performance [12]–[16].

Notably, most education research articles that describe engaging non-presenting students with a peer feedback task actually have the students *assess* their peers with a grading rubric rather than give free-form feedback [13]. Moreover, these studies primarily focus on testing the agreement, or lack thereof, between instructors' and peers' scores [17]–[19]. While peer grading can certainly be combined with peer feedback, our primary goal is to involve students in their peers' presentations in a collaborative way that can enhance critical thinking, maximize student learning, and improve the comments provided through a novel feedback collection tool.

The importance of tool design when collecting peer feedback

Previous studies have shown that the tool used to collect peer feedback is important to the focus (e.g., technical content, delivery, generic) and form (e.g., praise, suggestion, knowledge gained) of the comments students make [20]. And there are many design elements of a peer feedback collection tool (e.g., subject area, timing, peer matching, anonymity) that can impact the quantity and quality of the comments [21]–[23]. However, peer feedback specifically during oral presentations is not as well studied as other assessment types (e.g., writing samples) [24], has an emphasis on peer grading rather than qualitative comments, and an increasing focus on the incorporation of technology (e.g., clicker systems, exam software, mobile apps) [25]–[27].

PeerPresents is an example peer feedback collection tool developed by researchers at four U.S. universities [28]. This real-time response system, similar to an online discussion board, features pre-planned questions for student reviewers to respond to while watching peers' presentations. Reviewers can then up-vote or down-vote other reviewer comments. The research team collected feedback using the PeerPresents system and conducted a content analysis of the comments. ~90% of comments were considered "on topic" and >50% were related to presentation content rather than style. Similarly, our feedback collection tool aims to elicit comments that are both on topic and discuss primarily presentation content.

The creators of the PeerPresents platform described some drawbacks as well. The form contained 19 questions and required scrolling through multiple pages to access all of them. Thus, more than half of the comments made were in response to just the first two questions. The number of comments also varied drastically between reviewers from less than 5 comments for some

students to more than 60 for others. Finally, PeerPresents was only tested with 15 peer reviewers so it's unclear if the tool will scale well for larger class sizes where as the number of students increases, the number of comments will increase as well and students reading and voting on peers' comments may struggle to also listen to the presenter [28]. By creating a feedback form with only six (6) prompts and limited writing space, we aim to elicit diverse, relevant feedback from the non-presenting students that is communicated efficiently without overburdening them. We also aimed to design a feedback collection tool equally suitable for small and large class sizes that requires minimal preparation and management from instructors.

The design elements of our tool are also supported by the results of a recent meta-regression of online peer feedback collected from 13 natural science courses at 7 universities (n>2400 students) [29]. The authors found that fewer, more detailed comments, that are *provided* rather than received are the strongest predictors of task performance growth (defined as gains in assignment scores normalized to correct for differences in difficulty). The authors suggest that instructors limit the number of comments made by students with specific reviewing prompts and guidance on what to include in a detailed comment.

Our feedback collection tool, called KLIQED, was designed to foster non-presenting student engagement and peer-feedback. Although the feedback received by presenting students may facilitate the development of their presentation skills, this was not the initial emphasis of the tool. In this work-in-progress, we continue to describe the development of our tool, we discuss use of the tool in our classrooms during the 2022-2023 academic year, and we outline our plans for a full research study that answers the research question: How effective is the KLIQED tool in promoting high-quality peer feedback during oral presentations in economics and engineering design courses?

The KLIQED Tool

KLIQED is a mnemonic acronym offering a template for students to comment in the categories of:
- **K**nowledge (gained from the presentation)
- **L**ikes (What the audience likes about the presentation)
- **I**mprovements (Areas of improvement)
- **Q**uestions (about the presentation)
- **E**xploration and entrepreneurial mindset
- **D**elivery (of the presentation)

We used the tool on paper as illustrated in Appendix 1.

The tool evolved from KLIQ to KLIQED to include "Exploration" and "Delivery." The exploration category encourages students to think about areas and features of the presentation that they may want to explore further or emulate in their own presentation, allowing them to develop an entrepreneurial mindset through connection-making. The delivery category asks more specifically about feedback related to the way the presentation was delivered. The intuition behind the acronym is to help the presentations resonate or "click" with students in the audience.

KLIQED is modeled, in part, after the "feedback capture grid" in Stanford's Design Thinking Bootleg [30] and would be, to our knowledge, the first example of that design thinking tool being adapted for peer feedback during oral presentations.

We map our KLIQED categories to the comment coding schemes used in previous peer feedback content studies [12], [20], [32] to assess the scope of the feedback suggested by our tool. As summarized in **Table 1**, the KLIQED tool encourages students to offer feedback that is more comprehensive in scope than those previous studies.

Table 1: Scope of the KLIQED Tool compared to previous studies.

Our KLIQED Tool	Cho [32]	Elizondo-Garcia [20]	Colthorpe [12]
Knowledge	Summary	x	Content
Likes	Praise	Praise	x
Improvement areas	Directive/ Nondirective (suggestions)	Suggestion (specific and generic)	Advice
Questions	Criticism	Problem	x
Exploration/Emulation	x	x	x
Delivery	x	Personal aspects	Presentation Style

Note: An "X" indicates categories of comments not included in corresponding studies.

Implementation of the KLIQED tool

In the academic year 2022-2023, we implemented the KLIQED tool in our social science and engineering courses for STEM students. For the implementation, we made key choices on the context, timing, frequency, format, workload assignment, and grading for students.

Context: We implemented the tool in Introductory microeconomics, Introductory macroeconomics, Introductory engineering design (biotechnology and human values), and Biomedical engineering design (senior/capstone experience). The courses all include a project with oral presentations and other deliverables such as a written paper or an audio-video recording. Each economics class enrolled 60 undergraduate students and the engineering classes had 63 and 49 students, respectively. Students in these classes work on their projects in teams of 4-6 students each. The projects are scaffolded in ways that allow the students to present their work orally, receive feedback, and incorporate them into their final deliverables.

Frequency and timing: Students used the feedback tool once or twice during the course to make the feedback exercise more useful. The first use in the middle of the semester allows students to receive feedback from their peers both on the content and the delivery of the presentation. It also encourages all students to learn from each other by emulating the best practices they witness from their peers and avoiding the mistakes made by others. This mid-term presentation allows for a formative assessment and is important for the Exploration/Entrepreneurship category of the KLIQED feedback tool. The feedback exercise encourages critical reflection and thinking. Following the presentations, we immediately shared the comment sheets collected with the presenting students, encouraging them to address any recurrent comments or concerns from their peers in their final project deliverable due after the first presentation. When implemented, the second presentation offers students an opportunity to demonstrate progress both in their project work and their ability to provide feedback. The assessment of this second presentation is more summative in principle. Students are expected to have accounted for the feedback they received earlier in the semester both in the content of their final product and oral presentation. Although we could share the final KLIQED feedback with students, we used them more to gauge the effectiveness of the delivery and as input in the grading of the final deliverable of the project..

Format: For each student, we print as many paper copies as they were assigned presentations to review. The sample paper tool we used in Appendix 1. While using paper and pen potentially involves printing costs, we preferred this option to minimize students' tendency to be distracted when using their electronic devices.

Student incentives: To encourage students to complete the KLIQED sheet and engage with the activity, we provide students with two main incentives. The first one is in terms of grading the completion of the KLIQED sheet. We used the KLIQED sheets only for documenting attendance and participation. We preferred this approach to making it a low-stakes graded item to keep students' focus on the learning and the process rather than the outcome. The second incentive is the potential to increase their overall performance on the project by emulating best practices and avoiding common errors of their peers and by integrating the feedback they received into their work. Finally, students could also derive satisfaction from providing quality feedback to their peers who might be grateful to them.

Tips for Instructors Using the KLIQED Tool

To facilitate the adoption of this new tool by other instructors, we share some insights from our experiences using the tool in our classrooms. We focus on alternate use of, or alteration of the template along with some recommendations for successful adoption.

Alternate use

The tool was initially intended for use during oral presentations when attention and good listening skills are essential for students' peer feedback. However, the tool has been successfully used by colleagues for students' peer-feedback during poster presentations. The tool can also be used with asynchronous peer reviews of student-recorded presentations. Finally, it can be used as a feedback collection mechanism for writing samples.

Alterations to the KLIQED template

The six (6) KLIQED prompts are organized in a note-taking template in the form of a table that students use throughout the presentations (See example in Appendix 1). It would be possible, however, to organize the prompts in alternative ways, for example as a mindmap. The template can be printed as a paper sheet for students to use with pen or pencil like we did or as an online survey that students can complete for each presentation they attend. Using an online survey offers the benefit of facilitating the compilation and distribution of the comments but could increase the risk of students being pulled away by online distractions. In terms of the content, an instructor could choose, for brevity or other reasons, to ask reviewing students to focus their comments only on a subset of the six (6) categories presented in the original KLIQED template in Appendix 1.

Student workload

When using the KLIQED tool, we experimented with a few options. One of the instructors first had each student complete the KLIQED sheet for 6 teams while the other instructor had students complete 3 comment sheets. Based on the instructor's observations and survey comments from students, we understood that there was a tradeoff between student engagement and comment workload. We found it important to keep student workload reasonable for the engagement of the students and the quality of feedback they provide to their peers. In classes where there are more than three presentations, we determined that limiting to three (3) the number of presentation feedback that each student writes promotes helps avoid overload or boredom and is more likely to promote quality feedback and engagement.

Transition between presentations

During oral presentation sessions, it can be helpful to allow at least 2 minutes between successive presenters or teams of presenters for listening students to finish completing their KLIQED notes and for the instructors to collect those notes. It is important to immediately collect the KLIQED sheets after each presentation to encourage students to focus and give feedback on the next presentation. In general, those 2 minutes can also serve as preparation time for the next presenting group or speaker to set up and get ready.

Promoting post-presentation discussions

During questions-and-answers sessions following the presentations, instructors can encourage students to actively participate in the discussions by using their notes. In that case, the instructor can ask a few students to share with the presenters their comments from one of the six categories from their KLIQED notes. Doing so promotes richer discussions as the non-presenting students can rely on their notes to participate in the conversations. When allowing for questions-and-answers between presentations, it is best practice for the instructor to collect the completed KLIQED sheets only after the Q&A session for the last presentation has ended.

Preliminary Results and Discussion

We used the KLIQED tool during oral presentations of student projects in courses we recently taught at our institutions in the Fall of 2022. The courses were in economics and biomedical engineering with a total of 169 students enrolled. We collected the KLIQED sheets completed by students and shared the feedback comments with presenting students. At the end of the semester, we also surveyed students on their perceptions of the effectiveness of the tool. The surveys include questions about demographics and user perceptions on how and why the KLIQED tool was helpful or not (See Appendix 2 for a list of questions). To mitigate in-group bias, each instructor administered the surveys to the other's students. Overall, 61 students completed the perception survey, representing a response rate of 36%. Out of these 61 students, 39 students answered enough questions to be included in the sample for this analysis. Even though the survey includes more questions, we only discuss 4 questions in these preliminary findings (See **Figure 1**).
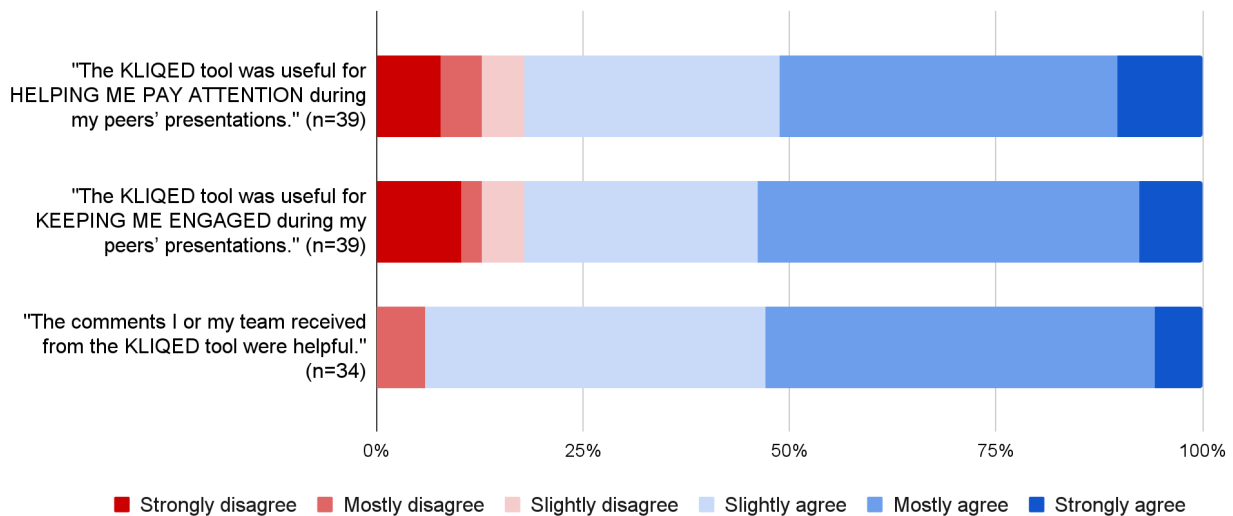
Figure 1. Preliminary student perceptions of the effectiveness of the KLIQED tool (n = 39 students).

Students self-report that the KLIQED tool was useful in helping them be more attentive, more engaged, and more confident in writing feedback. Based on the 39 students in the sample, 82% agree that the KLIQED tool was useful in keeping them more engaged during their peers' oral presentations, for example by asking questions or taking notes on relevant information. Similarly, 82% of the respondents also agree that the KLIQED tool was useful in helping them pay more attention to their peers' presentations, for example by avoiding distractions. About 95% of respondents also credited the KLIQED tool for making them feel more confident in the quality of the feedback they provided to their peers. Finally, 94% of the presenting students who received feedback comments from the KLIQED tool found them helpful. Overall, the KLIQED tool promotes active and significant learning [31] by providing an incentive for students to be more engaged listeners and better peer reviewers.

Conclusions and Future Directions

Our preliminary survey results suggest that both presenting and non-presenting students have positive perceptions of the KLIQED tool. We are continuing to collect KLIQED feedback forms and perception surveys in our Winter/Spring 2023 courses. In Summer 2023, we will begin a detailed analysis of this data.

We will conduct a content analysis of the peer feedback comments by identifying the focus (e.g., generic, technical content, delivery) and form (e.g., praise, suggestions, knowledge learned) of the feedback using the categories of the KLIQED tool. In **Table 1**, our KLIQED categories have been mapped to the comment coding schemes used in previous peer feedback content analyses [12], [20], [32]. These previous studies found statistically significantly higher praise and style comments (given by 50-100% of student reviewers) compared to comments containing problems, solutions, or advice (given by 0-60% of student reviewers). Moreover, the praise and presentation style comments given by peer reviewers tended to be longer and more detailed than comments in other categories.

Because the KLIQED tool guides peer feedback into specific categories rather than categorizing peer comments after the fact, we hypothesize that using the KLIQED tool can make (i) the percentage of comments that include suggestions for improvement higher than the percentage of comments that are only praises and (ii) the percentage of comments that are specific/technical higher than the percentage that are generic. We will analyze the relative frequency of each focus and each form of feedback in our sample and discuss how they compare to the previous literature. All of the previous studies also quantified comment length. We hope to find that the structure of the KLIQED tool encourages equal length/level of detail in comments across all categories.

To help compare our work to previous studies as indicated in **Table 1**, we will subcategorize students' suggestions for Improvements into "specific" and "generic" during our analysis. We believe that comments categorized as enhancing the non-presenting students' entrepreneurial mindset will be particularly novel.

Results of our full analysis will also include:

- Examples of peer comments that typify each KLIQED category
- The fraction of each category that was completed across all KLIQED sheets
- The average length of comments (word count) given in each category
- Confirmation that comments match/fit the intended category, i.e. a percentage of comments deemed "on-topic" (similar to the PeerPresents study)

While we currently plan to aggregate the data between our courses, comparisons between universities, between courses, and/or between upper and lower level students could be made given the data set.

Finally, a second content analysis of students' answers to the open-ended survey questions may be used to further make sense of our findings. Word clouds may be used to search for themes in the survey responses. We are particularly interested in a possible connection between the

perceived quality of feedback given and the development of listening skills as identified by the non-presenting students.

A paper presenting the success of this tool in our classrooms would be a significant addition to the literature on peer feedback specifically during oral presentations and an important example of how to put this type of engagement into real practice.

Conflict of Interest
There is no conflict of interest to the authors' knowledge.

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KLIQED – Student Note-Taking Tool During Oral Presentations

Instructions: During the oral presentations, please use this KLIQED note sheet to write down your notes and comments on any new **K**nowledge you gain from the presentation, what you **L**ike about it, what **I**mprovement you would suggest, what **Q**uestions you have, what you would like to **E**mulate or **E**xplore further, and your specific feedback on the **D**elivery of the presentation. Then, use your notes to participate actively in the Q&A/Discussion sessions after the presentations. At the end of the session, please *return your complete sheet to the instructor*. Thank you.

Presentation Title: _____

*Date:*_____   *Time:* _____   *Note Sheet Order # Today:* _____

*Please use the **back of this sheet** if you want more room to write*

K: What new <u>knowledge</u> have you learned from the presentation?	
L: What did you <u>like</u> about the presentation?	
I: What <u>improvements</u> would you suggest about the presentation?	
Q: What <u>questions</u> do you have for the presenters?	
E: What would you like to <u>emulate</u> in your own presentation or <u>explore</u> further?	

D: What specific feedback do you have on the <u>delivery</u> (voice/tone, body language, engagement, eye contact, etc.)?	

KLIQED Student Feedback

Q1 During oral presentations, your instructor provided you with a feedback template called KLIQED for you to comment on the categories of Knowledge (gained), Likes, Improvements, Questions, Explore/Entrepreneurship, and Delivery. To help us better understand your use of the tool, please read the following questions and respond honestly and thoughtfully. Your responses will have no effect on your grade and will not be shared with anyone other than us and colleagues who help analyze the data. The survey is anonymous and should take 5-7 minutes of your time.

Q2 Please select the course in which you used the KLIQED tool:

Biotechnology and Human Values   (1)

Biomedical Engineering Design (2)

Development Economics (3)

Introductory Macroeconomics (4)

Introductory Microeconomics (5)

Other (Please specify) (6) _____

Q3 Indicate your level of agreement with the following statement:
"The KLIQED tool was useful for HELPING ME PAY ATTENTION during my peers' presentations (e.g. avoid distractions)."

Strongly disagree (1) Mostly disagree (2) Slightly disagree (3) Slightly agree (4) Mostly agree (5) Strongly agree (6)

Q4 Describe up to three ways the KLIQED tool was **helpful** for paying attention during the presentations.

Q5 Describe up to three ways the KLIQED tool was **not helpful** for paying attention during the presentations.

Q6 Indicate your level of agreement with the following statement:
"The KLIQED tool was useful for KEEPING ME ENGAGED during my peers' presentations (e.g. asking questions, taking notes on relevant information)."

Strongly disagree (1) Mostly disagree (2) Slightly disagree (3) Slightly agree (4) Mostly agree (5) Strongly agree (6)

Q7 Describe up to three ways the KLIQED tool was **helpful** for keeping you ENGAGED during the presentations.

Q8 Describe up to three ways the KLIQED tool was **not helpful** for keeping you ENGAGED during the presentations.

Q9 How confident are you in the quality of the feedback that you wrote for your peers?

Not confident at all (1) Moderately confident (2) Very confident (3)

Q10 How likely are YOU to use the elements of the KLIQED tool to take notes and provide feedback during oral presentations in the future?

Very unlikely (1) Somewhat unlikely (2) Neither likely nor unlikely (3) Somewhat likely (4) Very likely (5)

Q11 **In general**, how would you describe your level of attention during previous typical course-end oral presentations?

Very distracted (1) Somewhat distracted (2) Neither distracted nor attentive (3) Somewhat attentive (4) Very attentive (5)

Q13 Have you ever been asked to provide peer feedback during an oral presentation before?

Yes (1)   No (2)   Unsure (3)

Skip To Q18 If Q13 != Yes

Q14 Please describe your experience with giving peer feedback during oral presentations in the past (what methods were used to collect the feedback, any instructions or policies surrounding their use, etc.)

Q15 As a result of using the KLIQED tool during oral presentations, how much GAIN DID YOU MAKE in IMPROVING YOUR LEVEL OF ATTENTION (compared to not using it and/or other peer feedback collection tools)?

No gain at all (1)   A little gain (2)   A moderate gain (3)   A great deal (4)

Q18 Did your instructor share with you or your team any KLIQED comments on the presentation you or your team delivered?

Yes (1)   No (2)   Unsure (3)

Skip To Q16 If Q18 != Yes

Q20 Indicate your level of agreement with the following statement:
"The comments I or my team received from the KLIQED tool were helpful"

Strongly disagree (1) Mostly disagree (2) Slightly disagree (3) Slightly agree (4) Mostly agree (5) Strongly agree (6)

Q21 Describe up to three ways in which the KLIQED **comments you received** were **helpful**

Q22 Describe up to three ways in which the KLIQED **comments you received** were **NOT helpful**

Q16 How do you self-identify in terms of gender?

A man (1) A woman (2)   Non-binary / gender fluid (3) Gender not listed here (4) Prefer not to say (5)

Q17 If you self-identify as a gender not listed, please add to our knowledge and tell us how you self-identify:

Q23 Is there something else that you would like to share that was not included on the survey?