

The Elevator Talk: Communicating Technical Material to Non-Technical Listeners

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Abstract - We first describe why the ability to communicate technical material to non-technical listeners is an increasingly critical skill for engineers. We then present the 'Elevator Talk,' an exercise geared towards cultivating this ability in engineering students. The 'Elevator Talk' is essentially communicating 'what you do as an engineer' to a listener not in your field, in approximately the time after meeting in an elevator and before either party disembarks. The exercise is video taped. The exercise presents students with a sometimes stressful challenge, and requires self-assessment of performance and self-generation of improvement strategies. Students are then given a second opportunity to meet the challenge by implementing their improvement strategies. Utilization of the Elevator Talk exercise provides students with an opportunity to build skill and confidence in their ability to communicate verbally, while also providing opportunity to develop life-long learning skills through practicing self analysis of performance and the generation and execution of improvement strategies. These skills serve the students well in preparing a final course presentation as well as in their post-graduation professional pursuits.

Index Terms – Communication, Elevator talk, Interdisciplinary communication, Life-long learning, Professional development, Self-assessment, Verbal communication.

INTRODUCTION

Some of the best advice I ever heard regarding preparation for a professional career was to practice and perfect 'The Elevator Talk.' Over the course of many years of instruction, I have evolved this advice into a successful teaching practice.

ABET requires engineering programs to produce graduates with non technical skills including communication skills and the ability to work in interdisciplinary teams [1].

In a recent report, engineering managers identified 'ability to communicate technical material to a non technical audience,' as one of the most important skills that engineers need in order to work effectively in interdisciplinary teams [2].

The ability to work in interdisciplinary teams means that engineers are increasingly called upon to work closely and communicate with professionals from other disciplines including managers, accountants, designers, human resource specialists and the like, many with other-than-technical backgrounds.

The Elevator Talk is essentially communicating 'what you do' to an audience that is not in your field. However, the task must be accomplished in the time after meeting someone in an elevator and before either of you can disembark (approximately 3-4 minutes). The speaker needs to grab the attention and make a connection with the listener. To be successful, the speaker needs to relate what s/he does to the experience and interest of the listener. Too much technical detail will kill the conversation, eliciting a polite, "That's nice," rather than genuine interest.

A successful Elevator Talk

- Relates to interests that the listener has
- Does not rely on knowledge that the listener does not possess
- Adds to knowledge and experience of the listener by introducing a new perspective, detail, insight or opportunity

Ability to execute a successful Elevator Talk can be an important asset in many professional situations, and is especially valuable for new engineers entering the profession. New engineering graduates will be likely to encounter frequent situations when they are meeting coworkers or clients from other fields for the first time, and would benefit greatly from making a good first impression.

METHOD

12 Senior engineering students, all members of a capstone project course, were given an assignment to individually prepare and deliver an 'Elevator Talk'. They were required to incorporate the topics from a senior level engineering course of their choice, as well as from a non-senior level engineering course that was randomly assigned (students selected course descriptions from a hat). These non-senior level courses are prerequisites for the capstone course, and therefore were familiar to the students.

For each student, the simulation began with the instructor introducing himself as the person in charge of an

organizational unit selected from the manufacturing or service sector, then asking the leading question, “What’s your name and what do you do?” Students were told that they had exactly 3 ½ minutes to convey their message.

Each talk was video taped, and the students used the video to perform a self-assessment outside of class as a homework assignment.

Students were provided with a form including 22 statements and asked to indicate how much they agreed or disagreed with each statement on a Likert-scale. The statements were formed in large part based on the Northwest Regional Educational Laboratory rubrics for Verbal Effectiveness, Nonverbal Effectiveness, and Appropriateness [3], as modified by the author for use in the Elevator Talk exercise, and with some original Industrial Engineering specific questions composed by the author.

After the numeric assessments, students were asked to, “List three aspects of your Elevator Talk that you did well,” then, “List three aspects of your talk that most need improvement.” Finally, students were instructed as follows: “For each area needing improvement above, list two actions you can take that will help you to improve.”

In a later class session, students were given a second opportunity (requirement actually) to perform the Elevator Talk. Prior to starting this 2nd Elevator Talk, they were asked to verbally state the aspect that was their main focus, and to describe what actions they took in order to foster improvement of that aspect. Then they performed the 2nd Elevator Talk, which was again video taped. As a last exercise, students were provided with their original score sheet, and asked to fill out the Likert-scale items again (this second time using a red pen).

RESULTS

I. Aspect Needing Improvement

Each student identified multiple aspects of their initial Elevator Talk needing improvement. The most frequently identified aspects were ‘Organization/transitions,’ and ‘Posture/hand position,’ each mentioned by half the students. All aspects identified by students as needing improvement are shown in Figure 1, with the ‘Other’ category comprised of, ‘Level of detail,’ ‘Repetition,’ and ‘Timing.’

The students identified a large number of actions that they could take to help them improve on the aspects shown in Figure 1. Students listed more than 40 actions that they could take, with each one specific to fostering improvement of a self-identified aspect of their oral presentation.

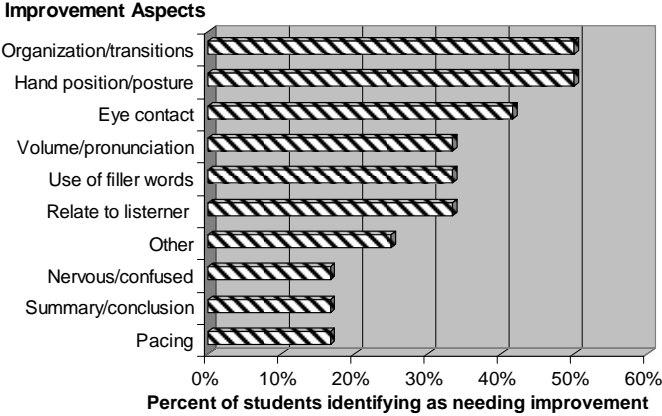


FIGURE 1
1ST ELEVATOR TALK ASPECTS MOST NEEDING IMPROVEMENT

II. Actions Fostering Improvement

The overwhelming action was ‘practice,’ mentioned by over 80% of the students, including practicing in front of friends, practicing in front of a mirror and so forth. The next most popular action was to better prepare information, with 25% of students including that action as an improvement strategy.

III. Perceived Improvement

A paired sample t-test comparing the mean self-assessment scores of the first talk to the mean self-assessment scores of the second talk for each student, generates a highly significant result as shown in Table 1. This indicates that students overwhelmingly believe they have improved in performing their 2nd Elevator Talk.

TABLE 1
t-TEST OF MEAN SELF ASSESSMENT SCORES

t-Test: Paired Two Sample for Means		
	1st Talk Mean SA Score	2nd Talk Mean SA Score
Mean	3.99	4.59
Variance	0.19	0.28
Observations	12	12
Pearson Correlation	-0.024	
Hypothesized Mean Difference	0	
df	11	
t Stat	-2.98	
P(T<=t) one-tail	0.0063	
t Critical one-tail	1.80	
P(T<=t) two-tail	0.013	
t Critical two-tail	2.20	

Students assessed the greatest improvement in level of agreement (disagreement) with the following statement:
 'I was enthusiastic enough to keep the listener engaged.'
 The second greatest improvement in level of agreement (disagreement) was with the following statement:
 ('There were uncomfortably long silences.')

There was a three-way tie for the third most improved area as self-assessed by the students. They were:
 'I had a strong conclusion summarizing or lending perspective to my talk.'
 'I gave examples relevant to the listener.'
 'I used 'filler' words or expressions like um, er, you know,...')

This means that the difference between the average agreement levels of the 1st and 2nd Elevator Talks (i.e., perceived improvement) was greatest for 'I was enthusiastic enough to keep the listener engaged.'

The first page of the Elevator Talk Student Self Assessment form is shown below as Figure 2. A soft copy of the entire self assessment document can be obtained by emailing a request for the 'Elevator Talk Student Self-Assessment Instrument' to the author of this article at david.bowen@csueastbay.edu

Elevator Talk Self Assessment

Circle the number describing how much you agree or disagree with each statement.

My ideas were clearly organized.	Disagree	1	2	3	4	5	6	7	Agree
My introduction grabbed the attention of the listener.	Disagree	1	2	3	4	5	6	7	Agree
My main points were clear and organized.	Disagree	1	2	3	4	5	6	7	Agree
I transitioned smoothly from one idea to another.	Disagree	1	2	3	4	5	6	7	Agree
I had a strong conclusion summarizing or lending perspective to my talk.	Disagree	1	2	3	4	5	6	7	Agree
I appeared confident.	Disagree	1	2	3	4	5	6	7	Agree
I had good posture.	Disagree	1	2	3	4	5	6	7	Agree
I made eye contact.	Disagree	1	2	3	4	5	6	7	Agree
I used appropriate voice inflections.	Disagree	1	2	3	4	5	6	7	Agree
I used 'filler' words or expressions like um, er, you know,.....	Disagree	1	2	3	4	5	6	7	Agree
I clearly articulated and pronounced the words I used.	Disagree	1	2	3	4	5	6	7	Agree
I used jargon without further explanation (e.g., JIT, MRP, FIFO, LIFO, CPM, PERT, work sampling, time study, etc.).	Disagree	1	2	3	4	5	6	7	Agree
I spoke as if my listener knew something that they did not (e.g., course #, acronyms, etc.)	Disagree	1	2	3	4	5	6	7	Agree
There were uncomfortably long silences.	Disagree	1	2	3	4	5	6	7	Agree
I stumbled over words.	Disagree	1	2	3	4	5	6	7	Agree
I repeated myself.	Disagree	1	2	3	4	5	6	7	Agree
I smiled, joked or otherwise put the listener at ease.	Disagree	1	2	3	4	5	6	7	Agree
At times, I spoke too fast.	Disagree	1	2	3	4	5	6	7	Agree
At times, I spoke too slowly.	Disagree	1	2	3	4	5	6	7	Agree
I gave examples relevant to the listener.	Disagree	1	2	3	4	5	6	7	Agree
I was enthusiastic enough to keep the listener engaged.	Disagree	1	2	3	4	5	6	7	Agree
By the end of my talk, the listener had a good idea of what an industrial engineer does and how industrial engineering methods could improve performance in the listener's specific context.	Disagree	1	2	3	4	5	6	7	Agree

FIGURE 2
ELEVATOR TALK SELF ASSESSMENT FORM

DISCUSSION

Especially for students unaccustomed to doing so, giving an oral presentation can be a high anxiety activity. Not knowing in advance the specific context and background of the audience (e.g., will the elevator mate run a call center, a car factory, or a food processing plant?) and being given only minimal notice of class topics to include in the talk serve to heighten the anxiety level of most students. Similarly, the lack of team members to rely on when tongue tied or forgetful, and the inability to rely on charts, figures, tables, etc., common in many undergraduate oral presentations, add to the challenge.

The result is that most students are somewhat dissatisfied with their performance, and students seem to have no difficulty identifying three aspects of their Elevator Talk that need improvement. Based on number and specificity of improvement actions generated, most appear successful in creating a viable strategy for improvement.

In addition to devising personal improvement strategies, students discussed their strategies in small groups, thereby publicly committing to the strategy, and also benefiting from exposure to the strategies of others. Just prior to their 2nd Elevator Talk, students publicly stated the aspect of their 1st talk that most needed improvement and described their improvement strategy to the class.

Viewing their video for self assessment also proved to be a valuable tool. For many students, it was the first time that they formally analyzed a video tape of one of their presentations. Many stated that they identified some aspect of their talk that they did not realize was occurring, for example extensive use of 'um' or 'you know,' poor posture, hands in pockets, speaking too fast and so forth.

The students identified over 40 specific actions that they could take to help them improve in the areas that they identified as problematic. Because these were specific and self generated, they appear to carry more weight than if the instructor were to provide a list of common mistakes and appropriate actions. Many were simple but likely to be effective, such as the action of 'not wearing a jacket with pockets' from a student that identified, 'keeping hands in pockets' as an aspect that needed improvement.

The single most identified action was to 'practice' in some form or another, whether it was practicing in front of the mirror, practicing with friends, or just practicing in an empty room. In my experience, both as a speaker and as an educator, this is the single most productive improvement strategy. I was heartened by the fact that so many students identified this action in their improvement strategies. Again, the fact that the idea for the action was self-generated makes it more likely that the students will follow through and actually make the time and effort to practice.

At the end of the course, students again use video feedback and self assessment for analyzing the dress rehearsal of their final presentation to clients and the university community. Having been exposed to the process previously, the students tend to embrace this activity, expecting that it will greatly improve their presentation.

CONCLUSION

The elevator talk is an effective exercise for focusing student attention and energy on developing verbal communication skills. Students reported significant improvement through their self assessment. Students were able to identify improvement strategies and specific actions toward self improvement.

The Elevator Talk exercise is done early on in a senior project capstone course, a course where students work with industry partners on applying engineering tools and methods to solve client defined problems. Students initially do not like the exercise. It is viewed as a somewhat high pressure situation, and not directly related to the completion of 'their' project. For these reasons, the exercise serves to develop camaraderie in a way similar to a shared 'boot camp' experience. This is to be expected.

In previous offerings of the course, students have reported in course assessments and focus groups that they 'hated' the exercise as it occurred, but shortly thereafter, realized that it was 'extremely valuable', and was a great help in preparing them to initiate discussions with their industry clients, explain what they were doing (and why they were doing it) to operators, line workers and so forth.

The Elevator Talk is a challenge for students. It requires reflective assessment of performance and development of improvement strategies. It shifts responsibility for devising improvement strategies and exercises from the instructor to the student. In doing so, the Elevator Talk exercise fosters self-assessment and life-long learning capabilities. Meeting the challenges presented by the exercise helps to build confidence.

I. Further research

In addition to self-assessment, a 'blind assessment' conducted by a knowledgeable assessor unaware of whether the attempt is the first or second attempt could be informative. Are students really making such dramatic and consistent improvement in their verbal communication? Or rather, do they simply believe that performance has improved because they were more comfortable during the second pass? Though both outcomes are valuable, evidence of improvement in verbal communication skills rather than self perception of performance would strengthen the case for use of the Elevator Talk exercise.

REFERENCES

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