

Remote Presentations for Unit Operations Laboratory

Written reports have been a mainstay of laboratory-based courses throughout the STEM curriculum. Indeed, these writing skills are often translated across a variety of courses and afford students and instructors alike with familiar and formulaic modalities by which to communicate. Despite their pedagogical intuitiveness, the limitations of these written reports present significant shortcomings to instructors, engineering students, and alumni. Instructors observe that students are less engaged and that students' technical writing skills stagnate. Additionally, many alumni relay a lack in preparation for other communication styles used in the workplace – from poster sessions to office-wide e-mails. There has been a push to include nontraditional reports into the curriculum, and other instructors attested to these modalities elsewhere.^[1] Common alternatives include writing letters to consumers,^[2] presenting seminars to the larger student body,^[3] constructing typical conference posters,^[4] and crafting Vee maps to summarize results.^[5] In the wake of COVID-19 and given the ever growing use of online communication, this paper presents yet another alternative method for reporting laboratory results.

In the spring of 2020, after the sudden cessation of traditional in-class instruction, four-person groups in the Unit Operations laboratory course at NYU were asked to present their findings in a video format. This was devised as an alternative to an in-class PowerPoint-style oral presentation. While the students had acquired all the data from the laboratory prior to the school shutdown, they still needed to analyze and interpret their data and compile their final report remotely from the school, the instructor, and one another. The video report was constructed so as to increase cooperation among the group members. As such, each group was tasked with determining the relevant sections in their own report, dividing report compilation in four parts, and distributing these parts among four members: A, B, C, and D. Each group member was to record herself/himself presenting their tasked division and then e-mail this recording to the rest of the group and to the instructor. To facilitate cooperation, member B was then asked to record her/his version of member A's section, member C was asked to record member B's section, and so on. This second pass of recordings was also shared with the instructor. Lastly, the two members of the group who did not record a particular section were asked to evaluate the two videos and make constructive comments as to how best to present, optimize, and hybridize the two recordings (i.e. part A was recorded by both member A and member B, so members C and D were tasked with final evaluation). A third, and final, recording was made that incorporated comments from all group members. While all videos were shared with the instructor so as to ensure their completion, only the final recording was graded.

This alternative method to present results may actually work to the benefit of students and graduates as this hones interpersonal communication *in absentia*. This may, for example, simulate a “real-life” work environment wherein group members are located across the globe or simulate a remote presentation from one office to another. Additionally, this method ensures that students are familiar with others' sections as well as their own. Thus, what was devised to address an emergency case in the spring of 2020 could prove useful to instructors and students alike when traditional classes resume.

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