A Pedagogical Model for Soft-Skill Education in Computer Science: Pass/Fail Grading with Public In-Class Feedback

Nandi Zhang
University of Calgary
Calgary, Canada
nandi.zhang@ucalgary.ca

Nelson Wong
University of Calgary
Calgary, Canada
nelsonwong@ucalgary.ca

ABSTRACT

This paper presents a pedagogical model for soft-skill education in computer science, integrating Pass/Fail grading with public in-class feedback. We illustrate this approach through *SCIE 398.2: Communication in Computer Science*, a new undergraduate course at our institution. By replacing letter grades with Pass/Fail grading and public real-time feedback, this model fosters a low-stakes learning environment where students can experiment, refine their communication skills, and improve iteratively.

KEYWORDS

Computer science education, Pass/Fail Grading; Computing education

ACM Reference Format:
Nandi Zhang and Nelson Wong. 2025. A Pedagogical Model for Soft-Skill Education in Computer Science: Pass/Fail Grading with Public In-Class Feedback.. In *The 27th Western Canadian Conference on Computing Education (WCCCE '25), April 28–29, 2025, Calgary, AB, Canada*. 2 pages. https://doi.org/v10.60770/hjpf-2k34

1 INTRODUCTION

Technical expertise alone is not enough for success in the computer science industry. Graduates must effectively communicate in job interviews, technical presentations, and team collaborations [1, 6]. Unlike technical skills, soft skills do not have a single "correct" approach. Applying traditional letter grading to soft skill development such as communication can be unnecessarily rigid and labor-intensive, potentially discouraging individual style.

To address these challenges, we developed *SCIE 398.2: Communication in Computer Science* where we explore a new pedagogical model for soft skill education. Instead of letter grading, the course adopts Pass/Fail grading and utilizes public in-class feedback from peers and the instructor as the primary driver for improvement. This paper discusses the rationale, implementation, and scalability of this model through the design and introduction of the course.

WCCCE '25, April 28-29, Calgary, AB, Canada

https://doi.org/10.60770/hjpf-2k34

2 COURSE STRUCTURE

The primary goal of *SCIE 398.2: Communication in Computer Science* is to equip students with essential oral communication skills. The course aims to boost students' public speaking confidence and provide opportunities to explore their individual presentation styles. By the end of the course, students should be able to deliver presentations persuasively, engagingly, effectively, with audience awareness, and collaboratively in teams.

The course consists of four presentation activities: elevator pitch (1–2 min), individual presentation (8 min), group presentation (10–12 min), and portfolio presentation (8 min).

Each student participates in all four activities during the course. Before each presentation, the instructor gives a brief lecture on communication strategies tailored to the specific presentation type. These instructional sessions cover topics such as effective slide design, adapting messages for different audiences, and using body language to enhance engagement. Students present within self-selected computer science-related scenarios, such as pitching to investors or networking.

After each presentation, students receive public feedback from their peers and the instructor, a process detailed in Section 4. Within three days of presenting, students submit a reflection report including an analysis of their performance, feedback they received, and goals for future presentations.

3 PASS/FAIL GRADING

3.1 Design Rationales

Summative evaluations, such as post-hoc grading, often prioritize assessment over improvement [8]. In soft-skill education, this can create unnecessary pressure and restrict creative freedom, as there is no single "correct" approach to communication. Moreover, rigid rubrics may stifle creativity, discourage risk-taking, and limit students' ability to develop their unique presentation styles.

Inspired by the concept of *ungrading* [5], this course adopts a Pass/Fail system to reduce stress on students and grading effort for instructors and TAs. This approach fosters a supportive environment for experimentation and iterative improvement, shifting students' focus from achieving a specific letter grade to the learning process itself.

3.2 Implementation and Course Assessment

To pass the course, students must: (1) Deliver all four presentations. (2) Provide constructive feedback to assigned peers. (3) Submit self-reflection reports for each presentation.

Students are allowed to redo a presentation if their first attempt does not demonstrate sufficient effort. This course follows a

completion-based approach, emphasizing whether students understand how to improve rather than achieving a specific standard in one single performance.

4 PUBLIC IN-CLASS FEEDBACK

4.1 Design Rationales

In a Pass/Fail grading system, the absence of letter grades can potentially reduce academic motivation [3]. However, for soft skill education, public in-class feedback serves as a powerful alternative incentive for learning and improvement [2]. The desire to impress peers and instructors, coupled with the aversion to public embarrassment, motivates students to actively engage and refine their skills and ensures a baseline level of performance [7, 11].

Timeliness is critical for effective feedback. Delayed feedback can result in missed learning opportunities, as students may no longer recall their reasoning behind specific decisions or actions. Research in instructional practice underscores the value of real-time feedback [4, 8]. A systematic review by Sinclair et al. [9], which analyzed 32 studies, found that immediate feedback significantly enhances instructional effectiveness by enabling prompt adjustments and reinforcing positive behaviors.

Additionally, studies on peer assessment [10] suggest that students engage more deeply with feedback from peers than with instructor evaluations. Peer feedback fosters a sense of shared responsibility for learning and encourages active reflection. To support this, we designed the public in-class feedback system that facilitates instantaneous, transparent, and collaborative feedback, allowing presenters to receive diverse feedback and reflect on their performance in real time.

4.2 Implementation

Building on the rationales, we implemented a system that enables students to both provide and receive immediate feedback for each presentation during class.

The system employs a *shared spreadsheet* to record feedback in real time, allowing students to view and contribute simultaneously. Each student is randomly assigned to provide feedback for three peers, ensuring every presentation receives at least three mandatory feedback. Additionally, students can voluntarily leave feedback on any presentation and choose to include their names. As feedback is visible as it is written, audience members gain instant insights into effective techniques, find inspiration, and reflect on their own presentation skills. This process resembles a "real-time sports commentary platform," where feedback dynamically unfolds throughout the presentations.

When providing feedback, students adopt dual perspectives: that of the audience and of fellow computer science professionals who may deliver similar presentations in their careers. For instance, during elevator pitch presentations, each student selects a peer as their mock target audience and delivers their pitch directly to that individual in front of the class. The designated peer then provides verbal feedback immediately after the pitch, focusing on their experience as the direct audience.

Following each presentation, the instructor guides students to review the feedback displayed on the screen and offers structured verbal feedback. This instructor feedback addresses key aspects such as delivery, slide design, and audience engagement, complementing the written peer feedback to provide a balanced and comprehensive perspective. Unlike letter grading, which primarily focuses on evaluation and assessment, this combined feedback highlights both areas for improvement and the unique strengths of each presentation.

5 SCALABILITY AND FUTURE IMPLEMENTATION

Currently, presentations and feedback activities occur during lectures, with a class size of 43 students and two 1.25-hour sessions per week. To scale for larger cohorts, this model can adapt by shifting presentations to tutorials, where teaching assistants (TAs) facilitate feedback. Shared digital tools preserve the transparency and effectiveness of the peer feedback system, ensuring timely feedback while maintaining interactivity and collaboration. This approach minimizes grading effort for TAs, reduces the burden on instructors, and allows the course to scale without compromising its core principles.

Future implementations could explore iterative in-class practice, allowing students multiple attempts at activities to refine their skills. Additionally, incorporating a wider variety of learning activities—such as mock interviews, team debates, or storytelling exercises—could address diverse learning objectives and further enhance the course's impact.

6 CONCLUSION

Pass/Fail grading combined with public feedback effectively supports soft-skill development by encouraging experimentation and continuous improvement, providing a scalable alternative to traditional letter grading.

REFERENCES

[1] Khaled Alshare and Nitham M Hindi. 2004. The importance of presentation skills in the classroom: students and instructors perspectives. *Journal of Computing Sciences in Colleges*, 19, 4, 6–15.

[2] Zhengdong Gan, Jinbo He, Lawrence Jun Zhang, and Randall Schumacker. 2023. Examining the relationships between feedback practices and learning motivation. *Measurement: Interdisciplinary Research and Perspectives*, 21, 1, 38–50.

[3] Richard M Gold, Anne Reilly, Robert Silberman, and Robert Lehr. 1971. Academic achievement declines under pass-fail grading. *The Journal of Experimental Education*, 39, 3, 17–21.

[4] John Hattie and Helen Timperley. 2007. The power of feedback. *Review of educational research*, 77, 1, 81–112.

[5] Alfie Kohn and Susan D Blum. 2020. *Ungrading: Why rating students undermines learning (and what to do instead)*. West Virginia University Press.

[6] Jennifer A Polack-Wahl. 2000. It is time to stand up and communicate [computer science courses]. In *30th Annual Frontiers in Education Conference. Building on A Century of Progress in Engineering Education. Conference Proceedings (IEEE Cat. No. 00CH37135)*. Vol. 1. IEEE, F1G–16.

[7] Richard M Ryan and Edward L Deci. 2000. Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American psychologist*, 55, 1, 68.

[8] Valerie J Shute. 2008. Focus on formative feedback. *Review of educational research*, 78, 1, 153–189.

[9] Anne C Sinclair, Samantha A Gesel, Lauren M LeJeune, and Christopher J Lemons. 2020. A review of the evidence for real-time performance feedback to improve instructional practice. *The Journal of Special Education*, 54, 2, 90–100.

[10] Keith J Topping. 2009. Peer assessment. *Theory into practice*, 48, 1, 20–27.

[11] Kathryn R Wentzel and Allan Wigfield. 1998. Academic and social motivational influences on students' academic performance. *Educational psychology review*, 10, 155–175.