

Promoting Fairness and Critical Thinking in Group Work

Designing a Peer Review Website for Students and Teachers

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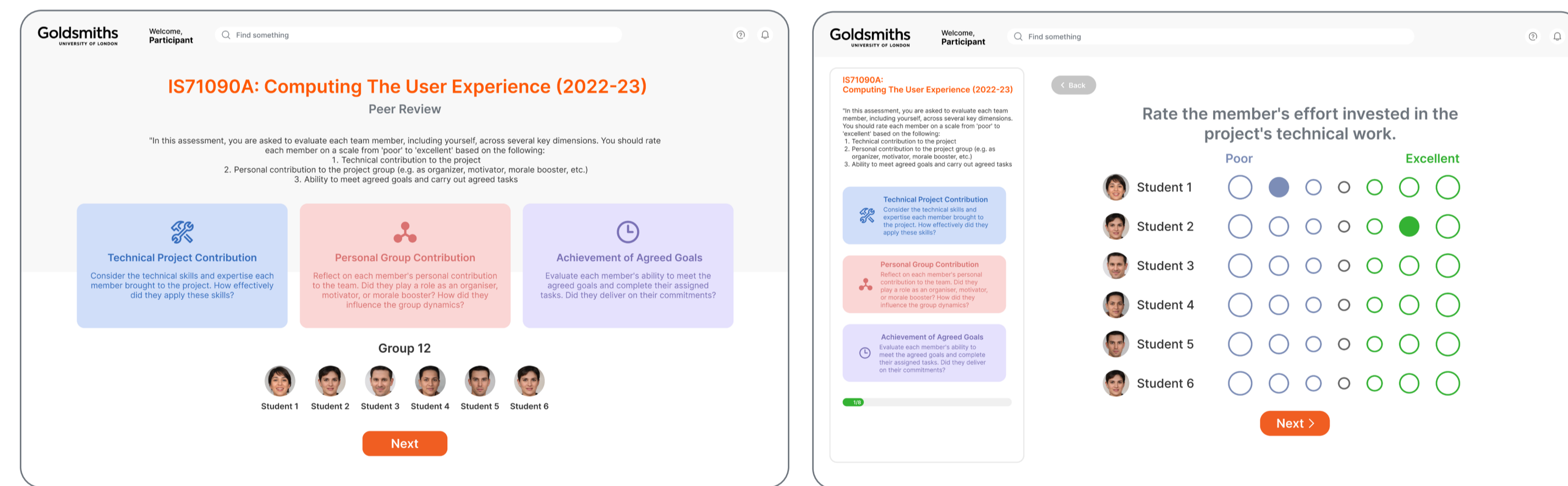
Abstract

To address the challenges of perceived inequity in student group work and enhance the effectiveness of peer reviews, this project conducted research with students experienced in group collaborations and educators. Based on the insights gathered, a peer review website was proposed. The usability of this solution was rigorously tested, leading to iterative improvements. Recommendations for future research and enhancements were also outlined.

Introduction & Background

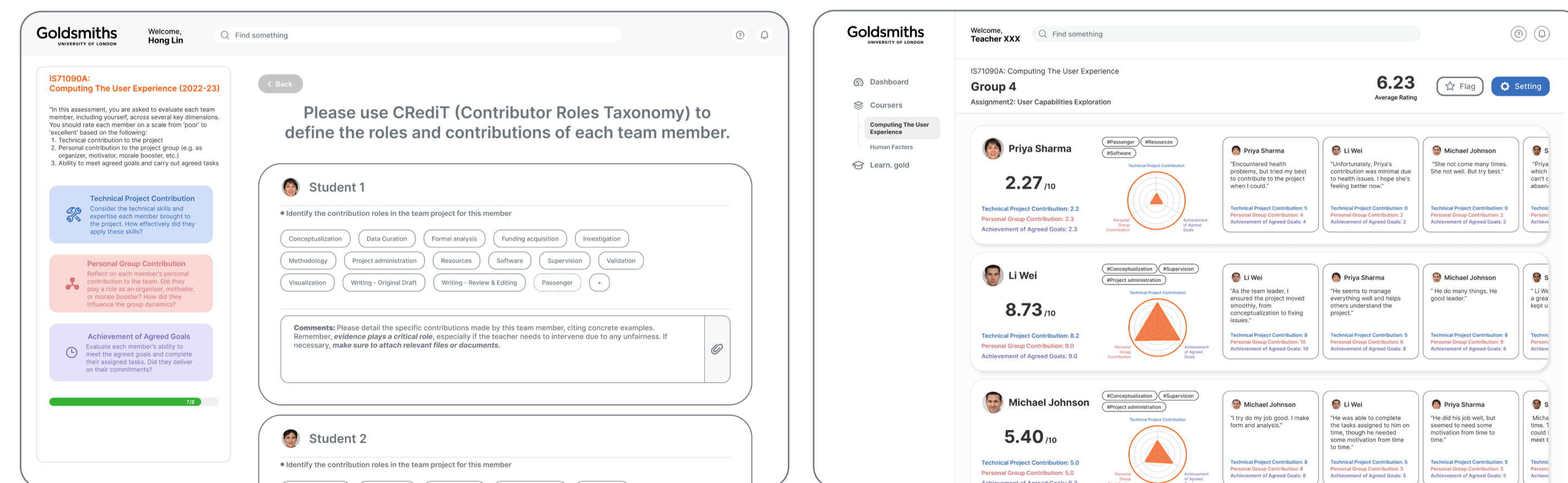
Collaborative group work is a cornerstone of modern academic environments, fostering essential skills such as teamwork and problem-solving. However, ensuring equitable contribution and recognition among group members remains a significant challenge. Traditional peer review methods, intended to assess individual contributions, frequently suffer from biases, lack of transparency, and a general low quality of student feedback. Moreover, the delayed intervention of peer reviews, combined with the time-consuming nature of traditional methods, often causes educators to miss crucial opportunities to address and resolve group conflicts. This delay not only exacerbates group tensions but also leads to growing student disillusionment with educators and a pervasive mistrust of the peer review process itself. Recognizing these pressing issues, this project delves into the intricacies of group dynamics, critiques the inefficiencies of existing peer review practices, and proposes a digital solution aimed at enhancing fairness, timeliness, and clarity in evaluations.

Diagram / Design



Introduciton Page

Scoring Page



Description Page

Reviewing Page

Study Methodology

Second research

Conducted an online survey targeting students in the London area. Collected **52 responses**, obtaining quantitative data on the challenges and perceptions students face during group work and peer reviews.

Stakeholder Interviews

Engaged in one-on-one interviews with **5 students** and **2 educators**. This approach provided qualitative insights into the diverse perspectives on peer review, helping to identify pain points and expectations.

Case Study

Analyzed **3 existing methods** of peer review to understand their strengths and weaknesses. This analysis helped in clarifying the direction for optimization.

Usability Testing

Invited **5 participants** for usability testing sessions using the developed prototype. Feedback from these sessions informed iterative design improvements.

Testing & Evaluation

The primary goal of this usability test was to assess the website's user-friendliness and understand the impact of its interactive design on peer reviews. A total of **5 participants** were invited, each of whom underwent a feedback interview after the testing session.

Test Purpose

The usability test aimed to ensure the **interface's functionality was user-friendly, gauge the influence of the website's interactive design on peer reviews, assess the effectiveness of the multi-dimensional evaluations, and evaluate the utility of the 14CRediT system.**

Test Results

All participants successfully completed their assigned tasks. The general consensus highlighted the user-friendliness of the redesigned peer review website. **Four out of the five** testers felt that the design **effectively guided** them to provide richer, **more objective** feedback, while one tester had a neutral perspective on the design.

Research Results

Students can be guided to provide more accurate feedback through multidimensional Likert-type questions.

Using page design can lead students to provide more differentiated feedback.

The 14 CRediT Contributor Roles can lead students to provide constructive descriptions beyond complaints.

Conclusions

The research indicate that the redesigned peer review website offers a more user-friendly interface, with the majority of participants acknowledging its ability to guide richer and more rational feedback. The incorporation of multi-dimensional evaluations and the 14CRediT system appears to be a promising approach to enhance the quality of feedback and address the challenges previously associated with traditional peer review methods.

Future Work

This study primarily centered on students, validating the redesigned peer review's efficacy. However, it lacks data from the educator's perspective. Future research should prioritize testing with educators to further refine and optimize the peer review website, ensuring it caters to all users effectively.

