Synergy: A Web-Based Tool to Facilitate Dialogic Peer Feedback

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Abstract. The goal of this demonstration session is to introduce Synergy, a platform to help design and implement dialogic feedback practices. Synergy is grounded in a theoretical framework of dialogic feedback, which suggests an ongoing dialogue among the peers (providing feedback) and the target student (receiving feedback). Synergy allows instructors to create multiple review sessions with specific tasks depending on the role as feedback receiver or provider. Peer review activities are organized around three phases, in accordance with theoretical framework. Using Synergy, peers in the first phase assess student work, discuss together to align their perspectives toward the quality of the work. Then, the peers create feedback tasks (to identify who gives which feedback). In the second phase, Synergy enables peers to provide the intended feedback (based on the feedback tasks) and to build dialogue with the target student. During dialogue, in collaboration with peers, Synergy allows students to identify learning actions to translate the feedback received into concrete progress. In the last phase, when students perform the planned actions, Synergy tracks student engagement and progress per each action and also allows the students to set their progress manually. Synergy is enhanced with Learning Analytics tools to support the feedback processes During the demo, we will show interactively the use case of how Synergy can help design and facilitate dialogic peer feedback.

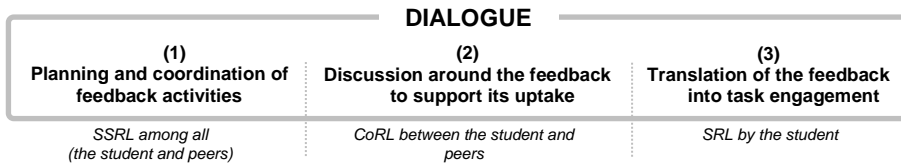**Keywords:** dialogic feedback, peer feedback, peer learning, learning analytics

1 Pedagogical Background

In early 2000, Askew and Lodge (2000), criticizing the dominant stance in the literature that feedback is a gift given to students, proposed that feedback is a process in which students as active learners co-construct knowledge through dialogue (i.e., two-way 'ping-pong' interaction). This re-conceptualization of feedback within the socio-constructivist theory of learning has guided the research in the last years [2], [3]. Accordingly, the recent literature views feedback as a dialogic process that aims to develop students' capacity to monitor, evaluate, and regulate their learning through continuous and refined interactions with others [2], [4]. In dialogic feedback, students are

considered active learners who construct meaning and regulate their learning by engaging in fruitful social interactions with others [5].

Adhering to this change in the paradigm of feedback, the most recent theoretical models and frameworks have investigated dialogue as part of the feedback practice [5], [6]. The fast advancing knowledge on enhancing and sustaining feedback dialogue is fairly promising. However, so far, the literature focuses on scenarios where the instructors are assumed to actively engage in dialogue with student. The practice of dialogic feedback that increases the workload for instructors needs to be reconsidered in large-scale learning contexts. Initiating and continuing dialogue with every student and addressing their distinct learning needs is infeasible for instructors who teach large enrolment classes. There is a need for new theoretical models of dialogic feedback that can scale to large learning populations in today's digitalized higher education context.

We present a theoretical framework of dialogic peer feedback in Fig. 1, targeting large scale online or blended learning environments. This model conceptualizes three interconnected phases. First phase involves planning and coordination of feedback activities. In the second phase, students and peers together discuss the provided feedback in an attempt to make meaning out of it correctly. The third phase refers to the translation of the feedback into task progress by the recipient student. Each of these phases involves different levels of regulated learning: socially shared regulation of learning (SSRL), co-regulation of learning (CoRL), and self-regulation of their learning (SRL).

DIALOGUE		
(1) **Planning and coordination of feedback activities**	**(2)** **Discussion around the feedback to support its uptake**	**(3)** **Translation of the feedback into task engagement**
SSRL among all (the student and peers)	*CoRL between the student and peers*	*SRL by the student*

Fig. 1. Theoretical framework of dialogic peer feedback

2 Technological Background

Informed by the presented theoretical framework, the Synergy platform was designed and developed to facilitate dialogic feedback among peers. Synergy is a web application developed using React and ASP.NET. Synergy can be seamlessly integrated into learning management systems (LMS). Instructors can import assignments from their courses to Synergy or create course assessments directly within Synergy. Students can upload their submissions in Synergy to receive peers' reviews. Once users are signed in their LMS, they also become authenticated users in Synergy.

Synergy offers distinct features for instructors and students (who have two roles as feedback provider and feedback recipient) and these features comprise over 15 user interfaces in total. That is, it goes far beyond classic features offered by existing systems (e.g., Canvas) to enable uploading the work and sending the feedback. For a peer-review round to take place, Synergy requires the instructors to set up the activity first. Synergy provides instructors with interfaces to create (or import) an assignment, rubric, review round, and peer groups. Once set up, students can upload their work and start to

collaborative with their peers to complete the review round assigned. Two of the critical user interfaces are shared in Fig. 2 and Fig. 3.
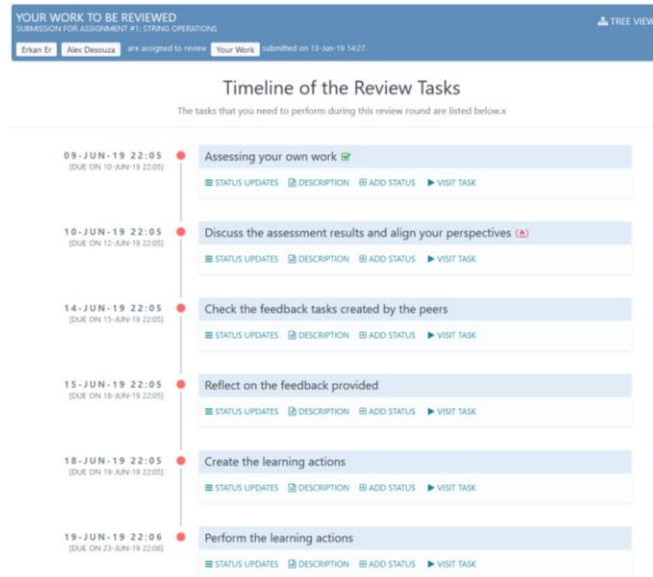

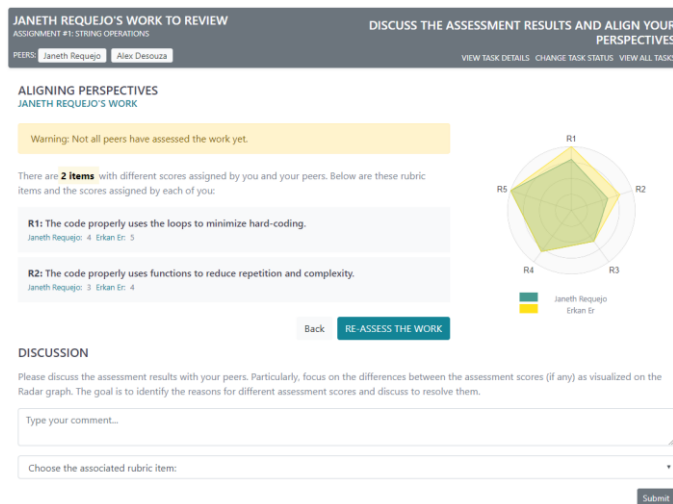**Fig. 2.** Peer-review round main page (student interface)

Fig. 3. Aligning the perspectives (student interface)

The interfaces provided in Fig. 2 serves as the home page of the current review round. In this page, students can view information about the current review round (e.g., description, dates), access their submission (if any), and locate their peers to work with

during the reviews. More importantly, in this page students can track their progress on the review tasks. These tasks are derived from the theoretical model but can be edited by the instructor depending on the contextual needs. Students can mark their progress on the individual tasks (e.g., task #1), while peers also can indicate their opinion on the collaborative tasks (e.g., task #2). Each review task is linked to a different page, where Synergy offers the necessary tools for students (or peers) to perform the required actions to complete the corresponding task. For example, when students click on the task #2 in Fig. 2, they will be navigated to the "aligning perspective" page as shown in Fig. 3. In this page, students are provided tools to assign the work based on the rubric and compare their rating with that of peers. They are also provided a discussion tool to discuss the discrepancies to resolve them.

3   Use Case

In the demonstration, we will make a use case of Synergy by which the participants will use and test all the features at first hand. To implement the use case, participants will be given different roles, and they will engage in the activities of planning the feedback activity, building dialogue within the Synergy environment, and monitoring various feedback processes via learning analytics features. The opinions of the participants about the possible uses of Synergy in different learning scenarios will be solicited.

References

[1]   S. Askew and C. Lodge, "Gifts, ping-pong and loops -Linking feedback and learning," in *Feedback for learning*, S. Askew, Ed. London: Routledge, 2000, pp. 1–17.

[2]   D. Nicol, "From monologue to dialogue: Improving written feedback processes in mass higher education," *Assess. Eval. High. Educ.*, vol. 35, no. 5, pp. 501–517, 2010.

[3]   D. Carless, D. Salter, M. Yang, and J. Lam, "Developing sustainable feedback practices," *Stud. High. Educ.*, vol. 36, no. 4, pp. 395–407, 2011.

[4]   D. Carless, "Feedback as dialogue," in *Encyclopedia ofEducational Philosophy and Theory*, M. Peters, Ed. Singapore: Springer, 2016, pp. 1–6.

[5]   P. Orsmond, S. J. Maw, J. R. Park, and A. C. Crook, "Moving feedback forward: Theory to practice," *Assess. Eval. High. Educ.*, vol. 38, no. 2, pp. 240–252, 2013.

[6]   B. O. O'Donovan, C. Rust, and M. Price, "A scholarly approach to solving the feedback dilemma in practice," *Assess. Eval. High. Educ.*, vol. 41, no. 6, pp. 938–949, 2015.