

Enhancing socially shared regulation in working groups using a CSCL regulation tools

Ernesto Panadero ¹, Sanna Järvelä ¹, Jonna Malmberg ¹, Marika Koivuniemi ¹,
Chris Phielix ², Jos Jaspers ² & Paul Kirschner ³

1 Faculty of Education, University of Oulu, Finland
{ernesto.panadero , sanna.jarvela , jonna.malmberg ,
marika.koivuniemi}@oulu.fi

2 Educational Sciences, University of Utrecht, The Netherlands
{C.Phielix , J.G.M.Jaspers}@uu.nl

3 Centre for Learning Sciences & Technologies CELSTEC, Open University, The Netherlands
Paul.Kirschner@ou.nl

Abstract. Socially shared regulation of learning (SSRL) refers to processes by which group members collectively regulate activity within a balanced shared responsibility model. SSRL has shown to increase performance and learning when compared to other forms of regulating collaborative work (co-regulation). SSRL, however, is a relatively new concept which needs empirical study, especially in how to promote this in real learning settings. This study is a major first step, studying the promotion of SSRL through an often used online collaborative work environment augmented with three SSRL tools (Radar, OurPlanner, OurEvaluator) to stimulate and enhance the four self-regulatory phases of learning: planning, monitoring, evaluating and regulating. Through the use environment and tools, students will be better able to share regulation of collaborative learning.

Keywords: Self-regulated learning, socially shared regulation, collaborative work, CSCL, regulation tools, scaffolding.

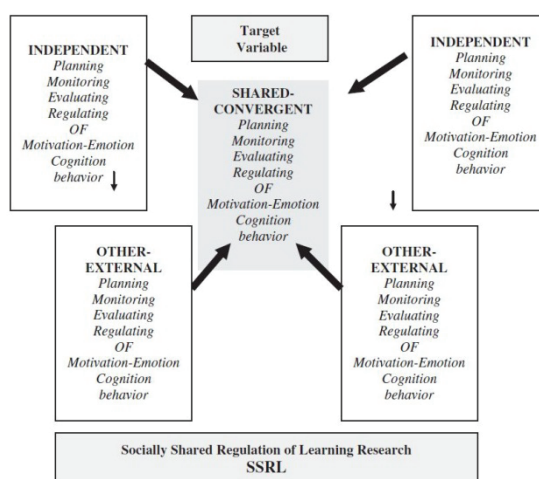
1 Theoretical framework

Regulation of learning has traditionally explored individual characteristics in various learning situations (self-regulation; [1]). However, new learning demands involving collaborative learning situations has shifted the focus towards the social aspects of regulated learning, namely co-regulation and socially shared regulation of

learning [4] [6]. Co-regulation of learning refers to processes where a group collaborates under unbalanced regulation (e.g. one of the members exerting power and deciding what to do). Socially shared regulation of learning (SSRL) refers to processes where group members collectively regulate activity; where decisions and regulatory activities are decided in shared ways. Research has shown that SSRL can produce better learning outcomes and enhance performance [5] [8]. Collaborative learning interventions, thus, should aim at promoting SSRL.

As can be seen in Figure 1, SSRL is reached through a number of iterations between the group members' individual self-regulation and the others self-regulation, until shared-convergent regulation is achieved [4]. As with individual self-regulation, the group's shared regulation is composed of four recursive phases: planning, monitoring, evaluating and regulating [9]. During the planning phase, the group establishes its goals and standards, and organizes the actions they will need to make to complete the task. While monitoring, group members compare the procedure they are following with the initial plan of action and the goals for the activity. Evaluating implies that the students compare the fit of their product to the standards determined in the planning phase. Finally, group members enter the regulating phase in which they make the changes needed to overcome an eventual gap between the standards set and the final product achieved.

Figure 1. Socially Shared Regulation of learning (extracted from [4]).



Research in the individual self-regulation field has found that interventions should aim to promote planning, monitoring and evaluating and that the most successful interventions are composed of an array of aspects: cognitive, motivational and emotional [3]. Research on promoting SSRL is limited necessitating building on research on individual learning [2]. The key aspect is that, to promote SSRL in the groups, a shared space is needed in which members can collaborate, creating and deciding how to regulate their efforts and actions. In a practical sense, this implies creating tools that target the phases of regulated learning such that students are able and stimulated to plan together, monitor how the group is performing, evaluate the final product against the standards set up at the beginning and, finally regulate/change accordingly to achieve their learning goals [6]. This is to say, prompt the aspects of socially shared regulation which often are salient for the students.

With these key aspects in mind, we tailored an operating online environment in which we could promote socially shared regulation. The Virtual Collaborative Research Institute (VCRI) (http://edugate.fss.uu.nl/~crociel/vcri_eng.html) is an online tool to promote collaborative work, usually with group members work on their own computer, either synchronously or asynchronously [7]. In the PROSPECTS project (<https://let.drupal.oulu.fi/en/node/10135>), the VCRI environment was used as a platform to set up and promote SSRL by plugging in existing features of that environment such as Radar, Co-Writer and chat.

Radar is a tool with which group members report about aspects of their individual self-regulation relevant for the collaborative work (e.g., I know how to perform the task), and aspects related to the group work (e.g., I think the group is capable of performing the task). Students rate these aspects along six different axes in a five Likert scale yielding a radar-diagram. The six items in the axes are: (1) I understand the task, (2) I know how to do this task, (3) This task is interesting, (4) My feelings influence on my working, (5) I feel capable of doing this task, and (6) My is capable of doing this task. The idea behind Radar is that students will be aware of their strengths and weaknesses in a current situation and thus the group will be aware of their strengths and weaknesses that they might confront during the task assignment.

Co-writer, a shared writing space, was divided to promote collaborative planning (OurPlanner), serve as a platform for the students on-line task execution

(Task execution) and finally, promote collaborative evaluation of the regulated learning (OurEvaluator). OurPlanner is a shared new tool which prompts the students in their planning (e.g., describing the task, describing its purpose, creating a concrete plan). Task execution is the place where group members can collaboratively write and modify their course assignments. Finally, OurEvaluator allows group members together evaluate and regulate aspects of their collaboration. The idea behind these tools is to help students collaboratively clarify the goals and standards for the task, along with the procedure and strategies they will use. What they write in the Co-writer should be used to guide their monitoring and evaluating.

2 Procedure

First year teacher education students (N = 130) are participating in a ‘Multi-media as a learning project’ course. The course consists of nine sessions where the students worked collaboratively in 3-4 member groups. Each learning session is divided in two different parts: (1) a face to face part at the university computer class with teacher support, and then (2) an online part that students perform individually. In both phases the SSRL tools is actively used.

The face to face sessions have three phases. First, the instructor introduces the task. Then, the students individually complete the Radar and as a result see each other’s Radars. This is followed by the groups collaboratively planning their work on the assignments (goals, strategies, etc.) using OurPlanner. The conversations during this planning are recorded. In the third phase, they work together performing the task.

The online sessions share the similar procedure as face to face sessions with one extra phase and with the students use the full SSRL regulation tool resources of the VCRI environment working synchronously on their own computer at home or at the university. First, the assignment is presented in VCRI. Then, teams plan their goals and the organization of the assignment using OurPlanner and negotiating through the chat. Third, they perform the task online using chat for negotiation during the task execution. Finally, they evaluate their work using the OurEvaluator.

In sum, the intervention promotes SSRL through the different phases. The planning of collaborative work is conducted during the planning phases in both face

to face and online. Students monitor their progress during the working phases. Evaluating and regulating happens when students receive the online task instructions –being able to reflect about what they have achieved so far- and, of course, during the evaluation phase of the online session once the task is done. What VCRI adds is the collaboration tool: allowing the students to work together and regulate through its uses.

3 Results

The first notions of the data show promising findings dealing with the SSRL tool's prompting not only socially shared regulation, but also collaborative learning. The VCRI environment data will be analyzed looking for traces of SSRL to classify groups according to their regulation and performance. The data collection is currently ongoing, but the preliminary findings will be presented at the workshop.

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