Student Preferences for Assessment Methods and Perceptions of Fairness in Grading Collaborative Learning

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Abstract

Collaborative Learning (CL) is a pedagogical approach that emphasizes student collaboration to achieve shared academic goals. For successful CL to occur, students need to regulate their learning on both an individual and collective level, which is referred to as self-regulated learning (SRL) and socially shared regulation of learning (SSRL). SRL refers to the ability of learners to plan, monitor, and evaluate their own learning processes. High levels of SRL are associated with greater motivation, persistence, and academic success. SSRL, on the other hand, involves the co-regulation of learning activities within a group, where learners jointly regulate their collective learning processes. Effective SSRL requires communication, coordination, and mutual support among group members. While CL can foster higher-order skills and shared knowledge construction, it can also lead to issues like social loafing and free riding if individual contributions are not adequately recognized. To assess students' contributions to the collaborative process, self-assessment (SA) and peer assessment (PA) can be used to actively involve students in the assessment process to help teachers in grading CL. This study investigates how self-regulated learning (SRL) and socially shared regulation of learning (SSRL) affect students' preferences for SA and PA in collaborative settings and their perceptions of fairness in these methods. The findings provide valuable insights into the effects of SA and PA on SRL and SSRL, and how these relate to students' preferences for SA and PA, as well as perceived fairness. This suggest that incorporating SRL and SSRL into the assessment of CL can enhance fairness and improve student engagement and satisfaction. Future research is needed to delve deeper into this phenomenon. The study highlights the need for educators to consider SRL and SSRL when designing assessment methods for CL to reduce social loafing and free riding, ultimately leading to more effective and equitable learning experiences.

Keywords: collaborative learning, collaboration, preferences, assessment, perceptions, fairness, self-regulated learning, socially shared regulation of learning, group work.

Student Preferences for Assessment Methods and Perceptions of Fairness in Grading Collaborative Learning

Collaborative Learning (CL) is an important pedagogical approach in higher education, emphasizing student collaboration to acquire shared understanding of academic tasks (Strijbos, 2011). CL involves students working together in small groups to achieve mutual goals, fostering higher-order skills (e.g. problem-solving and critical thinking), and constructing shared knowledge to attain learning benefits that cannot be achieved by working alone (De Hei et al., 2016). However, CL can become unsatisfactory when not all students contribute equally to the task, leading to two common complaints about inadequate contribution to group tasks: social loafing (reduction of individual effort in a group compared to working alone) and free riding (benefiting from group work without bearing a proportional amount of the CL process) (Kwon et al., 2014; Ma et al., 2018; Strijbos, 2011).

Collaboration naturally involves differences in perspectives, leading to discussions and debates aimed at reaching a shared understanding of the problem. Both students and teachers need to manage different points of view to avoid negative experiences from students when working collaboratively. The occurrence of social loafing and free riding can be attributed to a lack of being able to identify individual contributions to the group effort (Falchikov & Goldfinch, 2000; Ma et al., 2018). Lack of participation can be a trigger for frustration among students that can lead to resentment (Robinson, 2013), which in turn can affect a students' motivation to invest effort in a task. Providing students with positive experiences during CL can improve their attitudes towards collaboration (Rojas et al., 2022).

For CL to thrive, students must engage in processes that cultivate interpersonal relationships, a positive group climate, trust, and a sense of community, which are all integral to socio-emotional interactions (Kwon et al., 2014). Such processes take place individually as well as during interactions between group members, demonstrating that understanding regulation requires attention to both the individual and group level (Järvelä & Hadwin, 2013). Coordination of group activities is vital for establishing a positive group climate, fostering helpful interactions. Conversely, the irresponsibility of one unmotivated member can undermine the building of trust, disrupting the group climate and impeding the overall group process (Kwon et al., 2014).

Regulation of the Learning Process

Regulation of learning plays a key role in all major learning theories. Feedback is provided to increase regulation, which in turn leads to adaptation (Allal & Lopez, 2005). The

socio-cognitive perspective recognizes that students develop skills to help them direct their learning process, which is known as self-regulated learning (SRL) (Hogenkamp et al., 2021; Rojas et al., 2022; Silva et al., 2023; Zimmerman 2013). This involves students' ability to control their mental resources and achieve educational goals through three phases described by Zimmerman's model: (1) forethought, (2) performance, and (3) self-reflection (Panadero, 2017; Silva et al., 2023; Zimmerman, 2002). During the forethought phase, students analyze the task to set realistic goals and identify what strategies are needed to obtain these goals through self-motivation beliefs. In the performance phase, students monitor their progression towards the goals they had set which involves reflection on their work. Lastly, the self-reflection phase is where students evaluate the success or failure of their work and use this feedback to adapt and improve their learning (Panadero et al., 2016).

Successful and unsuccessful students can be separated by their ability to self-regulate (Panadero et al., 2016), as they recognize that studying increases their knowledge and therefore monitor it (McMillan, 2013). Successful students use a range of cognitive, behavioral, and motivational strategies to guide and improve their learning process (Rojas et al., 2022). By becoming aware of and managing their own mental functioning, including cognition, meta-cognition, behavior to control, and emotion and motivation, students can achieve their goals through regulating their learning (McMillan, 2013; Silva et al., 2023). As Sadler (1989) stated: "In other words, students have to be able to judge the quality of what they are producing and be able to regulate what they are doing during the doing of it" (p. 121).

This socio-cognitive perspective additionally points to the fact that learning is a social process where interactions occur that influence regulatory processes (Silva et al., 2023). SRL can be transferred to a context of collaborative learning, where it is known as socially shared regulation of learning (SSRL) and where regulation is supported by peers (Hogenkamp et al., 2021). This is summarized by Silva and colleagues (2023) as follows: "In this way, an individual's regulatory processes are guided in process towards successful SRL by triggering SSRL episodes when they are needed in groups over time" (p. 69). Hogenkamp and colleagues (2021) underscore the importance of SSRL, i.e. the group's ability to collectively regulate their learning, to avoid problems on cognitive, motivational and socio-emotional levels during collaborative interactions to increase motivation, performance, and satisfaction. Although SSRL is a relatively new field of research, having been first studied in 2003, there is limited exploratory data available (Pandero & Järvelä, 2015). However, a recent study by

Shao and colleagues (2023) highlights an association between high levels of SSRL and reduced social loafing.

Assessment of Collaborative Learning

Regulated learning is both a social and solo phenomenon, as is assessment, since it is conducted by, on and for social actors in collaborative settings (Black & William, 1998). In the last few decades, assessment by teacher-directed testing shifted to a mix of both formative and summative assessments (McMillan, 2013; Strijbos & Sluijsmans, 2010). Formative assessment is used to generate feedback on performance to empower students as self-regulated learners by actively involving students in the assessment process throughout the course (Andrade & Valtcheva, 2009; Nicol & Macfarlane-Dick, 2006). In contrast to formative assessment, summative assessment tends to be individualistic and instructor driven, focusing primarily on cognitive aspects of the learning process at the end of the course (Sluijsmans & Strijbos, 2010).

Classroom assessment is a complex but crucial concept (McMillan, 2013), as it measures student learning (McMillan, 2013). It is still mostly the responsibility of the teacher to provide feedback, but this view of transferring information ignores how feedback interacts with student beliefs and motivation (Nicol & Macfarlane-Dick, 2006), hindering students from becoming empowered and developing self-regulation skills (McMillan, 2013).

Black and William (1998) explored the relationship between SRL and assessment for learning, after Butler and Winne (1995) connected SRL and formative feedback practices in classroom assessment. They laid the foundation for what later would be known as Assessment for Learning (AfL). AfL practices involve significant student involvement and feedback to enhance learning. Self-assessment (SA) and peer assessment (PA) are key components of AfL, with substantial evidence supporting the relationship between SA and self-regulated learning (SRL). Explicit criteria in SA are promising for improving SRL skills of setting realistic goals and evaluating progress, but the specific interventions most effective for SRL are still unclear (Panadero et al., 2016).

Both SA and PA have been shown to enable the assessment of individual contributions during collaborative learning by allowing students to evaluate each other (Ion et al., 2023; Ma et al., 2018). SA involves students making judgements about achievements and outcomes of their own learning, and is shown to positively affect student performance, whereas during PA students consider the value or worth of the learning outcomes of their peers, where both assessor and assessee benefit from the process and engage in deep learning (McMillan, 2013). Involving students in the assessment process helps teachers to assess

student participation during CL, which can alleviate the challenges teachers face and reduce their workload (De Wever et al., 2011; Ma et al., 2018; McMillan, 2013). A major challenge is that many teachers are reluctant to involve students actively in assessments, making it crucial to support teachers in implementing SA and PA. Despite potential risks, such as the misuse of SA and PA for summative purposes, increased research on AfL practices remains promising for classroom assessment (Panadero et al., 2016).

Panadero and colleagues (2016) explored SA and PA in the context of SRL. These AfL practices provide students with the opportunity to practice these SRL skills and receive feedback to better these skills. Using SA for summative purposes is recognized by some researchers as a valid measure for student achievement, while others argue students may use it to overestimate their work for higher grades. By merging AfL and SRL approaches, it is proposed that SA may improve students' SRL skills by providing a space to self-assess their own work. Students can be involved in the assessment of the collaborative process of CL through PA (De Wever et al., 2011; Falchikov & Goldfinch, 2000; Ma et al., 2018; Strijbos & Sluijsmans, 2010). PA promotes active learning and the development of teamwork skills through detailed feedback, which points to its potential effect on SRL and SSRL (Falchikov & Goldfinch, 2000; Topping, 1998). PA has been found to contribute to psychological safety and trust, encouraging open communication and innovation in problem solving (Strijbos & Sluijsmans, 2010). Furthermore, Panadero and colleagues (2016) found that SSRL through PA develops students' SRL skills by promoting interaction and feedback. However, it is recommended that students require sufficient knowledge and skills to provide effective PA (Panadero et al., 2016).

Perceptions of Fairness in Assessment

Fairness is considered a desirable quality, next to reliability and validity, as it is essential for effective classroom assessment (McMillan, 2013; Rasooli et al., 2019). Students' perceptions of the assessment serve as valuable input into the motivational process of self-regulation of learning (McMillan, 2013). When assessment fails to properly reflect what students have learned, it makes the students feel less valued, influencing students' perceptions of fairness negatively (McMillan, 2013). Student perceptions of fairness regarding feedback and assessment in the classroom are positively associated with student motivation and learning outcomes (Chory-Assad, 2002; McMillan, 2013; Rasooli et al., 2019), which in turn results in greater engagement, effort, and satisfaction. Conversely, poor performance has been associated with being unfairly assessed and thereby undervalued,

which relies on the perception of fair and equitable outcomes, considering both the student's own contributions and those received by a reference peer (Chory-Assad, 2002).

While CL is seen as a valuable learning method, assessment-related issues can arise. Assessments should consider both the final product and the process used to achieve it (Ion et al., 2023). The perception of fairness of students can make them feel that their contributions in CL are valued and appreciated (Bowman, 2020). Assessment is especially perceived as an unfair educational practice when it involves collaborative work where all group members are assigned the same grade. There is consistent evidence indicating that students prefer equal treatment in grading, where criterion-referenced assessment is considered as most fair as it facilitates transparency. This is appreciated by students because it gives them the opportunity to learn and demonstrate their learning (McMillan, 2013). However, this should be carefully considered, since what is perceived as fair in one context might not be perceived the same in another (Rasooli et al., 2019).

The Present Study

Given that assessment of CL is under-researched (Meijer et al., 2020), this study aims to investigate whether the degree of SRL and SSRL during collaborative learning can affect students' preference for SA and/or PA and their perceptions in terms of fairness. What may be perceived as the best or most fair assessment method might be influenced by the functioning of a group during the collaborative process due to their abilities to individually (SRL) and collectively regulate their learning (SSRL). If that is the case, teachers can improve students' experiences and attitudes towards collaborative learning by considering appropriate assessment methods to reduce free-riding and social loafing. This can provide valuable insights into students' preferences and perceptions to improve the fairness of graded assignments in courses, which can help teachers choose their assessment method for grading collaborative learning.

Method

Participants

The target population for the study consisted of students at the Bachelor and Master level of Dutch institutes of higher education. Respondents were gathered through distribution of the questionnaire using email, Survey Circle, and social media (Instagram, LinkedIn, Facebook). This resulted in an initial cohort of 154 respondents, of which 28 respondents were excluded who did not give consent and filled in any background information. The remaining respondents (n = 126) were students aged 17 to 31, studying 1 to 5+ years, from the faculties of Educational and Social Sciences (GMW), Arts, Communication, Medicine, Healthcare, MiZ, Engineering, Environments, Sports, Thorbecke Academie, Economics and Business, Law, SIBK, Humanities, etc. As 51 respondents did not answer any vignettes they were excluded for the analyses, resulting in 75 respondents who answered at least one vignette. This sample of students was aged 17 to 31 (M = 21.63, SD = 2.62), attended college (32%) or university (68%), studied a Bachelor (90.7%) or Master degree (9.3%), were of Dutch nationality (92%) or International (8%), were in year 1 (22.7%), 2 (32%), 3 (17.3%), 4 (16%), or 5+ (12%) of study, and studied mostly gamma sciences (74.4%).

Research Design

A vignette study was conducted using a survey design, which was constructed in Qualtrics. It started off with a brief introduction, information letter and request for active informed consent (Appendix A), which was obligatory prior to the start of the actual survey; if consent was not provided the survey ended. The first set of questions asked the respondents to rate their overall enjoyment regarding working collaboratively on an assignment, as well as their ability to self-regulate (SRL) and socially shared regulation of learning (SSRL). They were also asked to rate whether collaboration should be assessed by self-, peer, and/or combined assessment. Additionally, different groups of respondents were presented with different vignettes, but within each group each respondent received the same vignette set. This translated to each respondent answering two vignettes in four combinations, which are counterbalanced: A-B, B-A, C-D, D-C.

Procedure

The data was collected through Qualtrics from March 8 until March 31, 2024. Students were approached via email, social media, LinkedIn and Survey Circle to voluntarily participate in this study by filling in the survey. Respondents were randomly presented with one of two vignette sets, however not completely as intended as the randomizer feature of

Qualtrics only carried out the options of vignette A followed by B, or C followed by D. The survey was available in both English and Dutch to reach a wide range of respondents. All wording was translated as accurately as possible using DeepL. Average completion time was around 15 minutes.

Measures

The dependent variables were students' (a) overall enjoyment of CL, preferences for (b) self-assessment (SA), peer assessment (PA) or combined assessment (SA and PA) in the context of collaborative learning (CL), and (c) perceptions of fairness regarding the method of choice. The independent variables self-regulation of learning (SRL) and socially shared regulation of learning (SSRL) are measured through self-rated statements and are further mentioned in the 'vignettes' subsection of the next section.

Instrument

Background Information and General Perceptions

The first set of questions queried demographic data from the respondents; (1) age, (2) academic level, (3) year of study, (4) faculty, and (5) whether they are a Dutch or an international student. Next, the respondents were asked to rate their overall enjoyment of collaborating in a group for an assignment. The following set of questions consisted of items with slider Likert scales, which ranged from scores 0 (*fully disagree*) to 10 (*fully agree*), with score 5 being neutral. These questions asked respondents to rate their SRL and through statements such as "I am capable to set specific goals for my learning tasks" and SSRL such as "I am open to sharing my learning strategies and resources with peers". These items aimed to provide a rough estimate of respondents' SRL and SSRL skills. Subsequently, the respondents were asked whether they thought CL should be graded using SA and/or PA. For example, the statement "In the case of group work, the collaborative process should be assessed by self-assessment" was used. See Appendix B for the list of items.

SRL and SSRL

It was necessary to reverse three items (Q3, Q7 and Q10, Appendix B) by computing a new variable for each, as these were phrased negatively compared to the other items. The items for SRL and SSRL were formed into a scale via a reliability analysis to analyze the internal consistency of the items as a scale. Cronbach's alpha for the SRL scale was .55, and .51 for the SSRL scale. One item (Q3) was excluded from the SRL scale, as this increased Cronbach's alpha ($\alpha = .60$). See Appendix C. Subsequently, mean scores were computed for those items of the two separate scales, referred to as MeanSRL and MeanSSRL.

Vignettes

The respondents were randomly presented with two of the four vignettes (see Appendix D for the full texts). The vignettes were constructed by means of personal experiences with collaborative learning in addition to the conceptualizations of SRL and SSRL in the literature. Each of the four vignettes described different scenarios of varied degrees of SRL and SSRL (i.e. high or low degree) in groups during collaborative work. These were used to elicit respondents' judgment and activate their imagination by providing them with a fictional situation to which they expressed their unbiased perceptions as they remained detached from the scenario. They view the vignettes from their own point of view (first-person), which enables them to empathize with the characters and reflect on their own experiences and feelings. By mirroring real-life interactions in collaborative group settings, the respondents may feel more invested in the scenarios presented, leading to more meaningful attitudes related to fairness. This was done to elicit individualized and comparable responses, as the variables are being controlled through the same contextual framework for the respondents receiving the same vignettes. Both internal and external validity are increased by means of these realistic and controlled fictional situations (Aguinis & Bradley, 2014; Poulou, 2001).

Preferences and Perceptions

The respondents chose their preferred assessment method for the scenario in the vignettes they are presented with and rated their perceived fairness of this method. The methods they could choose from were: (a) group grade, (b) SA with group grade, (c) PA with group grade, and (d) combined assessment in terms of both SA and PA with group grade. Lastly, the respondents were asked to indicate their preference for distributing the percentages of both the process and product parts of the group assignment as stated in the vignettes, which rounds up to 100% for the total grade. After each of the three questions, there was a subsequent open-ended question that asked them to justify their choice.

Analyses

Methodological Triangulation

To determine whether the degree of SRL and SSRL during CL affects students' preferences for SA and/or PA, and how these preferences relate to their perceptions of fairness, methodological triangulation was used which involves using more than one method to investigate a phenomenon. Both quantitative and qualitative analysis methods were chosen as part of a mixed methods approach for a comprehensive understanding of the data through triangulation. This enhances the validity and reliability of the study by using the qualitative

findings of open-ended questions to contextualize the quantitative results, which offers a more nuanced interpretation of the data through different approaches (Valencia, 2022).

Quantitative Analysis

The first part of the analysis involved descriptive statistics to summarize the main characteristics of the sample. Measures of central tendency (mean) and variability (standard deviation) were calculated to provide an overview of the data distribution. Next, Pearson's correlation analysis was computed to explore the strength and directions of the possible relationships between students' general perceptions, degrees of SRL and SSRL, and preferences for SA, PA or combined assessment. This was followed by regression analysis for the significant outcomes to understand the predictive power of the SRL and SSRL mean variables, i.e. to what extent these variables contribute to explaining variations in assessment preferences. Lastly, one-way ANOVA was utilized to compare the means of students' self-rated SRL and SSRL scores to look for significant differences between the groups who chose different assessment methods in the vignettes, with Tukey's post-hoc test to reveal which groups differed.

Assumptions. To conduct these analyses, several assumptions needed to be verified to ensure validity and reliability of the results. For correlation analysis, the variables were checked for linearity, homoscedasticity, and normality, which are also relevant for the regression analysis that additionally requires verification of independence of errors and absence of multicollinearity. Lastly, ANOVA similarly assumes homoscedasticity, independence of observations and normality of the mean scores of SRL and SSRL within groups. All assumptions were checked to ensure robust and reliable conclusions. Significance level of $p < .05$ is used unless stated otherwise.

Qualitative Analysis

Additionally, a content analysis was performed on the open-ended justification questions to complement the quantitative findings with qualitative responses. This analysis provides insight into students' argumentation for choosing certain assessment methods, as well as their perceptions of fairness associated with these methods and their preferred distribution of percentages for both the product and process part of the final grade. The qualitative findings were coded and categorized for each assessment method per vignette to provide insight into the reasons for choosing that method. These findings were compared in terms of similarity or differences across the different assessment methods and descriptively used to provide arguments for students' responses.

Results

Descriptive Statistics

Table 1 shows the descriptive statistics of the general perceptions items to which the respondents rated their general enjoyment of CL and whether they thought CL should be assessed using SA, PA and combined assessment. On average, respondents rated CL just about sufficiently enjoyable (M = 5.70, SD = 2.16). Furthermore, combined assessment displayed the highest mean rating (M = 8.40, SD = 1.70) compared to PA (M = 6.28, SD = 2.00) and SA (M = 5.49, SD = 2.09). Lastly, self-ratings of SSRL (M = 7.06, SD = 1.18) were slightly higher than self-ratings of SRL (M = 6.19, SD = 1.21).

Table 1

Descriptive statistics of general perceptions items and mean scores of SRL and SSRL.

	M	***SD***	***Min.***	***Max.***	***St. kurtosis[1]***	***St. skewness[2]***
EnjoyCL	5.70	2.16	0.00	10.00	-2.40	-0.67
Self-ass.	7.23	0.96	6.30	8.10	-2.17	0.26
Peer ass.	7.50	2.12	3.40	10.00	-2.12	0.85
Combi. ass.	7.65	1.89	0.00	10.00	-5.31	4.65
MeanSRL	6.19	1.21	2.75	8.50	-2.26	0.29
MeanSSRL	7.06	1.18	3.50	9.75	-0.81	0.76

Note. n = 75. EnjoyCL = Enjoyment of CL. Self-ass. = SA. Peer ass. = PA. Combi. ass. = combined assessment (i.e. SA and PA). MeanSRL = mean scores from the scale of SRL items. MeanSSRL = mean scores from the scale of SSRL items

Assessment Methods per Vignette

From the initial sample, 75 respondents answered at least one vignette (either A or B), of which 58 respondents answered two (A-B or C-D). In all vignettes, combined assessment of both SA and PA with a group grade was chosen most frequently (Table 2).

Correlation and Regression Analyses

The correlation analysis looked at potential relationships between items in the survey, whereafter regression analysis confirmed the direction and strength of the predictors for the significant relationships. First, the item for enjoyment of CL was correlated with all three items of perceptions of SA, PA and combined assessment which were part of the general perceptions items before the vignette questions. This showed solely a significant result for PA (r = .261, p = .024), see Table 3. Furthermore, the item for enjoyment of CL was also

correlated with the mean scores for SRL (r = .301, p = .009) and SSRL (r = .240, p = .038), which displayed similar significant outcomes (Table 4).

Table 2

Frequencies of chosen assessment methods per vignette.

Vignettes (SRL-SSRL)		**Group grade**		**Group grade with SA**		**Group grade with PA**		**Group grade with combined assessment**	
	n	*f*	%**	*f*	%	*f*	%	*f*	%
A (++)*	40	4	10.0	4	10.0	8	20.0	24	60.0
B (- -)	34	3	8.8	7	20.6	8	23.5	16	47.1
C (- +)	35	5	14.3	4	11.4	5	14.3	21	60.0
D (+ -)	24	1	4.2	2	8.3	5	20.8	16	66.7

Note. *High (+) or low (-) degrees of SRL and SSRL in the vignette are displayed for each vignette. **Valid percentage based on *n* per vignette (total is 100% for each row).

Table 3

Correlation coefficients of item Enjoyment of CL and items of assessment methods.

Variable	**1**	**2**	**3**	**4**
1. EnjoyCL	—			
2. SA	.064	—		
3. PA	.261*	-.331**	—	
4. Combined assessment	.055	.227*	.281*	—

Note. n = 75.

* p < .05. ** p < .01

Table 4

Correlation coefficients of item Enjoyment of CL and mean scores of SRL and SSRL.

Variable	**1**	**2**	**3**
1. EnjoyCL	—		
2. MeanSRL	.301**	—	
3. MeanSSRL	.240*	.176	—

Note. n = 75.

* p < .05. ** p < .01

Next, a correlation analysis was conducted for the mean scores of SRL and SSRL to examine their possible association (Table 5). This analysis showed few significant results, solely for mean SRL with vignette C (r = .335, p = .049) and for mean SSRL with vignette A (r = .371, p = .019). Mean SSRL with vignette C was almost significant (r = -.307, p = .072). All significant outcomes were subsequently examined with regression analysis, but this did not display any strong predictors.

Table 5

Correlation coefficients of mean scores of SRL and SSRL and preferences for assessment methods per vignette.

Variable	1	2	3	4	5	6
1. MeanSRL	—					
2. MeanSSRL	.176	—				
3. Vig. A pref. ass.	-.032	.371*	—			
4. Vig. B pref. ass.	.097	.225	.260	—		
5. Vig. C pref. ass.	.335*	-.307	.[1]	.[1]	—	
6. Vig. D pref. ass.	-.072	.121	.[1]	.[1]	.425*	—

Note. n = 75.

[1] = cannot be computed because at least one of the variables is constant.

* p < .05.

One-way ANOVA test

Table 6 provides an overview of mean SRL and SSRL scores of the self-ratings of the respondents, to descriptively compare these means across the different chosen assessment methods in each vignette. To determine potential significant differences between these groups, a one-way ANOVA test was conducted which revealed one significant outcome for vignette A in relation to the SSRL mean scores, F(2.36) = 5.775, p = .002. The post-hoc-Tukey-test revealed significantly higher SSRL mean scores for the respondents who chose combined assessment compared to those who chose SA (p = .007) and PA (p = .029).

Fairness Perceptions of the Assessment Methods

Mean rating scores of fairness regarding the chosen assessment methods in each vignette are displayed in Table 7. In vignettes A, B, and C group grade is perceived as the fairest of all methods. However, without considering this method, all vignettes show the highest fairness scores for combined assessment. There were no significant differences between the different assessment methods.

Table 6

Means of SRL and SSRL for each assessment method per vignette.

	n	*M*		*SD*		*Min*		*Max*		*St. kurtosis*[1]		*St. skewness*[2]	
Vignette A		**SRL**	**SSRL**	**SRL**	**SSRL**	**SRL**	**SSRL**	**SRL**	**SSRL**	**SRL**	**SSRL**	**SRL**	**SSRL**
Method 1[a]	4	6.43	7.14	1.23	0.67	5.25	6.63	7.63	8.13	-2.12	1.16	0.01	1.67
Method 2[b]	4	6.26	5.79	1.35	1.58	4.25	3.50	7.13	7.13	1.43	1.10	-1.90	-1.55
Method 3[c]	8	6.24	6.46	1.57	0.72	3.50	5.75	8.50	7.50	0.19	-1.13	-0.77	0.86
Method 4[d]	24	6.26	7.64	1.02	1.00	4.50	5.43	7.85	9.63	-1.24	0.49	-0.30	-0.43
Vignette B		**SRL**	**SSRL**	**SRL**	**SSRL**	**SRL**	**SSRL**	**SRL**	**SSRL**	**SRL**	**SSRL**	**SRL**	**SSRL**
Method 1	3	5.32	7.58	0.16	0.80	5.20	6.82	5.50	8.43	.	.	1.26	0.38
Method 2	7	6.17	6.14	1.29	1.55	4.25	3.50	7.63	8.75	-0.72	1.49	-0.68	-0.06
Method 3	8	6.79	7.16	1.49	1.23	3.50	5.75	8.50	9.38	2.63	0.02	-2.24	0.86
Method 4	16	6.09	7.44	0.88	0.93	4.50	5.43	7.13	9.63	-1.19	1.88	-0.72	0.54
Vignette C		**SRL**	**SSRL**	**SRL**	**SSRL**	**SRL**	**SSRL**	**SRL**	**SSRL**	**SRL**	**SSRL**	**SRL**	**SSRL**
Method 1	5	4.80	7.60	1.35	1.48	2.75	5.98	6.00	9.75	0.09	-0.22	-0.95	0.77
Method 2	4	6.62	7.26	1.76	1.09	4.03	6.37	7.93	8.85	1.31	1.16	-1.78	1.62
Method 3	5	5.76	7.23	1.69	1.28	3.03	5.75	7.63	8.82	1.17	-0.98	-1.27	0.01
Method 4	21	6.36	6.62	0.92	1.13	4.47	4.65	8.03	8.20	-0.23	1.00	-0.11	-0.84
Vignette D		**SRL**	**SSRL**	**SRL**	**SSRL**	**SRL**	**SSRL**	**SRL**	**SSRL**	**SRL**	**SSRL**	**SRL**	**SSRL**
Method 1	1	7.63	5.75	.	.	7.63	5.75	7.63	5.75	.	.	.	.
Method 2	2	5.23	6.90	1.70	0.74	4.03	6.37	6.43	7.43	.	.	.	.
Method 3	5	6.53	6.79	1.40	0.82	4.35	5.98	7.93	8.03	0.37	0.14	-1.19	0.88
Method 4	16	6.19	6.84	0.97	1.30	4.47	4.72	8.03	8.85	-0.26	-1.06	0.12	-0.44

Note. Method 1[a] = group grade. Method 2[b] = group grade with SA. Method 3[b] = group grade with PA. Method 4[d] = group grade with combined assessment.

St. kurtosis[1] = standardized kurtosis. St. skewness[2] = standardized skewness.

Table 7

Fairness of each assessment methods per vignette.

Vignette A	***n***	***M***	***SD***	***Min.***	***Max.***	***St. kurtosis[1]***	***St. skewness[2]***
Method 1[a]	4	9.50	0.41	9.00	10.00	0.57	0.00
Method 2[b]	4	7.23	0.96	6.30	8.10	-2,19	-0.03
Method 3[c]	8	7.50	2.12	3.40	10.00	0.61	-1.33
Method 4[d]	23	7.65	1.89	0.00	10.00	13.71	-6.62
Vignette B							
Method 1	3	8.60	0.46	8.10	9.00	.	-0.76
Method 2	7	6.44	1.24	5.10	8.50	-0.37	0.61
Method 3	8	7.13	2.74	2.10	10.00	0.13	-1.44
Method 4	15	7.77	1.09	4.70	9.00	3.49	-2.95
Vignette C							
Method 1	4	8.63	1.25	7.00	10.00	0.35	-0.55
Method 2	4	6.75	1.33	4.80	7.70	1.13	-1.70
Method 3	5	6.78	1.18	4.90	8.00	0.81	-1.30
Method 4	18	7.14	1.49	3.20	9.00	1.52	-1.93
Vignette D							
Method 1	1	7.10	.	7.10	7.10	.	.
Method 2	2	7.50	0.71	7.00	8.00	.	.
Method 3	5	7.30	0.84	5.90	8.10	1.46	1.68
Method 4	16	7.56	1.00	5.30	9.00	0.47	-1.28

Note. Method 1[a] = group grade. Method 2[b] = group grade with self-assessment. Method 3[b] = group grade with peer assessment. Method 4[d] = group grade with combined assessment.
St. kurtosis[1] = standardized kurtosis. St. skewness[2] = standardized skewness.

Distribution of Percentages

Table 8 shows the average percentages given for the process part of the grade, which in combination with the percentage of the product part amounts to 100%. In all vignettes, respondents assigned a higher percentage to the process part, which were higher in vignettes C and D compared to vignettes A and B.

Table 8

Distributed percentage scores for the process part of the final grade.

	n	*M*	*SD*	*Min.*	*Max.*	*St. kurtosis*[1]	*St. skewness*[2]
Vignette A							
Process*	39	43.3%	17.18	10.00	75.00	-6.17	10.97
Vignette B							
Process	33	42.0%	21.47	0.00	100.00	-3.20	2.37
Vignette C							
Process	31	33.1%	18.39	0.00	75.00	-1.62	1.10
Vignette D							
Process	24	37.2%	18.51	25.00	90.00	-1.33	0.58

Note. *Process percentage is part of total grade which adds up to 100% with product part.
St. kurtosis[1] = standardized kurtosis. St. skewness[2] = standardized skewness.

Justifications for Assessment Preferences, Fairness and Percentage Distributions

Vignette A

Respondents (n = 11) who were presented with vignette A reported choosing the combination of SA and PA because they thought the final grade should be based on the product while considering individual contributions. Arguments for this mainly expressed the necessity of being able to evaluate others' work, as it displays what happened during the collaboration and how each member of the group contributed to the project. Preventing free riding is commonly mentioned (n = 7), as well as being able to evaluate the process from different points of view (n = 5), where every aspect is considered. This was perceived as most fair in relation to vignette A which described high degrees of both SRL and SSRL, because it would be beneficial for students as they will be acknowledged and rewarded for their effort. Others chose solely SA or PA with a group grade, with similar arguments as with combined assessment stating that students have a shared responsibility for collaborating with each other. Some respondents reported (n = 3) distrust since often students abuse their power in over-rating their own contribution or others' due to cronyism. The few respondents (n = 3) that chose solely a group grade for the product, stated that since there were no difficulties during the collaboration, assessing the process would not be necessary, as every student would still receive a similar final grade which was thought of as most fair.

Vignette B

For vignette B, the option for SA (n = 7) was a more popular choice in comparison to vignette A (n = 4). Respondents found (n = 4) that SA could be used to report poor

collaboration and difficulties during the assignment. This could give students the opportunity to reflect for themselves what and where things went wrong and how they can improve for the next assignment. The choice for PA was mostly based on being able to report free-riders with similar answers compared to vignette A. Some respondents (n = 3) stated that their choice for assessment method did not change due to poor individual and collaborative contributions. This was the case for combined assessment as well, where similar arguments were made as for vignette A. Combined assessment was perceived as most fair, since an expert (i.e. the teacher), the students themselves, and the other group members could evaluate the effectiveness of the collaboration where good and poor performers would be graded based on their effort. A few respondents (n = 3) chose just a group grade for the product, because they thought that SA and PA would not be valid due to poor collaboration, resulting in inadequate evaluations for the process part. Similar to vignette A, differences in distribution of percentages were shown. However, respondents that chose group grade (n = 3) perceived the product as most valuable, while the group that chose PA (n = 3) found the process and product part to be of similar value. The other two assessment options showed equally differentiated answers on perceived value of product and process part.

Vignette C

Next, for vignette C respondents chose combined assessment most frequently, however the option of solely a group grade for the product was chosen a lot as well compared to the other vignettes. Arguments for this option (n = 3) consisted of opinions that since there were no difficulties in the collaborative process, the group members deserve the same final grade. Others reported (n = 2) that they thought the process should not be graded, but rather evaluated and discussed, so that students can learn from this feedback and use it in the next assignment. As they achieved a shared understanding of the assignment, the group members were able to get to the same outcome through equal effort, even though this did not go that well for everyone. Fewer respondents chose SA or PA as a method for grading the process. They thought these evaluations (n = 4) provide the opportunity to critically reflect on students' own and others' contribution to prevent free riding among group members. Combined assessment was the most popular option, where respondents frequently reported prevention of free riding (n = 3), praising extra effort (n = 2) and providing a complete overview of the collaboration process where all aspects are considered for the final grade (n = 8). This is perceived as most fair, as this helps students to reflect and learn from their and others' feedback, and each member receives a representative grade for their effort. The product part of the grade is perceived as most valuable and therefore was assigned the highest

percentage compared to the process part. But respondents did think (n = 7) the process should also be considered, as this represents the effectiveness of the collaboration and helps to assign fair grades to every group member.

Vignette D

Finally, for vignette D, like all other vignettes, the option with combined assessment was most frequently chosen. Similar arguments were given as respondents stated (n = 7) that assessing the process would consider poor communication and collaboration for the final grade, to reduce free riding and increase student effort. SA was also rarely chosen by respondents, while PA was slightly a more popular choice. Respondents argued (n = 2) that SA would not be necessary as each members' own contribution was good, however PA could help in providing support for discussing what went wrong and how to improve. Arguments pointed (n = 2) to the fact that every member is responsible for effective communication in the group, therefore that is what should be graded as well according to the respondents. Even though some parts of the project are easy enough to do without any consultation, it might be good to see how other members handle certain tasks from which the students can learn. The group grade without collaborative assessment was least popular, without any arguments being provided. Of all vignettes, only this one received solely answers (n = 9) that pointed towards the product being of highest value and should therefore be assigned with a higher percentage compared to the process part of the final grade.

Discussion

Summary of Main Findings

This study aimed to investigate student preferences for assessment methods regarding collaborative learning, what methods they perceive as fair and whether their preference could be influenced by their ability to regulate their learning on an individual (SRL) and collective level (SSRL). The main finding of this study shows that students prefer to be assessed by a combined assessment of both SA and PA with a group grade. By combining SA and PA, respondents reported it reduced over-estimation of your own effort when your self-evaluation is compared to the evaluation others gave you. This might prevent free-riding and motivate group members to equally contribute to the project, as that will influence their final grade. Therefore, weighing the evaluation of group members with the assessment by a teacher, a more nuanced outcome will be created, as the teacher does not see the whole process of the collaboration. Furthermore, even though a group grade showed the highest fairness ratings, combined assessment received similar high ratings of perceived fairness. Combining SA and PA provides the opportunity to properly reflect individual contributions during CL (Ion et al., 2023; Ma et al., 2018), which increased students' perceived fairness. Subsequently, students reported that both the process and product parts should be considered for the final grade. The process was overall slightly stated to be more important compared to the product, since the collaborative part of CL greatly influences the outcome of the collaboration. However, the product should not be left out, as this represents the result of CL.

When looking at the findings of SRL and SSRL in relation to the preferred assessment methods, it is more difficult to draw a conclusion. Regardless of the different scenarios with varied levels of SRL and SSRL, students still chose combined assessment most frequently, indicating no significant influence of regulation on assessment preferences. However, despite the lack of significant outcomes, some findings do point to the preference for combined assessment in students with higher self-rated SSRL levels. Ongoing research on regulation of learning and assessment support the relationship between SA and SRL, providing evidence for SSRL evolving through SRL, and the relationship between PA and SSRL, through which SRL can be developed (Panadero et al., 2016; Silva et al., 2023). Therefore, it could be suggested that SA and PA are associated with improving SRL and SSRL skills. This potentially implies that students who possess these skills might prefer combined assessment of SA and PA, as they benefit from these methods in their learning.

Limitations

Sample size and bias

Firstly, the results are to be interpreted with caution, due to the small sample sizes of the different subgroups, i.e. based on the options chosen for assessment methods in response to each vignette. These interpretations, of both the quantitative and qualitative findings, may therefore not display valid outcomes (Falchikov & Goldfinch, 2000).

Cronbach's alpha

A significant limitation concerns the mean variables computed from the SRL and SSRL items. The items were written based on the conceptualization of Zimmerman's model and additional literature to capture the concepts of SRL and SSRL into two scales. Panadero and Järvelä (2015) pointed out that there seem to be considerable differences in the way authors define the social aspects of regulated learning, such as self-regulation, co-regulation, socially shared regulation, but also other regulation, high-level co-regulation, shared metacognition, and self in social setting regulation. Despite recent theoretical and empirical discussions about the conceptualizations, there is still a lack of congruity (Panadero & Järvelä, 2015).

Furthermore, since this study used a heterogenous group of students from different schools and faculties, there could be a substantial difference in perceptions and therefore answers on these items, while a more homogenous group of similar students may have provided more similar scores. This may have contributed to the low Cronbach's alpha scores for the two scales. Improvement of these items is therefore needed in future research to achieve higher internal consistency of the scales.

Personal experiences

Moreover, fictitious scenarios were used in this study, where it was explicitly stated that respondents did not choose their group members, meaning they were not necessarily friends. However, some respondents may still have answered the survey with consideration of their own experiences. Many factors play a role in the collaboration process that can influence the group dynamics, such as friendship, emotional security, or interdependence. Respondents may have related to these factors in the vignettes, which might have affected the outcomes of this study. Additionally, Panadero and Järvelä (2015) suggested that these factors might be crucial for the activation of SSRL strategies within groups. This could imply that the social dynamics of a group might hinder SSRL to occur, resulting in inadequate findings as it is unclear whether these factors may have influenced the respondents' answers.

Self-reports

Another limitation lies in its reliance on self-reported ratings from surveys, which asked students to self-rate their SRL and SSRL. While these self-reports provide valuable insights, they do not capture the real-time dynamics and complexities of regulation in collaborative learning environments. As stated by Järvenoja and colleagues (2019), understanding how regulation emerges and evolves in actual group situations requires analyzing multiple layers of interaction, which is hardly possible through self-reports. This is also emphasized by other studies such as Järvenoja (2018) and Järvelä (2016) that demonstrate the use of video analysis to reveal the intricate processes of regulation (Järvenoja et al. 2019). Therefore, future research could incorporate real-time data collection methods, such as video analysis, to better understand these regulatory processes in group learning contexts.

Implications

The importance of adequate assessment methods in CL that effectively measure and grade individual contributions cannot be overstated. It not only increases students' perceived fairness of grading but also enhances their motivation and effort towards academic tasks, leading to greater engagement and satisfaction among group members (Falchikov & Goldfinch, 2000; Ma et al., 2018; Rojas et al., 2022). Moreover, increasing research on AfL practices such as SA and PA is necessary to enhance knowledge on their successful implementation in CL settings. A deeper understanding of these assessment methods can provide valuable support to teachers who face challenges in involving students in the assessment process (Panadero et al., 2016). Ensuring fair grades is crucial for a positive group dynamic and reducing social loafing. High levels of SSRL have been associated with reduced social loafing (Shao et al., 2023), highlighting the importance of understanding regulatory processes that take place during CL on both individual and group levels (Järvelä & Hadwin, 2013). Links between AfL practices and regulation of learning have been made, providing insights in the effects of SA and PA on the development of SRL and SSRL skills (De Wever et al., 2011; Falchikov & Goldfinch, 2000; Ma et al., 2018; Panadero et al., 2016; Strijbos & Sluijsmans, 2010; Topping, 1998).

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Appendix A

Information Letter and Informed Consent

English version

March 8th, 2024

Dear student,

During your academic studies, so-called "collaborative learning", also known as "group work", plays a major role. For example, students work together on a project or a research report. The final grade for a course (or part of it) is often based wholly or partly on an assessment of the group work, but there are large differences in the way this is done.

In order to find out more about how students experience the assessment of group work, students at Dutch higher education institutions are questioned in this study. This concerns a broad survey among students of different years and faculties.

What does participating in the study mean for you?
By means of a survey, we examine how students from different faculties experience the assessment of group work. You will be presented with sketches of fictitious situations, asked to imagine yourself in that situation and indicate how you would experience that situation, and particularly the assessment of group work. Completing the survey takes about 15 minutes.

*Consent**
Prior to the study, you will be asked to indicate that you agree to participate in the study. Participation is completely voluntary and you can stop at any time. Even once you have already started, but prefer to stop, you can do so.

Use and storage of data
All answers given while answering the survey will be treated confidentially. This means that your survey and your answers are kept secure and that only the researchers can see the completed surveys.

The Qualtrics programme automatically collects the IP address of the person completing the questionnaire, but this information will be deleted immediately at the start of data processing. This means that the research results can never be traced back to you.

Your rights
If you no longer wish to participate in the study, you can indicate this to the researchers by contacting the project leader. Your data will then be removed from the data files. This is possible until the data are analyzed from 12 April 2024. If you have any questions about privacy, you can also contact the researchers. If the researchers cannot answer your question, you can submit it to the Data Protection Officer of the University of Groningen (via privacy@rug.nl).

In need of more information?
If you would like to know more about the study, please contact the undersigned.
With kind regards, on behalf of the research team,

Laura van der Bij
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Prof. dr. Jan-Willem Strijbos
Rijksuniversiteit Groningen
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*Informed consent is asked at the start of the survey.

Dutch version

GION
ONDERWIJS/ONDERZOEK

8 Maart 2024

Beste student,

Tijdens je studie speelt zogenaamd “samenwerkend leren”, ook bekend als “groepswerk”, een grote rol. Hierbij werken studenten bijvoorbeeld gezamenlijk aan een project of een onderzoeksverslag. Het eindcijfer voor een cursus (of onderdeel) is regelmatig geheel of deels gebaseerd op een beoordeling van het groepswerk, maar er zijn grote verschillen in de manier waarop dit gebeurd.

Om meer te weten te komen over hoe studenten de beoordeling van groepswerk ervaren, worden in dit onderzoek studenten aan Nederlandse hogescholen en universiteiten bevraagd. Dit betreft een brede bevraging onder studenten van verschillende jaargangen en faculteiten.

Wat betekent deelname aan het onderzoek voor jou?
Via een vragenlijst wordt nagegaan hoe studenten van verschillende faculteiten de beoordeling van groepswerk ervaren. Je krijgt fictieve situatieschetsen te zien, wordt gevraagd om jezelf in die situatie te verplaatsen en aan te geven hoe je die situatie zou ervaren, in het bijzonder de beoordeling van groepswerk. Het invullen van de vragenlijst duurt ongeveer 15 minuten.

*Toestemming**
Voorafgaand aan het onderzoek word je gevraagd om aan te geven dat jij toestemt aan het onderzoek mee te doen. Meedoen is helemaal vrijwillig en je kunt op ieder moment stoppen. Zelfs als je al begonnen bent, maar liever wilt stoppen, kun je dat doen.

Gebruik en bewaren van gegevens

Alle antwoorden die je geeft tijdens het beantwoorden van de vragenlijst, worden vertrouwelijk behandeld. Dit betekent dat de vragenlijst en antwoorden beveiligd worden bewaard en dat alleen de onderzoekers de ingevulde vragenlijsten kunnen zien.

Het programma Qualtrics verzameld automatisch het IP-adres van degene die vragenlijst invult, maar deze informatie zal bij aanvang van de dataverwerking meteen verwijderd worden. Dit betekent dat de onderzoeksresultaten nooit naar jou te herleiden zijn.

Jouw rechten
Als je niet langer wilt meedoen met het onderzoek, kun je dit aangeven bij de onderzoekers, door contact op te nemen met de projectleider. Jouw gegevens worden dan verwijderd uit de databestanden. Dit is mogelijk tot aan het moment dat de gegevens geanalyseerd worden (vanaf 12 april 2024). Als je vragen hebt over privacy, kun je ook contact opnemen met de onderzoekers. Mochten de onderzoekers je vraag niet kunnen beantwoorden dan kan je deze voorleggen aan de Functionaris Gegevensbescherming van de Rijksuniversiteit Groningen (via privacy@rug.nl).

Behoefte aan meer informatie?
Mocht je meer willen weten over het onderzoek, dan kun je contact opnemen met ondergetekende.

Met vriendelijke groet, namens het onderzoeksteam,

Laura van der Bij
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*Toestemming wordt gevraagd aan begin van de vragenlijst.

Appendix B

List of survey items

English version

Item	Question	Type	Answer options
	Demographic items		
D1	"How old are you?"	Open-ended	
D2	"Are you studying at a college or university?"	Closed-ended	College University
D3	"What is the level of your current academic program?"	Closed-ended	Bachelor Master
D4	"What is your current year of study (combined for bachelor and master if applicable)?"	Closed-ended	1 2 3 4 5+
D5	"What is the name of your faculty?"	Open-ended	
D6	"Are you a Dutch or an International student?"	Closed-ended	Dutch International
	General perceptions items		
Q1	"I enjoy collaborating in a group for an assignment."	Rating scale	0 – Fully disagree 10 – Fully agree
SRL			
Q2	"I am capable to set specific goals for my learning tasks."	Rating scale	0 – Fully disagree 10 – Fully agree
Q3	"I struggle to effectively plan and organize my study time."	Rating scale	0 – Fully disagree 10 – Fully agree
Q4	"I am capable of monitoring my progress toward achieving learning goals."	Rating scale	0 – Fully disagree 10 – Fully agree
Q5	"I possess strategies to overcome distractions while studying."	Rating scale	0 – Fully disagree 10 – Fully agree
Q6	"I am capable in adapting my learning strategies based on feedback and outcomes."	Rating scale	0 – Fully disagree 10 – Fully agree
SSRL			
Q7	"I feel uncomfortable collaborating with peers to achieve learning goals."	Rating scale	0 – Fully disagree 10 – Fully agree
Q8	"I am open to sharing my learning strategies and resources with peers."	Rating scale	0 – Fully disagree 10 – Fully agree

Q9	"I value the input and perspectives of peers in our collaborative learning activities."	Rating scale	0 – Fully disagree 10 – Fully agree
Q10	"I am hesitant to provide support and assistance to peers in their learning process."	Rating scale	0 – Fully disagree 10 – Fully agree
	General preferences for assessment methods		
Q11	"In the case of group work, the collaborative process should be assessed by self-assessment."	Rating scale	0 – Fully disagree 10 – Fully agree
Q12	"In the case of group work, the collaborative process should be assessed by peer assessment."	Rating scale	0 – Fully disagree 10 – Fully agree
Q13	"In the case of group work, the collaborative process should be assessed by peer assessment in combination with self-assessment."	Rating scale	0 – Fully disagree 10 – Fully agree
	Vignette items		
Q14 A-D	"Based on this scenario, which assessment method would you prefer?"	Closed-ended	1 - Group grade 2 - Group grade with self-assessment 3 - Group grade with peer assessment 4 - Group grade with combined assessment
Q15 A-D	"Please explain briefly why you choose this assessment method (max. 100 words)."	Open-ended	
Q16 A-D	"How fair do you perceive the assessment method you selected in this context?"	Rating scale	0 – Fully disagree 10 – Fully agree
Q17 A-D	"Please briefly justify your rating of fairness (max. 100 words)."	Open-ended	
Q18 A-D	"Please indicate what you think the percentage should be for both the process and product part of the overall grade respectfully (total must be 100%)."	Constant sum	% for product part % for process part Total grade is 100%
Q19 A-D	"Please explain briefly why you chose this distribution of percentages (max. 100 words)."	Open-ended	

Dutch version

Item	Vraag	Type	Antwoord opties
	Demografische items		
D1	"Hoe oud ben je?"	Open vraag	
D2	"Studeer je aan een hogeschool of universiteit?"	Gesloten vraag	Hogeschool Universiteit
D3	"Wat is je academische niveau?"	Gesloten vraag	Bachelor

			Master
D4	"Wat is je studiejaar (gecombineerd voor bachelor en master indien van toepassing)?"	Gesloten vraag	1 2 3 4 5+
D5	"Wat is de naam van jouw faculteit?"	Open vraag	
D6	"Ben je een Nederlandse of internationale student?"	Gesloten vraag	Nederlands Internationaal
	Algemene percepties items		
Q1	"Ik vind het leuk om met een groep samen te werken aan een opdracht."	Schaal	0 – Volledig oneens 10 – Volledig eens
SRL			
Q2	"Ik kan specifieke doelen stellen voor mijn leertaken."	Schaal	0 – Volledig oneens 10 – Volledig eens
Q3	"Ik heb moeite met het effectief plannen en organiseren van mijn studietijd."	Schaal	0 – Volledig oneens 10 – Volledig eens
Q4	"Ik ben in staat om mijn vooruitgang in het bereiken van leerdoelen te volgen."	Schaal	0 – Volledig oneens 10 – Volledig eens
Q5	"Ik beschik over strategieën om afleidingen te overwinnen en de focus te behouden tijdens het studeren."	Schaal	0 – Volledig oneens 10 – Volledig eens
Q6	"Ik ben vaardig in het aanpassen van mijn leerstrategieën op basis van feedback en resultaten."	Schaal	0 – Volledig oneens 10 – Volledig eens
SSRL			
Q7	"Ik voel mij ongemakkelijk bij het samenwerken met anderen om leerdoelen te bereiken."	Schaal	0 – Volledig oneens 10 – Volledig eens
Q8	"Ik sta open voor het delen van mijn leerstrategieën en hulpmiddelen met mijn medestudenten."	Schaal	0 – Volledig oneens 10 – Volledig eens
Q9	"Ik waardeer de inbreng en perspectieven van mijn medestudenten in onze activiteiten op het gebied van samenwerkend leren."	Schaal	0 – Volledig oneens 10 – Volledig eens
Q10	"Ik aarzel om steun en hulp te bieden aan mijn medestudenten in hun leerproces."	Schaal	0 – Volledig oneens 10 – Volledig eens
	Algemene voorkeuren voor beoordelingsmethoden		
Q11	"Bij een gezamenlijke opdracht moet het samenwerkingsproces worden beoordeeld door middel van zelfbeoordeling."	Schaal	0 – Volledig oneens 10 – Volledig eens
Q12	"Bij een gezamenlijke opdracht zou het samenwerkingsproces moeten worden beoordeeld door	Schaal	0 – Volledig oneens 10 – Volledig eens

	middel van groepsbeoordeling."		
Q13	"Bij een samenwerkingsopdracht zou het samenwerkingsproces moeten worden beoordeeld door middel van groepsbeoordeling in combinatie met zelfbeoordeling."	Schaal	0 – Volledig oneens 10 – Volledig eens
	Vignette items		
Q14 A-D	"Aan welke beoordelingsmethode zou je, op basis van dit scenario, de voorkeur geven?"	Gesloten vraag	1 - Groepscijfer 2 - Groepscijfer met zelfbeoordeling 3 - Groepscijfer met groepsbeoordeling 4 - Groepscijfer met gecombineerde beoordeling
Q15 A-D	"Leg kort uit waarom je voor deze beoordelingsmethode kiest (max. 100 woorden)."	Open vraag	
Q16 A-D	"Hoe eerlijk vind je deze methode in deze context?"	Schaal	0 – Fully disagree 10 – Fully agree
Q17 A-D	"Motiveer kort je beoordeelde eerlijkheid voor deze beoordelingsmethode (max. 100 woorden)."	Open vraag	
Q18 A-D	"Geef aan wat volgens jou het percentage moet zijn voor zowel het proces- als het productgedeelte van het totaalcijfer (het totaal moet 100% zijn)."	Constante som	% for product part % for process part Total grade is 100%
Q19 A-D	"Leg kort uit waarom je voor deze verdeling van percentages hebt gekozen (max. 100 woorden)."	Open vraag	

Appendix C

Reliability Analysis

Cronbach's Alpha for SRL and SSRL scales

Scale	Items	Cronbach's alpha	Alpha if item excluded
Self-Regulated Learning (SRL)		.549	
	Q2 – Goal setting		.439
	Q3 – Planning		.596
	Q4 – Monitoring		.425
	Q5 – Management		.495
	Q6 – Adaptation		.510
Socially Shared Regulation of Learning (SSRL)		.510	
	Q7 – Collaboration		.418
	Q8 – Coordination		.419
	Q9 – Communication		.476
	Q10 – Support		.429

Appendix D

Vignettes

English version

Vignette A

High degrees of SRL and SSRL

For this survey you are asked to imagine being a student in the following context:

You work together with three other students on a group project for your study. In collaboration with the group members you are required to deliver a group product. You have been randomly assigned to this group, so you haven't chosen these students as group members yourself.

During the project, it is clear for all group members what each of you need to do for the project. You are all successfully monitoring and evaluating your own contribution to the assignment, while you also effectively communicate with each other to coordinate the tasks. Each member is able to check and revise their performance during the collaboration process, while also helping each other to achieve a shared understanding of the goal of the assignment.

Vignette B

Low degrees of SRL and SSRL

For this survey you are asked to imagine being a student in the following context:

You work together with three other students on a group project for your study. In collaboration with the group members you are required to deliver a group product. You have been randomly assigned to this group, so you haven't chosen these students as group members yourself.

During the collaboration process, all group members have trouble monitoring and evaluating what they have to do for the project and don't discuss this with each other. Each student lacks the ability to revise their own performance as well as the ability to communicate this with each other. The ineffective communication between the group members results in unsuccessful coordination of tasks, interfering with the goal to achieve a shared understanding of the assignment.

Vignette C

Low degree of SRL and high degree of SSRL

For this survey you are asked to imagine being a student in the following context:

You work together with three other students on a group project for your study. In collaboration with the group members you are required to deliver a group product. You have been randomly assigned to this group, so you haven't chosen these students as group members yourself.

During the collaboration process, all group members have trouble monitoring what they have to do for the project for themselves. It is difficult for each of you to check your progress and evaluate your performance on the tasks, but you do discuss this with each other. You ask your peers questions and work together to attain a shared understanding of the assignment. This results in effective collaboration to achieve shared understanding of the assignment's goal, but each member lacks the ability to structure and revise their own learning process to attain this goal.

Vignette D

High degree of SRL and low degree of SSRL

For this survey you are asked to imagine being a student in the following context:

You work together with three other students on a group project for your study. In collaboration with the group members you are required to deliver a group product. You have been randomly assigned to this group, so you haven't chosen these students as group members yourself.

During the project, it is clear for all group members what each of you need to do for the project. You are all successfully monitoring and evaluating your contribution to the assignment by checking and revising your own personal performance. However, you are not discussing this with each other. The ineffective communication results in unsuccessful coordination of tasks, interfering with the goal to achieve a shared understanding of the assignment.

Dutch version

Vignette A

Hoge mate van SRL en SSRL

Voor deze enquête word je gevraagd je voor te stellen dat je student bent in de volgende context:

Je werkt samen met drie andere studenten aan een groepsproject voor je studie. In samenwerking met de groepsleden ben je verplicht een groepsproduct op te leveren. Je bent willekeurig in deze groep ingedeeld, dus je hebt deze studenten niet zelf als groepsleden gekozen.

Tijdens het project is het voor alle groepsleden duidelijk wat ieder moet doen voor het project. Jullie monitoren en evalueren allemaal succesvol jullie eigen bijdrage aan de opdracht, terwijl jullie ook effectief met elkaar communiceren om de taken af te stemmen. Iedereen is in staat zijn of haar prestaties te controleren en wijzigen tijdens het samenwerkingsproces, terwijl jullie elkaar ook helpen om tot een gedeeld begrip van het doel van de opdracht te komen.

Vignette B

Lage mate van SRL en SSRL

Voor deze enquête word je gevraagd je voor te stellen dat je student bent in de volgende context:

Je werkt samen met drie andere studenten aan een groepsproject voor je studie. In samenwerking met de groepsleden ben je verplicht een groepsproduct op te leveren. Je bent willekeurig in deze groep ingedeeld, dus je hebt deze studenten niet zelf als groepsleden gekozen.

Tijdens het samenwerkingsproces hebben alle groepsleden moeite met het monitoren en evalueren van wat ze voor het project moeten doen en bespreken ze dit niet met elkaar. Elke student mist het vermogen om zijn of haar eigen prestaties te controleren en het vermogen om dit met elkaar te communiceren. De ineffectieve communicatie tussen de groepsleden resulteert in een mislukte coördinatie van taken, waardoor het doel om een gedeeld begrip van de opdracht te bereiken wordt belemmerd.

Vignette C

Lage mate van SRL en hoge mate van SSRL

Voor deze enquête word je gevraagd je voor te stellen dat je student bent in de volgende context:

Je werkt samen met drie andere studenten aan een groepsproject voor je studie. In samenwerking met de groepsleden ben je verplicht een groepsproduct op te leveren. Je bent willekeurig in deze groep ingedeeld, dus je hebt deze studenten niet zelf als groepsleden gekozen.

Tijdens het samenwerkingsproces hebben alle groepsleden moeite om voor zichzelf te controleren wat ze voor het project moeten doen. Het is voor ieder van jullie lastig om je voortgang te controleren en je prestatie op de taken te beoordelen, maar je bespreekt dit wel met elkaar. Je stelt vragen aan je medestudenten en werkt samen om tot een gedeeld begrip van de opdracht te komen. Dit resulteert in effectieve samenwerking om een gedeeld begrip van het doel van de opdracht te bereiken, maar elk lid mist het vermogen om zijn eigen leerproces te structureren en wijzigen om dit doel te bereiken.

Vignette D

Hoge mate van SRL en lage mate van SSRL

Voor deze enquête word je gevraagd je voor te stellen dat je student bent in de volgende context:

Je werkt samen met drie andere studenten aan een groepsproject voor je studie. In samenwerking met de groepsleden ben je verplicht een groepsproduct op te leveren. Je bent willekeurig in deze groep ingedeeld, dus je hebt deze studenten niet zelf als groepsleden gekozen.

Tijdens het project is het voor alle groepsleden duidelijk wat jullie moeten doen voor het project. Jullie monitoren en evalueren allemaal met succes je eigen bijdrage aan de opdracht door je persoonlijke prestaties te controleren en wijzigen. Je bespreekt dit echter niet met elkaar. De ineffectieve communicatie resulteert in een mislukte coördinatie van taken, waardoor het doel om een gedeeld begrip van de opdracht te bereiken wordt belemmerd.