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Regulation of Emotions in Socially Challenging Learning Situations: an Instrument to Measure the Adaptive and Social Nature of the Regulation Process

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Abstract

Self-regulated learning research has conventionally relied on measures, which treat SRL as an aptitude. To study self-regulation and motivation in learning contexts as an ongoing adaptive process, situation-specific methods are needed in addition to static measures. This article presents an ‘Adaptive Instrument for Regulation of Emotions’ (AIRE) aimed at accessing students’ experiences of individual and socially shared regulation of emotions in a socially challenging learning situation. The instrument, grounded in self and socially regulated learning theory, comprises four interrelated components: the socio-emotional challenges experienced in a collaborative learning situation; individual and group-level attempts to regulate the immediate emotions evoked by the challenges; and the personal goals and their attainment pursued in that situation. The theoretical foundation of the instrument and its components are outlined and some reliability issues illustrated. The limitations but also educational potential of the instrument to understand regulation of emotions in socially challenging learning situations are discussed.

Keywords: collaborative learning, regulation of emotions, self-regulation, socially shared regulation

Introduction

Over the last decades research on self-regulated learning (SRL) has consolidated its position as a major theoretical approach to integrating the cognitive, motivational and social components of learning (Schunk & Zimmerman, 2008). A number of measurement protocols have been used, ranging from self-reports to observations of performance in an attempt to identify the different aspects and areas of SRL (Zimmerman, 2008). Predominantly, however, SRL research has tended to rely on survey measures, which treat SRL as an aptitude. Yet, recognition of the need to study self-regulation and motivation in learning contexts and as an ongoing process that develops over time is growing (Järvelä, Volet, & Järvenoja, 2010). This approach requires studies, which treat SRL as adaptive to different conditions, and reveal how learners regulate their cognition, motivation and emotions during learning tasks and across different situations (Winne & Hadwin, 2008; Zimmerman, 2008). Moreover, interest in the shared regulatory processes that can be observed

within groups that demonstrate evidence of genuine collaboration has set new challenges for SRL research and in turn called for innovative ways to study these processes. This means that researchers need to complement traditional methods of studying SRL, with approaches that treat self-regulation as a set of concurrent and reciprocal individual and social processes that unfold over time, and can vary across different situations. Hadwin, Järvelä, & Miller (2011) claim that there has been only few attempts to measure SRL as an event. Hence, the aim of this paper is to introduce an instrument which offers an adaptive way to measure learners' regulation within and across real-life, student-led collaborative learning situations. A critical feature of this instrument is its potential to be adapted to the unique personal and contextual circumstances of different situations where students employ regulation processes.

To date, research on SRL strategies seems to have concentrated on the development of either inventories to elicit students' own reports of using such strategies (e.g.) or observation schedules aimed at inferring the use of such strategies from classroom interactions (Boekaerts & Cascallar, 2006; McCann & Garcia, 1999; Meyer & Turner, 2002). The first approach, *the use of inventories*, is consistent with the idea that regulatory strategies are part of individuals' capacities and dispositions towards completing academic tasks. This approach has produced a large body of research findings, which support the assumption that SRL represents goal-oriented action, where learners are agents with the capacity to monitor, control and regulate their own cognition, motivation and behaviour (Pintrich, 2004). Although this approach recognises that regulatory activities play a mediating role between personal and contextual characteristics, it is grounded in an implicit assumption that SRL is a relatively stable aptitude - albeit slowly developing, over years of academic study and participation in more autonomous forms of learning. This approach does not capture the significance of adaptive individual and social context dimensions in the regulation process (Nolen & Ward, 2008).

In contrast, the second approach, which focuses on *analyses of classroom interactions and self-regulatory behaviours*, directly aims at capturing these dynamic dimensions. A major limitation of this approach, however, is that data collection and analysis are extremely challenging and time-consuming. As a consequence, empirical work is limited to illustrative case studies. These have typically involved classroom observations followed by stimulated recall interviews with probing for students' interpretations of their observed behaviours. While producing rich, "thick" data (Stake, 1995), this approach also presents limitations for examining the range of social challenges that may be experienced and regulated during a real-life social learning activity. This is because such phenomena may not always be visible to an observer, even though they might be experienced as critical turning points for subsequent participation in the activity.

Overall, neither approach seems to have generated suitable methods for systematic investigations of the interplay between individual and social regulatory processes within a collaborative learning activity. More adaptive and situation-specific instruments are needed for this purpose and these may require the combination of qualitative analyses with traditional self-report instruments, and more in-depth and focused case studies (Butler, 2002). Recently, a range of alternative innovative ways of accessing various aspects of self-regulatory processes "on-the-fly" (Boekaerts & Cascallar, 2006) have been proposed. For example, Winne et al. (2006) have developed software application called gStudy, which collects detailed traces of students' cognitive operations during study activity. In the analyses, these log-data traces are used to characterise patterns of self-regulated study activities. gStudy, as well as other approaches that employ on-line measures to track students' thoughts, feelings and actions as they occur during self-regulated learning (e.g. Ainley & Hidi, 2002; Ainley & Patrick, 2006), present promising ways of assessing self-regulation as a process. In all that work, however, the focus is on the individual as the only unit of analysis.

The instrument presented in this article aims to provide a measure of the adaptive nature of individual and collective emotion regulation in socially challenging learning situations. This instrument, called ‘Adaptive instrument for Regulation of Emotions’ (AIRE), is designed to access students’ experience of individual and socially shared regulation of emotions in a specific group learning activity that they are currently engaged in. The emphasis is on the socio-emotional aspects of SRL processes as experienced in the context of that specific real-life situation.

The article is divided into two parts. The first part elaborates on two critical theoretical ideas underlying the instrument, namely, self and socially regulated learning in collaborative learning activities, and regulation of emotions as an integral part of self and socially regulated learning. The second part presents the instrument focusing on the conceptual underpinnings and some reliability issues related to each component. The article concludes with a brief summary of the rationale for developing this instrument and examples of its use in empirical studies as illustrations. In the end overall conceptual characteristics and limitations of the instrument, as well as some reflections on its potential educational benefit for enhancing students’ metacognitive reflection are also presented

Building Theory for The Adaptive Instrument for Regulation of Emotions (AIRE)

Many researchers would agree that individuals’ emotions and motivation are formed at the interface of personal, contextual and social aspects (Ainley & Hidi, 2002; Nolen & Ward, 2008; Turner, 2001). However, social learning situations and open learning tasks that aim at shared knowledge construction are typically more challenging than conventional and well-structured learning situations. This assumption was supported in recent research (Volet, Summers, & Thurman, 2009a) showing that even high achieving university students display minimal spontaneous engagement in high-level co-regulation of learning. In order to maintain co-ordinated activities within a group, participants have to overcome the challenges that emerge due to the social nature of the situation (in addition to those experienced in any learning setting) (Järvenoja & Järvelä, 2005). In collaborative learning situations, it is not sufficient for students to try to adjust and prioritize their own multiple personal goals (Wosnitza & Volet, 2009). Given they are engaged in a collaborative learning situation, students also have to take into consideration each other’s goals. This means further adjusting their own goals to fit the shared goals that the group decides to pursue. Researching self-regulation in such contexts presents further challenges, as it requires a re-definition of regulation of motivation and emotions in terms of how these may be socially constructed. In turn, this also means finding new methods for studying regulation processes that may be shared among some group members or within the group as a whole (Järvelä et al., 2010).

Before presenting the conceptual underpinnings of the Adaptive Instrument for Regulation of Emotions, we clarify how social interaction is part of self-regulation and what is the place of regulation of emotions in self-regulated learning.

Self- and Socially Regulated Learning in Collaborative Learning Situations

In the educational literature, *self-regulation* refers to the executive aspects of metacognition that are activated when students master their own learning by taking charge of their own performance (Flavell, Miller, & Miller, 1993). Most of the contemporary definitions of SRL are based on a socio-cognitive perspective and are relatively extensive, encompassing individuals’ cognitive and metacognitive actions, motivation and affect. Definitions of SRL have evolved over time, and now widely recognise the significance of context and social interaction (e.g. Schunk & Zimmerman, 2008). The process of SRL is conceptualised as not only involving learners’ striving to control the

conditions and context of learning but as reciprocally regulated by the contextual circumstances that can enhance or inhibit SRL (Butler, 2002). Hence an effective self-regulated learner is expected to be motivated to engage in learning, and able to strategically plan and reflect on the learning process in order to sustain motivation and control emotions that emerge within the social context and may interfere with the process of learning.

Overall, and despite their acknowledgment of the social context, socio-cognitive models of SRL still tend to treat the regulation of learning as an individual process. In classroom contexts the interactions between students, or a student and a teacher, are assumed to play a mediating role in individuals' self-regulation. Yet, although it is recognised that an individual's engagement and regulation processes can be shaped by others, the possibility that a group of people may control and regulate their learning together, as a shared process, has received less attention in the constantly evolving models of SRL. With collaborative learning gradually taking centre stage in the field of learning research, examining the challenges to individuals' productive engagement in student-led activities has become essential. In recent years there has been growing interest in explaining the role of the social context and social interactions in SRL, including a shift from a social influence perspective, i.e. one social variable affecting individual self-regulation, to a perspective that recognises that SRL occurs in a social context as part of social interaction (Corno & Mandinach, 2004; Hadwin, Oshige, Gress, & Winne, 2010; Järvelä et al., 2010).

The early socio-cognitive models viewed others as influencing individual SRL through external feedback or as one aspect of the context. In contrast, models influenced by Vygotsky's ideas (e.g. Hadwin, Wozney, & Pontin, 2005; Meyer & Turner, 2002) have emphasised how the demands and responsibilities of learning with others can be conceptualised as co-regulated. For Hadwin et al., (2005) *co-regulation of learning* refers to regulatory instances that occur in-between "teacher-directed regulation" and "student-directed regulation" of learning or SRL. In those instances, more capable others share the regulation responsibility with a less able individual. To capture the idea that the process is not uni-directional but co-regulated, Hadwin et al. (2005) point to a combination of both teacher guidance and students' requests. Consistent with a Vygotskian perspective, it is expected that the responsibility for the regulatory activities is gradually transferred through scaffolded guidance, from more able to less able individuals. In such instances, therefore, responsibility for regulation is viewed as co-regulated but not equally shared.

In other social learning situations, such as student-led collaborative learning activities, the situation is different as partners are assumed to have egalitarian status. Recent theoretical discussions in the field of collaborative learning research, supported by the results of several studies, have stressed the critical role of motivational and emotional processes in successful collaboration (Järvelä et al., 2010; Van den Bossche, Segers, & Kirschner, 2006). There is growing support for the view that the socio-emotional aspects of the collaborative process contribute to enhanced interaction and communication, and to engagement in co-construction of knowledge through effective concurrent self- and co-regulation. In collaborative learning, group members are encouraged to co-construct their goals and to jointly maintain engagement within the group in an autonomous way. To build a shared conception of the task and engage in the co-construction of knowledge, group members need to at least co-operate, and ideally collaborate in joint interactions. In such situations, individual goals and self-regulatory processes operate within a complex and dynamic network of socially mediated factors that include peers' and group goals (Jackson, McKenzie, & Hobfoll, 2000). As they interact with others in a collaborative learning activity, individuals not only continue to self-regulate but they simultaneously contribute to co-regulate the collective activity. As argued by Volet, Vauras, and Salonen (2009b), regulation in social learning situations involves concurrent adaptive processes of self-regulation and co-regulation, which can extend to genuinely shared

regulation. This concurrent process is essential for understanding students' engagement and participation in social learning contexts (Järvelä et al., 2010). In order to conceptualise how regulation processes operate in collaborative learning situations, three specific regulatory processes are considered, namely, *self-regulation*, *co-regulation*, and *socially shared regulation*. The concept of *Self-regulation* is solidly grounded in the mainstream socio-cognitive perspective. In the context of learning, it is conceptualised as an individual process where a person regulates their engagement in a learning activity as a way of adapting to the task and contextual constraints with a view to achieving their personal goals (see e.g. Winne & Hadwin, 2008; Zimmerman, 2008). Self-regulated learning is a well established concept with substantial empirical support from developmental as well as intervention research.

In contrast, the concept of *Co-regulation* is not yet well established in the literature on learning. Traditionally, research on co-regulation is grounded in a socio-cultural approach and involves a student and another person sharing in the regulation of the student's learning (Butler, 2002; Hadwin et al., 2010). From this perspective *co-regulation* represents various forms of scaffolding aimed at transferring the responsibility of regulating the learning process from other (typically a teacher or a more capable peer) to self (learner) regulation. For the purpose of understanding regulation of emotions in socially challenging learning situations, in this paper co-regulation is framed within an individual-in-context perspective (Järvelä & Volet, 2004). It represents the bi- or multi-directional interactions that take place among group members, and the different degrees of reciprocity with respect to the mediating role that individuals play in each other's learning and the co-construction of knowledge (Volet et al., 2009b). Co-regulation can refer to individuals' various attempts to affect each other's motivation, emotional state, cognitive actions etc. for their own purpose or others' benefit, or alternatively to co-ordinate their actions for a shared purpose.

Finally, *Socially shared regulation*, a term coined by Vauras, Iiskala, et al., (2003) represents a special case of co-regulation, where several individuals regulate their collective activity in a genuinely shared way (Hadwin et al., 2010). This form of social regulation is also consistent with the situative learning perspective, inspired by Greeno (2006), focusing on the group as the unit of analysis (Nolen & Ward, 2008). Instances of socially shared regulation of learning refer to group processes that reflect clear evidence of commitment to a shared goal and genuine co-construction of knowledge or shared problem solving. Both co-regulation and socially shared-regulation represent social forms of regulation, and highlight the mediating role of individual agency and adaptation in context (Järvelä et al., 2010; Volet et al., 2009b).

Regulation of emotions as an integral part of self and socially regulated learning

As widely documented in the educational literature, groups can face multiple types of challenges in collaborative learning situations (Blumenfeld, Marx, Soloway, & Krajcik, 1996; Salomon & Globerson, 1989; Webb & Palincsar, 1996). Many of these challenges relate to social dynamics, and can range from perceived incompatibilities of personality characteristics to emerging problems in social relationships and collaborative activities (Burdett, 2003; Järvenoja & Järvelä, 2005; Volet & Mansfield, 2006). Regardless of their source, the emotions generated by social challenges have to be attended to, because coping with emotional pressure is critical to restoring well-being, maintaining motivation, engaging in productive collaboration, and ultimately ensuring goal achievement within the group (Efklides & Volet, 2005; Järvenoja & Järvelä, 2009). However, as Crook (2000) points out, how students regulate their emotions during collaborative learning activities is not well understood. Exploring this phenomenon is particularly challenging due to limited visibility of emotional arousal and the regulatory process (Pekrun, Goetz, Titz, & Perry, 2002; Schutz, Hong, Cross, & Osbon, 2006). Nevertheless, it is critical to gain insight into how the

dynamics of collaborative learning are managed, and why collaborative learning can sometimes lead to undesirable outcomes.

It is only in the last decade that self-regulation research has started to pay attention to regulation of emotions, yet mainly at the individual level (Boekaerts, 2011). According to Wolters (2003), the regulatory process is directed at the emotional experiences evoked during the learning process and aims at ensuring that the individual stays focused and motivated to complete the academic task. Regulation of emotions has often been conceptualised as a part of regulation of motivation (Pintrich, 2000), although some have treated the two as conceptually separate but inter-related processes within the larger system of self-regulation (Schutz, Distefano, Benson, & Davis, 2004). Based on the extant literature, learners can use a number of strategies to control their emotions with a view to maintaining their engagement and well-being (Corno & Mandinach, 2004; McCann & Garcia, 1999). These include *self-talk* or *inner speech* strategies, which are aimed at controlling negative affect and anxiety, *defensive pessimism*, which is used to control negative emotions in order to increase effort and performance and *self-affirmation*, which seeks positive evaluations of the self in order to avoid negative emotional experiences (Pintrich, 2004).

In addition to the strategies aimed at controlling negative emotions, there are also strategies that involve individuals' attempts to simultaneously control their affective state and their motivation (e.g. efficacy or value). In academic settings, regulation of emotions can be treated as an integral part of self-regulated learning if the aim is to maintain an appropriate emotional atmosphere in order to complete the learning task (Efklides & Volet, 2005; Schutz et al., 2006; Zimmerman & Schunk, 2008). In other words, if students' personal goals are learning or mastery oriented, the function of regulating emotions is to monitor the conditions necessary for sustained motivation and cognitive engagement towards achievement. This suggests that in real-life learning situations certain strategies have multiple functions. Self-talk, for example, may control experienced emotions and maintain motivation at the same time. Wolters (2003), for example, reviewed a number of strategies for regulation of motivation. Many of those strategies have the potential to address either emotional or motivational aspects of learning. For example, *interest enhancement* is a strategy aimed at increasing immediate enjoyment (emotion) while simultaneously increasing the situational interest of the learning task. Similarly, *efficacy management* deals with students' ability to monitor, evaluate, and purposefully control their own expectations, perceptions of competence, or self-efficacy in relation to a task but it can also increase students' hope of successfully completing the task or decrease feelings of failure or shame due to not performing well.

Overall, and despite recognition that 'schooling is an emotionally laden process' (Schutz et al., 2006, p.343), little is known about how students regulate their emotions in real-life on-going learning events. Our understanding is even more limited when it comes to collaborative learning environments where socio-emotional challenges abound, and strategies to cope with emotions may have a social dimension. Almost a decade ago, Pintrich (1999, p.336) argued that "there is a need for more theory and research on how students control their ... emotions, behaviour and their environment". To date, although the significance of emotions in learning is widely acknowledged, research on the regulation of emotions in collaborative learning situations is still limited, and thus its interactive process is not well understood.

The Adaptive Instrument for Regulation of Emotions in Collaborative Learning Situations

Building on previous research and theories of SRL, in response to the growing need to study SRL as a concurrent psychological and social phenomenon, we designed an adaptive instrument for studying regulation of emotions in socially challenging collaborative learning situations. Research

on motivation and self-regulation, in particular the regulation of motivation and emotions, was reviewed (Ainley & Hidi, 2002; Azmitia, 2000; Boekaerts, 2002; McCann & Garcia, 1999; Pintrich, Smith, Garcia, & McKeachie, 1991; Schutz et al., 2004; Wolters, 2003). Ultimately, the theoretical foundation of the instrument was grounded in a combination of contemporary theories of SRL, especially regulation of motivation and emotions and former empirical work on motivation in real-life learning contexts (Järvelä et al., 2010), emotional experience in collaborative learning (Järvenoja & Järvelä, 2005) and strategies for handling socially challenging learning activities (Burdett, 2003; Garcia-Prieto, Bellard, & Schneider, 2003; Volet & Mansfield, 2006).

The aim of the Adaptive Instrument for Regulation of Emotions (AIRE) is to identify the socio-emotional challenges that students experience while they participate in a current socially challenging collaborative learning activity, and their individual and group level attempts to regulate the immediate emotions that are evoked by these challenges. More specifically, the instrument seeks to identify the task-specific challenges of a social nature, which affect group performance, and to elicit students' subjective accounts of their regulation strategies to address them. More specifically, it tries to establish whether students perceive that the socio-emotionally challenging situation was regulated in co-ordination with other group members, in addition to being an integral part of their own self-regulation. In order to better understand students' experience of socio-emotional challenges and regulation of emotions, the instrument also includes a measure of personal goals related to the group learning situation, followed by a measure of reflection on perceived goal attainment. The conceptual rationale for including goals alongside the instrument is discussed below.

The Main Concepts of the AIRE

The AIRE instrument is presented in Appendix A. Two original features of the instrument are its sensitivity to each student's unique experience and the embedded inter-relatedness of the different components of the instrument. In other words, the instrument attempts to capture the adaptive nature of the whole regulatory process, with its focus on students' subjective experience. The AIRE comprises four sections, presented in Table 1, all directly related to that activity but each focusing on a different aspect of the regulatory process: *Personal goals*, *Socio-emotional challenges*, *Regulation of emotions*, and *Reflections on perceived goal attainment*. Furthermore, each subsequent section of the instrument is sensitive to students' responses to earlier questions. Data collected with AIRE is at its best when the instrument is administered several times over a long lasting learning activity or repeated after several consecutive subtasks or group sessions in which case it can capture students' varying, situation-specific experiences.

 Insert Table 1 about here

Conventional forms of testing reliability are usually based on test-retest and internal consistency test, which measure how stable, invariable and consistent respondents' responses are. However, in regard to AIRE, neither one of these approaches to test reliability are appropriate if they are employed and interpreted conventionally (Ainley & Patrick, 2006). This is because by definition, AIRE seeks to assess what student is feeling related to a specific task and time, and thus it is assumed that these feelings and interpretations vary from situation to situation. As a consequence, instead of looking for stability and consistency between the repeated measurement points, AIRE aims to capture change in situated thoughts and feelings. In light of this, variability tests have been performed for each core section of the AIRE instrument. Variability tests can be considered appropriate for instruments measuring situation-specific responses, if the selection and

interpretation of the test results are considered case-specifically, in other words to ensure that they are consistent with the assumptions of the instrument.

Personal goals and perceived goal attainment

Section 1 of the AIRE elicits students' specific, personal goals for their current group learning activity, and Section 4 (last section) elicits their reflections on the achievement of these personal goals. The idea is to capture some personal preferences that students bring to the activity since these are assumed to have an impact on how students appraise the situation.

Consistent with SRL models focusing on individual learning, and claims of the criticality of goals in the appraisal and regulation of emotions (Schutz et al., 2006), it is assumed that in collaborative learning situations, students generate personal goals (sometimes unconsciously) that they strive to achieve as they participate in a group activity. Like the whole process of SRL, personal goals are conceptualized as situation-specific. This means that students are expected to set and adapt their goals within a situation, and that these goals may affect their motivation and efforts to regulate the learning process (Zimmerman, 2008). Furthermore, and consistent with the view that goals have both a directive and an evaluative function (Lawrence & Volet, 1991), regulation processes are needed to constantly monitor the achievement of goals or possibly change those goals. In other words, students' personal goals become their personal criteria against which to evaluate the success of the activity.

A second assumption is that even though in formal learning situations students are expected to pursue the learning and achievement goals set by their teacher or the curriculum, there is evidence that this is not always the case. Students may only partially endorse these goals and sometimes adopt other goals that they consider to be more suitable for their personal pursuit (Boekaerts, de Koning, & Vedder, 2006). Since student-led group learning activities are formally organised by teachers, it is reasonable to take for granted that all students are committed to complete the task and have the will to achieve a good outcome for themselves and the group (at least to some degree). Consistent with the argument that academic and non-academic goals can be pursued simultaneously, students may, however, have other personally important goals in addition to completing a task. The formation of personal goals can be affected, for example, by students' prior experiences of similar situations, mood, and their multi-dimensional appraisals of the learning activity, including cognitive, motivational and affective aspects. For most students the first priority is likely to be the maintenance of their well-being, which explains why personal goals often include socio-emotional goals in addition to academic goals. Furthermore, and as stressed in recent research (e.g. Boekaerts, 2002; Harackiewicz & Linnenbrink, 2005; Wosnitza & Volet, 2009) students can pursue different types of goals concurrently. These parallel multiple goals may either support or hinder students' striving towards task completion.

For flexibility of use, the AIRE does not prescribe the way of measuring personal, situation-specific goals. Instead, it is suggested that goal measures are chosen study-specifically in order to best serve the purpose and approach of that study. The examples presented in Appendix A, therefore, only offer examples of three alternative, but complementary ways for students to report on their goals: by answering an open question on their most important goals, by rating a set of goal items and/or by prioritising their two main goals (goal preferences). In some of our research, we used rating goal items that correspond to several *achievement* goals (Pintrich, 2000), also *well-being* and *social* goals (Boekaerts, 2002; Dowson & McInerney, 2003), as well as ranking goal preferences from the items. Asking students to prioritise their two most important goals is expected to provide an indication of parallel major goals.

In Section 4 the AIRE, and also intended to be sensitive to students' subjective experience of the group learning situation, students are invited to go back to the two major personal goals they identified in Section 1, and to rate the extent to which each of these has been achieved. They are also asked to reflect on whether the group played a positive or negative role in the process, and how emotionally satisfied they are with their experience of that particular group learning situation. This allows students' metacognitive reflections (Efklides, 2004) on their goal achievement to be explored, and ultimately relate students' reflections to their accounts of experiences and regulation in the specific social learning situation. One theoretical assumption underlying the notion of goal attainment is that goal intentions do not necessarily lead to their achievement. Students may fail to deal with self-regulatory problems during goal striving (Gollwitzer, 1999) thus their emotional responses to goal attainment may differ when serving fundamentally different needs (e.g. well-being vs. learning) (Higgins, Shah, & Friedman, 1997). Furthermore, students can have different views about the role of other group members in the attainment of their personal goals. A second theoretical assumption is that metacognitive reflections on goal achievement are an integral part of the self-regulated learning process and that (un)successful goal attainment evokes emotional responses which activate different judgments of one's own capacity to deal with similar tasks in the future (Efklides, 2004; Zimmerman, 2008).

Since students' personal goals can change over time, it is expected that group members' respective goals may gradually become closer to each other so that they are able to set shared goals for their group (Wosnitza & Volet, 2009). Alternatively, their goals may become more divergent and even clash, which could lead to the emergence of socio-emotional challenges within the group. The next section addresses the nature and importance of socio-emotional challenges in a group learning activity.

Socio-emotional challenges

Section 2 of the AIRE aims at determining the existence of any socio-emotional challenges, which students may have experienced during their specific group learning activity. An important assumption in SRL research is that after students have established goal-commitment in the forethought phase of learning, they move to performance, in other words, they move to the volitional phase of learning (Zimmerman, 2008). During this phase students are expected to participate in the activity in a way that contributes to the achievement of their personal goals. However, in a social learning situation, the achievement of personal goals is embedded in a multitude of possible distractions, which can impede or interfere with goal-oriented actions.

The literature has identified numerous reasons that could explain why learners may fail to successfully complete a learning task. In regard to collaborative learning, the literature suggests that a major explanatory factor may be students' subjective experience of socio-emotional challenges within the group (e.g. Crook, 2000; Van den Bossche et al., 2006). This suggests that some of the most emotionally salient challenges for students are triggered by the social nature of the learning situation. These socio-emotional challenges can relate to differences in personal priorities, styles of communicating, or ways of approaching the team work, or alternatively to diverging views of the processes that are needed to collaborate successfully. Finally, socio-emotional challenges within groups can also be created due to reasons that are external to the task or group dynamics.

In a collaborative learning situation, group members can face challenges due to differences in their respective goals, priorities and expectations (Blumenfeld et al., 1996; Van den Bossche et al., 2006). For example, some group members' pursuit of socio-emotional well-being can compete with and

overshadow the group's striving for academic success, in such a way that individual socio-emotional goals become incompatible with other members' learning and achievement goals (Boekaerts, 2002). The group can also face conflicts generated by interpersonal dynamics, especially when group members have different styles of working or when they are used to different ways of interacting and communicating. Sometimes group members' backgrounds are so different that they just do not connect well with each other (e.g. Volet & Ang, 1998). This may happen, for example, when some people's preferred communication style is very direct, and others perceive a direct approach as uncomfortable or even confrontational. Different levels of commitment or concentration, or power relationships among members could also create socio-emotional challenges and in turn affect the quality of teamwork (Burdett, 2003; Salomon & Globerson, 1989; Webb & Palincsar, 1996).

Furthermore, group members can also face socio-emotional challenges emerging from the cognitive processes required in collaborative learning. These can include cognitive conflicts between group members or difficulties in understanding each other's thinking. Joint problem solving often requires the negotiation of multiple perspectives (Feltovich, Spiro, Coulson, & Feltovich, 1996; Mäkitalo, Häkkinen, Järvelä, & Leinonen, 2002). For example, in a group discussion students may refer to the same concepts but because their understanding of those concepts may differ, what they mean could be different, even though they are using the same words. Inevitably, this creates socio-emotional challenges that need to be addressed. Finally, challenges can also be triggered by circumstances external to the task itself. For example, group members may face practical hurdles or other commitments that constrain full engagement and participation (Volet & Mansfield, 2006).

In Section 2 of the AIRE, students are presented with twelve socially challenging situations (scenarios) that cover distinct social challenges they may have encountered during their group activity (see Table 2). These scenarios were generated on the basis of the extensive empirical literature on collaborative learning and group work, some of it discussed above. The challenges featured in the 12 scenarios of Section 2 fall into five broad categories corresponding to differences in *personal priorities, styles of working and communication, team work, collaborative processes* and *external constraints*. Each scenario includes a general description of the social challenge followed by several possible concrete examples of such a challenge. Examples for a scenario dealing with collaborative processes: *"We differed in our understanding of the concepts/task. For example, we were sometimes talking about different things even though we used the same words, we had problems agreeing on what content to cover / ideas to include in our project, or, our views were very different"*.

 Insert Table 2 about here

For each scenario, students are requested to indicate, on a Likert scale from 0 to 4 (0 = It did not happen, 1= It was a small challenge, and 4= It was a big challenge), whether they experienced such a socially challenging situation during their group activity and if so, the extent to which that challenge was important. Students' attention is drawn to the fact that challenging situations can in fact be productive for group work and learning, if it is resolved successfully. Students are also requested to select which challenges triggered the strongest emotions among group members. Consistent with the sensitive nature of the AIRE, students' choice determines the specific content of the next section of the instrument, which they are asked to complete (more information below).

To examine the capacity of the AIRE instrument to capture the situated, evolving and context-sensitive nature of students' experiences in a socially challenging learning situation, a variability test-retest was undertaken for each of the 12 scenarios. This was done through correlating 63 higher education students' responses at two measurement points, two weeks apart. An earlier version of Section 2 trialled in Järvenoja & Järvelä (2009) contained more scenarios, and more challenges but some were too specific, thus discarded later. The students worked in the same group of 3-5 and responded to the AIRE immediately after a different collaborative task on both occasions. The instructions of the first task were more structured than the instructions of the latter task where the instructions were more open. However, both of the tasks emphasised that the group members should collaborate to complete the task instead of only dividing the work between the group members. The correlations presented in Table 2 reveal low to moderate inter-correlations (-.02 to .43), suggesting change in students' experiences of socio-emotional challenges. These findings provide some evidence of the AIRE instrument's capacity to measure change in momentary situation-specific experiences.

Moreover, on a concrete level, each scenario is intended to describe a socially distinct challenging situation. However, and as presented in Table 2, the twelve scenarios fall into five distinct categories of challenges and accordingly, it is expected the scenarios included within each category are conceptually close to one another since they are illustrations of the same broad construct. For example, scenarios A and B are designed to represent two concrete and discrete socially challenging situations but both belong to the construct category of personal priorities.

The extent to which the scenarios included in each construct category were internally consistent (i.e. represented the same construct) was empirically examined. This was undertaken through treating the four construct categories of social challenges as four scales (External constraints has only one item), and computing Cronbach's Alphas for each scale. This was done using the responses of the same group of 63 students, and separately for the data at the two measurement points. As can be seen in Table 3, the Cronbach's Alphas for the four construct categories were satisfactory to very good at Time 2 (.69 to .82) but were no more than satisfactory at Time 1, with Work and Commitment displaying a very low internal consistency. One may speculate that lower internal consistency at Time 1 reflects students' still fragmented experience of the group activity at that early point. The inter-correlations (Spearman's rho) between the scenarios within the thematic categories were moderate with two exceptions in both times (ranging from .0.38 to .445 in Time 1 and from .113 to .572 in Time 2).

 Insert Table 3 about here

The same variability test-retest performed at the scenario level was undertaken at the construct category level. The correlations between the two measurement points at that level were low to moderate, ranging from $r=.216$ to $r=.464$. The non-significant correlations between Time 1 and Time 2 Personal priorities and Work & Communication reflect the emerging and unpredictable nature of these types of challenges. For example, the extent to which group members' personal goals and styles of working are compatible, and whether members connect well with each other tend to vary widely across group activities, depending on the group composition. In contrast, challenges related to collaboration tend to be commonly experienced by students across groups and tasks, and therefore were expected at task onset.

Regulation of emotions

Section 3 of the AIRE focuses on the form of regulation (self-, co- socially-shared) strategies students used to control their emotions and to maintain their motivation while facing socio-emotional challenges in the specific collaborative learning activity. The aim of this section is to determine how the emotions evoked by the biggest challenges that students identified were regulated. More specifically, the aim is to establish the extent to which students used the three forms of regulation to control the emotions triggered by socio-emotionally challenging situations.

When socio-emotional challenges emerge in a group these need to be addressed in order to avoid breakdown in relationships, personal stress and task failure. This is done through regulating the emotions that are evoked and addressing the source of those challenges. Accordingly, a first assumption underlying the notion of adaptive regulation of emotions is that group members will try to control any socio-emotional challenges, not only in order to maintain a meaningful learning process and achieve their personal goals but also to sustain productive interaction with other group members and achieve the shared goals. A second assumption is that in addition to continuous self-regulation as personal adaptation to the collaborative learning situation, group members can concurrently co-ordinate and share their regulation processes. Three distinct forms of regulation can therefore be identified, namely, *self-regulation*, *co-regulation* and *socially shared regulation*. Although each form of regulation focuses on a different target (self, others, the group) they all form an integral part of the overall construct of regulation and as discussed above, can operate simultaneously (Järvelä et al., 2010; Volet et al., 2009b).

As mentioned earlier, individuals can bring different personal goals to a group learning situation, and these may vary widely, ranging from the pursuit of deep-level learning to personal well-being (Boekaerts et al., 2006). Since group members can interpret the socio-emotionally challenging situation differently, a third assumption is that needs and reasons for regulating emotions can differ. For example, in the face of serious socio-emotional challenges, if an individual's dominant personal goal is to maintain wellbeing, an option may be to disengage from the task and/or exit the group altogether, instead of feeling miserable within that group. Alternatively, if the individual's dominant personal goal is to achieve meaningful learning in collaboration with the peer group this would require addressing the socio-emotional challenges that are hindering the learning process.

Consistent with the design of the AIRE to be sensitive to students' unique experiences, 12 sets of regulation items have been created and customised (with slight modifications) to each specific socio-emotional challenge. Immediately after having identified what they perceive as the biggest group-related challenge experienced during their group activity, respondents are invited to select the set of questions on regulation of emotions that corresponds to that particular social challenge. To enhance comprehensiveness, students can be asked to select two group-related challenges. For each social challenge, a different set of items is presented. The content of each set is slightly adapted to that particular challenge, such that there are some wording differences, but not conceptual differences, across the item sets. The set of regulation items featuring in the Appendix is the one customised to Challenge A but the other sets are available from the authors.

For example, for a respondent who identified different priorities as a challenge, one item reads "*We realised we had to reconcile our priorities and bring them closer to one another*". The same item for a respondent who indicated that the challenge for their group was incompatible styles of working from a *work and communication* category is "*We realised we had to reconcile our styles of working and bring them closer to one another*". Therefore, regardless of the specific challenge, the construction of the items is the same in terms of the object of regulation (e.g. "*We realised we had to reconcile our ... and bring them closer to one another*").

Section 3, therefore, offer respondents an opportunity to indicate the degree to which they have engaged in individual and/or social-regulation activities in order to regulate their socio-emotional challenges they had experienced. These items represent individual and social forms of regulation, more specifically eight items for individual regulation and four items for shared-regulation. Individual regulation is further divided up into four self-regulation and four co-regulation items. Respondents rate each item in terms of whether that type of regulatory activities was used to control the specific socio-emotional challenge during group work on a Likert scale from 0 to 4 (0 = It did not happen, 1= did happen sometimes, and 4 = did happen a lot). The same data set (n=63) used to determine the internal consistency of the socially challenging situations within the broader construct categories of challenges was used again to determine the internal consistency of the regulation measures at Time 1 and Time 2. Cronbach's Alphas, computed for the overall regulation scale and all sub-scales were good and are displayed in Table 4. The correlations between the two measurement points ranged from $r=.385$ to $r=.584$.

 Insert Table 4 here

Overview of the AIRE and examples of its use as illustrations

To sum up, the AIRE examines three concepts, which are assumed to inter-relate in any socially challenging learning activity, namely, the *personal goals* pursued in the activity, the *socio-emotional challenges* that may interfere with goal achievement, and the *regulation of emotions* evoked by the self-identified challenges. A reflective measure of *goal attainment* is also included to enrich the interpretation that could be made from the AIRE data. Accordingly, the overall instrument consists of four sections aimed at capturing the critical aspects of each concept as it relates to the other concepts (see Table 1 for a conceptual overview).

To date, sections of the AIRE have been trialled in a few studies of collaborative learning (some face-to-face, some virtual asynchronous settings). In most studies, multiple sources of data were obtained and combined to get a richer understanding of the adaptive and social nature of the regulation process. In some studies, the collaborative learning activities contained several sub-tasks, with students completing sections of the AIRE immediately after each sub-task. Typically, these activities were perceived by students as motivationally and emotionally challenging, thus making them highly suitable for trialling the AIRE. Three studies that used components of the AIRE are presented below.

A first study (Järvelä, Järvenoja & Veermans, 2008) aimed to gain a better understanding of the dynamics of motivation in socially shared learning, from both individual and group perspectives. In this study, AIRE data on goals (Section 1) and goal attainment (Section 4) were combined with data gained from another self-report inquiry that had accessed individuals' general goal orientations in the beginning of the course that implemented collaborative work. The study also utilized actual collaborative group work interactions (video recordings). Participants were 99 teacher education students (74 females and 25 males, average age 24, S.D. = 5), who were taking part in an educational psychology course. They were informed about the study at the beginning of the course, when their willingness to participate was also sought. The students were randomly divided in groups of three to five either in face-to-face or asynchronous virtual learning settings. In both settings the groups collaborated on three different learning tasks. In the face-to-face setting each of the tasks lasted 2–3 lessons (one lesson lasting 90 min). In the virtual setting the students used an

asynchronous discussion board where they were able to post their comments at different times. The students had about one week to work on each task. Based on AIRE data focusing on students' actual collaborative learning situation, the study revealed that students who studied in face-to-face settings reported significantly more learning goals and fewer performance goals than their peers in the virtual groups, and this in spite of a similar general goal orientation. Thus the AIRE data provided evidence that the goals students generated for a collaborative learning activity were situated and variable, and not stable dispositions brought to the task. Follow-up analyses focusing on video data of the actual collaborative learning process of groups of volunteers in a face-to-face situation provided indicators of their shared motivation and the process by which they managed to achieve their learning goals. Overall, the combination of situation-specific AIRE and video-data provided useful, complementary data to understand the dynamics of socially shared learning.

A second study involved a qualitative analysis of the face-to-face interactions of four groups of four students (N=16). The group work was part of a mandatory educational psychology course, which was assessed as either passed or failed. The first-year graduate students were informed about the study at the beginning of the group work and were informed that participation in the study was voluntary. Each group comprised both female and male students. The aim was to combine individual and group level perspectives to better understand selected episodes of the collaborative learning activity that students felt challenging, and thus could be expected to have activated shared regulation of motivation. AIRE data on challenges (Section 2) complemented group interviews and video recordings of the group work interactions (Järvelä & Järvenoja, 2011). The students worked in the same group on three different collaborative learning tasks, each lasting 1.5-2.5 hours. Each task was on a different topic and structured differently in terms how much responsibility the groups themselves had to take for the organization of their group work. Section 2 of the AIRE was completed after each task was finished. The results showed that socially constructed self-regulation emerged when students made consistent efforts to regulate their learning and engagement. That study provided evidence of the usefulness of the AIRE data to identify specific challenging aspects in students' collaborative learning activity, and to relate the self-reported aspects to the corresponding situations in the video data, with a view to better understand motivation and emotion regulation at the group level.

A third study concentrated on the collaborative activities of 63 students studying in small face-to-face groups for three consecutive learning tasks (Järvenoja & Järvelä, 2009). Participants were first-year teacher education students (44 female, 19 male; with an average age of 23 years, SD= 4). The students were enrolled in a mandatory course in either early education (n=34) or educational psychology (n=29). Students were informed about the study at the beginning of the course. Participation was voluntary and all students consented to release their information. The analysis focused solely on AIRE data (goals, challenges and regulation, Sections 1-3), the aim being to investigate the socio-emotional challenges students experienced during collaborative learning and the extent to which students regulated the emotions evoked during those situations. The interplay of the emotion regulation processes between the individuals and the group as a whole was also examined. The students worked in groups of 3-5. They participated in three different collaborative tasks and worked within their groups for nine lessons (1 lesson = 90 minutes). Each task was differently structured, but always required group members to collaborate instead of just dividing up the work. Within the constraints of the task instructions students were allowed to decide how they wanted to organise the work of the group. Each group member completed the AIRE independently after completion of each task. The data revealed that students experienced a variety of situated socio-emotional challenges during their collaborative learning activity. There were also indicators that students used shared regulation alongside individual self-regulation to address the emotions that were evoked. The findings provided empirical support for the idea that regulation of emotions can

be socially shared, and that students were able to recognize and specify the processes where emotions were regulated collaboratively. The results of this study also suggested that intrinsic group dynamics are derived from both individual and social sources.

To sum up, data analyses from different components of the AIRE revealed that group members' situated experiences change from task to task. At the individual level this highlights that students' accounts of their goals for different sub-tasks, experience of socio-emotional challenges and interpretations of the sources of these challenges as well regulation activity may not be stable but rather associated to the situated circumstances, environment and group members' interaction activity. Shifting the analyses of AIRE data at the group level, by aggregating group members' individual responses, unveiled the groups' common experiences and socially shared regulation processes. Qualitative analyses of AIRE data also pointed to intrinsic dynamics within groups, in terms of how congruent group members' interpretations of socio-emotional challenges and reports on their shared regulation were with each other. Overall, these few studies provided preliminary support for the usefulness of the AIRE to measure the adaptive and social nature of regulation of emotions within and across real-life collaborative learning situations, and the value to combine AIRE with other process-oriented methods of data collection.

Discussion

This paper outlined the conceptual foundations of the Adaptive Instrument for Regulation of Emotions (AIRE). The intention to develop this type of instrument derived, on the one hand, from significant interest in the study of self-regulation, and especially the emotional aspects of self-regulated learning, in context (Nolen & Ward, 2008). On the other hand, it originated from a need to study how regulation processes are formed in social learning situations, and how socially shared processes and individual self-regulation are interrelated (Järvelä et al., 2010; Volet et al., 2009b).

The instrument addresses these two concerns with its unique features. It is structured in such a way that generic dimensions related to regulation can be explored while still retaining sensitivity to the situation. The four interrelated sections of the instrument identify individual and social aspects that can affect regulation processes in a specific situation. The instrument is also sensitive to the subjective and situated experience of each student, and is adaptive to their unique characteristics. It is necessary to acknowledge that each group member interprets the situation differently because of their personal intentions and experiences. At the same time the instrument recognises that these situations are nevertheless created and handled in social interaction, and hence are often social in nature. By conceptualizing the instrument as sensitive to the subjective experience of each respondent, it makes it possible not only to examine the inter-relatedness of the concepts that are measured but also to determine how these patterns of interactions play out within groups (See e.g. Järvenoja & Järvelä, 2009). In other words, it provides rich data for group-level analyses of the extent to which group members' experience (e.g. identification of socio-emotional challenges) converges or differs, and how this is reflected in the use of individual and socially shared regulation processes.

Like many other self-report measures, the AIRE collects data from respondents' reflective judgement of learning activity after it has happened. It could be argued that respondents' judgements are not necessarily independent of the course of that activity. However, in AIRE all responses are linked to concrete occurrences, and not to the task or activity in general. Like any other self-report measures the AIRE elicits students' *own interpretations* of their personal and shared processes. Its use in relation to a group learning activity provides further insight into group coherence from individual students' point of view. Students' own accounts of their collaborative

group work are particularly critical when the focus is on emotional aspects, which are often open to various interpretations. Also, group members' parallel responses provide a way for triangulation of the validity of their responses. However, when collecting and analysing data with AIRE, it is important to take into account the results of previous studies, which found that self-reports are often incongruent with other types of data (Hadwin et al., 2011; Zimmerman, 2008). This is why it is vital to be cautious especially when making interpretations of socially shared regulation. To get a more reliable and comprehensive understanding of the phenomenon captured by the AIRE, it remains essential to combine AIRE data with other measures, such as video-observations or trace data of the actual group activity. Using other process-oriented measures together with AIRE would also strengthen its explanatory power to understand groups' dynamic processes as the event unfolds.

To date and partly for these reasons, the AIRE instrument has only been used with small samples, which means that its potential for adaptation to the personal and contextual circumstances of widely different learning situations where students employ regulation processes is still to be demonstrated. The small-scale studies reported in this paper are, however, promising in revealing numerous indicators of the conceptual value of this instrument to measure the adaptive and social nature of regulation of emotions in socially challenging learning situations and its sensitivity to each student's unique experiences. By design, an instrument where each subsequent section is sensitive to individuals' responses to earlier questions presents unique measurement challenges, thus the use of variability tests as appropriate for an instrument measuring situation-specific responses. Future research will need larger samples as well as a broader range of collaborative learning situations to enable more sophisticated analyses of its psychometric properties. The relevance of the AIRE instrument outside formal educational settings could also be explored, for example to measure workers and organisation performance. In workplace contexts, the AIRE could be useful to examine work teams' awareness of their emotional reactions at different phases of a work project or to support distributed teams in their efforts to collaborate successfully.

Finally, as distinct from traditional surveys where students' interpretations are elicited strictly for research purposes, a secondary aim of the AIRE can be educational. The AIRE can open a window on students' perceptions of the socio-emotional aspects of a real-life collaborative learning activity, and contribute to help groups regulate their shared process of learning (Boekaerts & Cascallar, 2006). Making visible such processes provides educational benefits that have been neglected in research and development of collaborative learning in practice. Considering that the AIRE is sensitive and adaptive to specific situations, its use is expected to prompt students' metacognitive reflection. By reporting on their priorities and experiences in an actual group learning activity, students are gently induced to become aware of their goals and regulation processes, and to reflect on their goal achievement in such activities. Moreover, if the AIRE is administered several times and across different learning situations, we believe it has the potential to enhance students' metacognitive awareness of the significance of personal goals in group learning activities, the importance of identifying socio-emotional challenges to goal achievement, and the criticality of addressing these constructively through the effective regulation of emotions.

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Table 1. Conceptual overview of the components in AIRE.

Section	Key concept	Broader construct & dimension	Conceptual aim
1	Personal Goals	Motivation Individual	Identify the nature of personal goals related to the situation
2	Socio-emotional challenges	Emotion Social	Determine the existence of any socio-emotional challenges and their source
3	Form of regulation - Self-regulation - Co-regulation - Shared-regulation	Emotion regulation Individual Social	Establish how the emotions evoked by the challenges are regulated
4	Reflection on personal goal attainment	Metacognitive experience Individual Social	Gain insight into perceptions of goal attainment and role of group in the process

Table 2. Categories and nature of possible social challenges

Categories of challenges	Possible socially challenging situations (scenario)	Correlations in T1 & T2 (Spearman's rho)	p
Personal Priorities	A. Our goals for the project were different.	.141	.284
	B. We had different priorities.	.248	.057
Work and Communication	C. We seemed to have incompatible styles of working.	.129	.327
	D. We seemed to have different styles of interacting.	.153	.242
	E. People in our group did not connect very well with one another.	.184	.159
Team Work	F. One/some people were not fully committed to the group project.	.065	.622
	G. People had very different standards of work.	.104	.429
	H. Group members were not equal.	.435**	.001
	I. Some people were easily distracted.	.103	.436
Collaboration	J. Our ideas about what we should do were not the same.	.304	.018
	K. We differed in our understanding of the concepts/task.	.342**	.007
External Constraints	L. We had different personal life circumstances or family / study & work commitments.	.002	.988

Table 3. Internal consistency of scenario items within types of challenges as scales at Time 1 and time 2, and correlations between the two measurement times.

Challenge type	Challenge items	T1	T2	Correlation	
		(Cronbach's Alpha)	(Cronbach's Alpha)	T1 & T2 (Spearman's rho)	p
Personal priorities	A+B	.72	.82	.216	.098
Work & communication	C+D+F	.49	.76	.243	.062
Teamwork	G+H+I+J	.66	.69	.315*	.014
Collaboration	K+L	.63	.79	.464**	.000

*. Correlation is significant at the 0.05 level (2-tailed)

**. Correlation is significant at the 0.01 level (2-tailed)

Table 4. Internal consistency of the variables measuring the same form of regulation

Items (number of items)	T1		T2		Correlation T1 & T2	p
	(Cronbach's Alpha)	(Spearman's rho)	(Cronbach's Alpha)	(Spearman's rho)	(Spearman's rho)	
all (12)	.85		.86		.584**	.000
Individual ¹ (8)	.74		.75		.515**	.000
self (4)	.66	.338**-.614**	.73	.330**-.663**	.385**	.004
co (4)	.89	.558**-.739**	.92	.489**-.896**	.530**	.000
shared (4)	.87	.117-.640**	.90	.278**-.745**	.506**	.000

¹ Includes self- and co-regulation items

APPENDIX A

Section 1

WHAT WAS IMPORTANT TO YOU IN REGARD TO THE GROUP EXERCISE?

1.1. What was your major **goal** regarding this group exercise? _____

1.2. Apart from task completion, what **other things** have been important to you in this group exercise?

	not very important for me			a top priority for me
	1	2	3	4
A. Get the highest possible mark, ideally a High Distinction	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B. Make sure my grade is not going to be low because of the group	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C. Learn as much as possible from others	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
D. Get new ideas from the group	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E. Avoid being stressed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
F. Not let the group down	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
G. Avoid looking incompetent	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
H. Have a good time, enjoy the experience	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I. Make new friends, socialise with other students	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
J. Take personal responsibility for the work	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
K. Make sure I did not do more than others	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
L. Make sure everyone in the group contributed equally	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
M. Take the opportunity to practise my leadership skills	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

1.3. Which of the above have been the **most important to you** in this group exercise?

The most important First Second

The least important

Section 2

WHAT CHALLENGES DID YOU EXPERIENCE AS A GROUP ?

Below is a list of situations that you **may or may not have encountered** in your group and if so they would have **triggered strong feelings among (some) group members**. Please indicate for each of them, whether you experienced this in your group or not. If it happened, specify how big the challenge was, in your opinion.

Most of the situations below are described by a general statement followed by possible examples of how this might have happened. **The examples are not intended to describe the only way** the statements may be true. If the statement is true for you, and the example is not exactly how it happened in your group, please still rank the statement as you experienced it.

Please note that having to work through a challenge is not necessarily a negative experience. It may have turned into a positive experience and a successful outcome in the end.

It is assumed that each of these challenges would have triggered strong feelings among (some) group members

Our group experienced situation which triggered feelings where...

A. Our goals for the project were different.

For example - one/some people wanted to get a Distinction or High Distinction and others were just happy to get a Pass
- one/some people were so interested in the project that they were prepared to invest a huge amount of time but others were not interested.

*It did
not happen*

0

*It was a small
challenge*

1

2

3

*It was a big
challenge*

4

Our group experienced situation which triggered feelings where...

B. We had different priorities.

For example - Some people were more interested in socialising than getting on with the task.
- For some people, it was so important to have a pleasant atmosphere and friendly interactions that they were not prepared to question each other's views when discussing the task.

*It did
not happen*

0

*It was a small
challenge*

1

2

3

*It was a big
challenge*

4

Our group experienced situation which triggered feelings where...

C. We seemed to have incompatible styles of working.

- For example - One/some people wanted to start working right away while others wanted to plan first and start to work after that.
 - Others wanted to do other things first and work on the project later, saying that they always worked well under last minute pressure while others wanted to start as early as possible.

*It did
not happen*

0

*It was a small
challenge*

1

2

3

*It was a big
challenge*

4

Our group experienced situation which triggered feelings where...

D. We seemed to have different styles of interacting.

- For example - one/some people were used to telling others (or others telling them) directly if they disagreed but others were uncomfortable with this and found this style of interaction confrontational
 - one/some people were rather shy and others very outspoken
 - two people were competing to be the group leader.

*It did
not happen*

0

*It was a small
challenge*

1

2

3

*It was a big
challenge*

4

Our group experienced situation which triggered feelings where...

E. People in our group did not connect very well with one another

- For example - we had a different sense of humour
 - we were not on the same wavelength
 - our group found it very difficult to create a team atmosphere

*It did
not happen*

0

*It was a small
challenge*

1

2

3

*It was a big
challenge*

4

Our group experienced situation which triggered feelings where...

F. One/some people were not fully committed to the group project.

- For example - they did not make attendance their priority.
 - they did not do their share of the work
 - they seemed to expect that others would cover for them

*It did
not happen*

0

*It was a small
challenge*

1

2

3

*It was a big
challenge*

4

Our group experienced situation which triggered feelings where...

G. People had very different standards of work.

- For example - they said they could not find the information
 - the quality of their work was unacceptable.

*It did
not happen*

0

*It was a small
challenge*

1

2

3

*It was a big
challenge*

4

Our group experienced situation which triggered feelings where...

H. Group members were not equal.

- For example - Some tended to dominate, trying to impose their ideas, while others' didn't get a chance to contribute.
 - Some people's opinions were not taken into account.

*It did
not happen*

0

*It was a small
challenge*

1

2

3

*It was a big
challenge*

4

Our group experienced situation which triggered feelings where...

I. Some people were easily distracted.

- For example - they made and received phone calls on their mobiles during meetings
 - they were interrupted by their friends
 - they had other priorities at the time

*It did
not happen*

0

*It was a small
challenge*

1

2

3

*It was a big
challenge*

4

Our group experienced situation which triggered feelings where...

J. Our ideas about what we should do were not the same.

For example - One/some people had strong opinions of how we should proceed but others thought they were wrong.

*It did
not happen*

0

*It was a small
challenge*

1

2

3

*It was a big
challenge*

4

Our group experienced situation which triggered feelings where...

K. We differed in our understanding of the concepts/task.

For example - we were sometimes talking about different things even though we used the same words

- we had problems agreeing on what content to cover / ideas to include in our project
- our views were very different.

*It did
not happen*

0

*It was a small
challenge*

1

2

3

*It was a big
challenge*

4

Our group experienced situation which triggered feelings where...

L. We had different personal life circumstances or family / study & work commitments.

This made it very difficult

- For example - to organise meetings
- for everybody to attend
 - for people to stay long enough.
 - to coordinate timetable

*It did
not happen*

0

*It was a small
challenge*

1

2

3

*It was a big
challenge*

4

Finally,

From the list above (A to L), please indicate below what you think were

the two biggest challenges in your group (Insert letters):

Now, please move to **section 3**

and **select only the two pages**

that describe the situations you identified above
as **your biggest challenges**.

Answer all questions on those

TWO PAGES ONLY

Section 3
EXAMPLE FOR CHALLENGE A

Our group experienced situation which triggered feelings where...

A. Our goals for the project were different. For example

- One/some people wanted to get a Distinction or High Distinction and others were just happy to get a Pass
- One/some people were so interested in the project that they were prepared to invest a huge amount of time but others were not interested.

In light of this challenge, did you or your group do any of following in order to deal with your experienced feelings?		Did <u>not</u> happen	Did happen sometimes			Did happen a lot
		0	1	2	3	4
WHAT I DID...						
1.	I convince myself that it could actually be a good thing, because...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.	I tried to act more flexible.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.	I told the others that we needed to accept that some people were prepared to put in more work than others.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5.	I tried to understand that the others were not simply trying to be difficult but they had different goals.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6.	I told the others we needed to be more flexible in order to find a compromise/solution for the situation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7.	I tried to accept the situation and realise that some people were prepared to put in more work than others.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8.	I tried to explain to others that we needed to understand different goals.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10.	I tried to convince someone that the others were not simply trying to be difficult and we can solve the situation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
WHAT WE DID AS A GROUP...						
1.	We understood that we have to reconcile our goals closer to one another.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.	We solve the situation by compromising to accommodate everyone's goals.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.	We decided that we had to work out the situation together in order to carry on working.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6.	We accepted that different members have different goals and we organised our working according to that.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Is there is **anything else** that you or the group did to address the challenge? (Answer on the backside)

section 4
FINAL REFLECTIONS

Please go back to Part 1 Question 1.3. and

4.1. Copy below what you ranked as First and Second, as being the most important things for you to achieve in this project.

First Second

4.2. Rate the extent to which you think this was achieved.

	Not achieved	←	Partially achieved	→	Fully achieved
First	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
Second	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>

4.3. Please rate the extent to which the group played a positive, neutral or negative role in helping you achieve the three things that were important to you:

	The group played a <u>negative</u> role	←	The group played a <u>neutral</u> role	→	The group played a <u>positive</u> role
First	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
Second	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>

4.4. Now at the end and overall, how personally satisfied are you with this group project?

(1) Not satisfied at all (4) Fully satisfied

Please justify your rating _____

ANYTHING ELSE YOU WISH TO ADD?

Anything else you can tell us about this group project, in order to help us understand how/why it worked/ didn't work OR what could have helped to make it work better.

THANK YOU VERY MUCH FOR YOUR TIME

