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Group work at university: Significance of personal goals in the regulation strategies of students with positive and negative appraisals

Simone Volet & Caroline Mansfield
Murdoch University, Western Australia

This paper examines the mediating role of students' goals in group work at university. Research on cooperative and collaborative learning has provided empirical support for the cognitive, motivational and social benefits of group work but the antecedents of motivation and on-going management of emerging motivational and socio-emotional issues have received less attention. A theory of self-regulation that incorporates students' personal goals and perceptions of context combined with a sociocultural perspective on co-regulation of individuals and contexts can help understand why and how some groups resolve their social challenges while others are less successful. An empirical study highlighted the mediating role of students' goals in their appraisals of group assignments, perceptions of various aspects of the contexts, and in turn regulation strategies to achieve their goals. Qualitative differences were found in the regulation strategies of students with positive and negative appraisals.

Keywords: goals, group work, motivation, self-regulation

Introduction

Being able to work in teams is formally recognised as a desirable attribute of university graduates. As such, many professional programs have introduced mandatory group assignments on the assumption they provide opportunities for students to develop and practise team skills. Yet fostering students' motivation and productive engagement in such activities is highly challenging. Empirical studies reveal the interpersonal, motivational and socio-emotional challenges experienced by university students during group work (e.g. Bosworth & Hamilton, 1994; Burdett, 2003; Fenwick, 2002; Volet, 2001; Volet & Ang, 1998; Wright & Lander, 2003). Factors or conditions, assumed to influence group processes and performance have been identified and investigated, for example, group heterogeneity, individual prerequisites, task features, and interactions between variables (Springer, Stanne & Donovan, 1999 for a review). Overall, there is converging evidence that group assignments in content area courses at university are challenging for lecturers and students. A common view is that group assignments are emotionally and socially demanding with unclear benefits for student learning.

Studying students' motivation and participation in group assignments at university is complicated when such activities are typically completed outside class without direct teacher supervision. As a result many groups cooperate only to divide the task into independent subtasks that are assembled then submitted. Furthermore, as documented in the empirical studies and theorised about from a social cognitive perspective (e.g. Garcia-Prieto, Bellard & Schneider, 2003; Salomon & Globerson, 1989), even minimal levels of cooperation can present motivational and socio-emotional challenges, raising concerns about students' readiness for teamwork. Understanding how and why some groups work

productively together and resolve emerging socio-emotional challenges while others are less successful is critical for improving the development of generic skills at university.

Overall, motivational and socio-emotional aspects of students' participation in group learning activities have received little attention in the literature, the main emphasis being on cognitive dimensions (e.g. Dillenbourg, 1999). Understanding motivation in learning contexts is a recent development (Hickey, 2003; Volet & Järvelä, 2001) as is research on the socio-emotional aspects of learning (Pekrun, Goetz, Titz & Perry, 2002). While research on cooperative and collaborative learning has revealed the motivational benefits of learning with others, limited attention has been paid to the antecedent of motivation and actual management of motivational and emotional issues in real-life socially challenging situations. Similarly, self-regulation research (Boekaerts, Pintrich & Zeidner, 2000; Zimmerman & Schunk, 2001 for review) has established the benefits of self-regulated learning on motivational outcomes but only recently addressed regulation of motivation and emotions (e.g. Azmitia, 2000; Wolters, 1998).

The aim of this study was to examine the mediating role of students' personal goals and perceptions of context in appraisals of group assignments, and in turn regulation strategies to achieve goals. The research is grounded in a combination of socio-cognitive theory of self-regulation with its latest developments on the significance of personal goal pursuits (Boekaerts, 2002) and a sociocultural perspective that stresses how individuals' understandings of situations co-regulates engagement and participation (McCaslin, 2004). Figure 1 presents the dynamic interactions of these concepts as applied to students' engagement in group work.

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FIGURE 1 ABOUT HERE
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The overall enclosure captures the situation from a socio-cultural perspective of individual-social systems co-regulation. From this systemic perspective, groups and the broader social and structural aspects of the communities in which they are located, are assumed to provide affordances and constraints for members to participate, or alternatively to stay at the periphery or avoid engagement (Hickey, 2003; McCaslin & Hickey, 2001). Unpacking the person-social dynamics of group work can be achieved from a socio-cognitive perspective focusing on the "individual-in-context" (Pintrich, 2000) and the perspective of "self-in-context" regulation (Volet, Vauras & Salonen, submitted for publication). From this psychological angle, participants' subjective accounts and interpretations are valued as they provide unique insights into the antecedents of motivation and on-going management of emerging motivational and socio-emotional issues. The two-directional arrows between individual and context in Figure 1, therefore, do not deny that individuals are part of and constituted by their environments but are used as heuristic devices to represent the psychological distinctions between self and context at the "experiential interface" (Volet, 2001).

Working down the left hand side of Figure 1, are individual self-related cognitions with at the broadest level, identity, beliefs and higher order goals. These cognitions provide the basis for development of personal goals and appraisals of group work generally, and specific goals for particular group experiences. Although models of self-regulated learning have traditionally been conceptualised as goal-directed (e.g. Pintrich, 2000; Schunk & Zimmerman, 1994), the importance given to personal goals pursued in real-life

2

learning situations is relatively recent. According to Boekaerts (2002), personal goals are critical to understand students' adaptation systems as higher order goals reflect students' priorities in study and life generally, and personal goals reflect priorities in particular situations. The two are inter-related but not overlapping since personal goals for actual tasks are also sensitive to local circumstances. The significance of non-academic personal goals (social and well-being goals) with learning and performance goals is rapidly gaining momentum (Boekaerts, 2002; Boekaerts & Corno, 2005; Dowson & McInerney, 2003; Juvonen & Wentzel, 1996; Lemos, 1999).

Working down the right-hand side of Figure 1 is the perceived context. Context was operationalised at the broadest level as students' perceptions of professional relevance of group assignments, and then perceptions of the class context, specifically teaching practices related to group assignments in their Business program. At the situation-specific level are students' perceptions of local group contexts, including peers' goals and circumstances.

All cognitions and perceptions converge in a mutual appraisal process during an actual experience of group work (dotted box in Figure 1). At that level, participants become each others' social context, thus the two-way mutual appraisals arrow. These unique, intersubjective, personal-social dynamics lead to individuals' self-regulation strategies. From a socio-cognitive perspective, self-regulation refers to individuals' control of their cognitions, behaviours, motivation, emotions, task situation and context to achieve tasks. Attempts to regulate peers' behaviours, motivation and emotions are also expected to take place (Corno, 1993; Randi & Corno, 2000) because others form the social context that needs to be controlled to achieve personal goals. Ultimately, personal-social dynamics during group projects lead to revised cognitive, motivational and affective outcomes, which will form the basis of future appraisals.

Two specific research questions were addressed in this study:
1. What is the role of goals and perceptions of various aspects of contexts in the development of negative or positive appraisals of group assignments?
2. How do the regulation strategies of students with positive and negative appraisals of group assignments differ, and how do these strategies relate to goals and perceptions of contexts (overall co-regulation process)?

Method

Participants

Eighteen 3rd year Business students majoring in Management at university in Australia volunteered to participate in the study. All were enrolled in a unit requiring a mandatory small group assignment (self-selected membership) to be completed outside class. Such assignments, which are typical of professional programs, often attract a group mark that contributes to students' unit grade and therefore their GPA. Students' backgrounds varied, with 8 males and 10 females, 11 local and 7 international students (3 from Middle-Northern European and 4 from South-East Asian countries), 6 with substantial and 11 with minimal or no work experience. Diversity of backgrounds was expected to stretch the range of goals, appraisals and regulatory strategies. There was no intention to compare sub-groups of students.

Procedure

Semi-structured in-depth interviews were conducted in informal settings by a researcher not involved in the teaching of these units. Sessions were audio-taped with students' consent. All students completed the Students' Appraisals of Group Assignments (SAGA) questionnaire at the beginning of the interview. Interviews were conversational and lasted 45 to 90 minutes. All interviews were transcribed for analysis.

Interviews

The interviews elicited students' accounts and reflections on experiences of group assignments, with a view to examine mental representations, including goals, experiences, appraisals and regulation strategies.

The SAGA questionnaire triggered students' spontaneous views about group assignments. Students' perception of the *professional relevance of group work* as preparation for teamwork in future employment, and perceived lecturers' views were elicited. Students discussed recent or current group project *experiences* they found socially challenging. Probes were used to address: (a) priorities in the group project (*personal goals for group assignments*); (b) how these related to study and life priorities generally (*higher order goals*); (c) reflections on the social dynamics and group challenges including *feelings and emotions*; (d) how challenges were handled (*regulatory strategies*) and (e) the *outcomes* for individuals and groups. Probes were used to establish whether challenges and regulatory strategies were perceived as unique or typical, and explore source(s) of challenges.

Questionnaire on Students' Appraisals of Group Assignments (SAGA).

The SAGA instrument (Volet, 2001) measures students' appraisals of different aspects of group assignments: Cognitive, Motivational, Emotional, Management, Group assessment, Friendship and Cultural Mix. Breaking down overall appraisals into several aspects revealed the impact of interdependence and motivational variables on specific appraisals. The questionnaire provided baseline data to identify students with extreme views about group assignments and activate their reflections on the multi-dimensional nature of group assignments. Finally, it provided separate data to complement students' verbal accounts generated in interviews.

The SAGA data were analysed separately for each of the 7 scales, using Rasch modelling (Andrich, 1978; Andrich, Sheridan & Luo, 2000). Given the small sample (n=18), item and person locations were estimated from a previous Rasch analysis of the SAGA instrument with a similar student population (Volet, 2001), and item locations were entered into an anchor analysis. The tests of fit and reliability figures for the 7 scales were satisfactory with separation indexes, similar to Cronbach alphas, ranging from .66 to .79. The analyses yielded seven appraisal scores for each individual (one per scale) and an overall mean score of -0.002 (s.d. 0.673, n=18, max 0.747, min -1.473). A high score systematically indicates a positive appraisal of group assignment, i.e. cognitive benefit, high motivation, pleasant emotions, low levels of concerns about management and group assessment, and positive views of friendship and culturally mixed groups. Two small

groups of students with the most positive (0.747 to 0.367) and the most negative (-0.535 to -1.473) mean appraisal scores were identified.

Interview data analysis

The interview data were analysed independently by a researcher blind to questionnaire data results. Transcripts of all 18 respondents were analysed but only data from the two groups of students are reported in this paper. Interview data was analysed using a combination of inductive and deductive approaches to examine theory-based assumptions without losing sight of emerging issues.

The first part of data analysis involved a deductive coding process based on the target concepts. Pre-determined categories of goals (learning, performance, social and well-being), appraisals (same as SAGA instrument) and regulation strategies (self, other and self in cooperation) were coded, alongside perceptions of various aspects of context. Performance goals referred to level of achievement (e.g. a High Distinction or just a Pass) and social goals to quality of interpersonal relations. All data were entered in the NUD&IST (Non numerical Unstructured Data Indexing Searching and Theory-building) (QSR NUD*IST4, 1997) software program.

The second step involved a contextual analysis of student's accounts. Relationships connecting the target concepts were identified. These connections were either made explicit by students themselves or were inferred by the researchers. Qualitative differences within categories were given special attention.

Results

Significance of goals and perceptions of various aspects of contexts in the development of negative or positive appraisals of group assignments.

This section compares patterns of results for students with most negative (NegApp 08, 03, 06, 01) and most positive (PosApp 02, 09, 05, 04) appraisals of group assignments. Analyses of students' goals as related to perceptions of various aspects of contexts are reported, followed by accounts of mutual appraisals at the experiential interface. The contextual analyses examines feelings and emotions generated at the interface of person-group dynamics.

Higher order and personal goals. The assumption that higher order goals influence appraisals of and personal goals for group assignments was generally supported. The accounts of all four students with most negative appraisals of group assignments were dominated by pursuit of performance goals. The importance of striving for high performance was explicitly linked to broader life pursuits and personal inclinations.

> *The way I tackle group work is how I tackle most assignments and … just life management* (NegApp03).

> *… in life I'm fairly, highly motivated to do well in whatever I do (*NegApp08).

Learning goals were linked to achievement.

5

> *I really like just to get (understand) things ... if it's something really complex, I'll take the time and I'll actually think about it ... like I'm always pushing myself ... this desperate push to get to a standard of professionalism. And that's with my work and study* (NegApp01).

Like learning goals, social and well-being goals appeared less important, as *"getting the work done"* (NegApp01). The value of friendship was not denied but was not perceived as intrinsic to group work, *"the friends I make are friends outside"* (NegApp03).

In contrast, students with most positive appraisals of group assignments (PosApp group) described multiple goals, focusing on performance and learning, in conjunction with social well being and friendship goals. Some social well-being goals were explicitly targeted at group outcomes.

> *The learning from this is the most important thing* (PosApp02).

> *Getting a good mark and developing my skills as a team member* (PosApp09).

> *I don't really aim for top grades, I aim to do well ... something that you're proud of ... I hope that everyone contributes and everyone becomes involved in it and has enjoyed doing it* (PosApp05).

As highlighted in these quotes, PosApp students' personal goals were also linked to higher order goals, but recognised the importance of social opportunities to enhance working dynamics developing between group members.

> *I know it sounds so corny but making friends is a good thing, and that's important ... it reflects good on the work ... on the project ... on me, and on them* (PosApp04).

PosApp students' integration of performance, learning and social well-being goals stressed beliefs of the value inherent in social forms of learning, where academic and social goals work in a complementary manner to facilitate desired outcomes. This contrasted with the inhibiting impact on engagement in group activities when goals were exclusively performance focused (NegApp group).

Broad context. Important goals during group assignments were consistent with students' perceptions of the broad context, as reflected in comments regarding professional relevance of group work.

NegApp students generally held negative views about workplace relevance of university group work and personal workplace experience was called upon to support personal views.

> *There's absolutely none whatsoever (relevance) ...That's one of my big issues is that it's not real* (NegApp08).

In contrast, and regardless of work experience, PosApp students believed team work was integral to future work, and fostering team skills a responsibility of universities.

You have to be able to work in groups, in effective teams ... The responsibility for universities is to prepare people to go out into the work force. To do that effectively in today's sort of corporate world, you have to have team skills (PosApp09).

These students generally believed positive and negative group experiences would have future benefit, a position consistent with pursuit of learning, social and well being goals. Overall, NegApp and PosApp students perceived the workplace relevance differently.

Class context. All NegApp and PosApp students commented about teaching practices related to group assignments. NegApp students desired more teacher involvement to support group processes and held extremely negative views about group assessment, believing unequal distribution of work and responsibility between group members to be a clear disadvantage.

It makes a mockery of the university environment if they (other students) end up with good marks and they haven't worked for them (NegApp08).

It's like putting your head on the chopping block and trusting the guy holding the axe to stop (NegApp03).

PosApp students expressed more moderate or circumstantial views about group assessment.

I think the pros outweigh the cons... to some degree your grades are dependent on other people. But at the same time ... grades aren't everything (PosApp09).

One or two people usually end up doing all the work. That can happen but it does depend on the group dynamic (PosApp04).

Some students also saw evaluation of group processes as valuable for future employment.

If we're going to have group work our evaluation should be based on psychological evaluation, because then it can be recommended to employers that we work well in groups (PosApp04).

Overall, the two groups perceived similar issues differently and addressed them accordingly. NegApp students expressed extreme frustration regarding group assessment, whereas PosApp students seemed more accepting of this practice as an integral part of group activities. This was consistent with respectively, an exclusive individual striving for a high mark as compared to the pursuit of a healthy balance of inter-related performance, learning and social well-being goals.

Experiences and group context at the experiential interface. Within the experiential interface are located students' stories of group work experiences occurring in local context(s). The two groups of students reported very different stories. NegApp students maintained a negative perspective, while PosApp students volunteered some highly positive personal stories to balance challenging experiences. Most students linked the nature of experiences to appraisals of teaching and group contexts, and the resulting opportunities or constraints on personal goal pursuit. This stressed the significance of the mediating function of goals in students' appraisals of situations.

NegApp students linked negative experiences to difficulties with group management, poor communication, unequal distribution of work, and conflicting work ethics, attitudes and goals. Comments conveyed high levels of stress and frustration.

> *All my groups have had a major problem which has resulted in one of us doing all the work* (NegApp06).

> *It's a personally bad experience for me when I work in a group ... I hate it but I'm not going to do anything to jeopardise (a mark)* (NegApp08).

Even so, some recollected experiences where group dynamics were enhanced by sharing ideas, level of commitment and goals with another group member. Students admitted that such atypical situations provided more opportunity to pursue performance goals.

In contrast, PosApp students emphasised positive group experiences linked to aspects of group contexts. These included positive group dynamics, equal distribution of work, similar goals and positive affective, motivational and cognitive outcomes, and ultimately the realisation of personal academic and social goals.

> *It was such a pleasure working with those people, we still have coffee down the coffee shop ... a great dynamic ... people who wanted to work* (PosApp04).

> *It was a really really great experience ... It was probably one of the best learning curves I've ever had ... there had been a certain bond develop amongst the team and when we all went our separate ways, you did feel as if you were losing something* (PosApp09).

Yet, amid such highly positive experiences existed a sense of anxiety about the initial stages of a group process, due to uncertainty about group formation and management. There were some reports of negative experiences due to unequal contributions and irreconcilable differences. Some students admitted group success could be related to 'luck'. *"It's a bit of a luck of the draw who you get in your group with. Sometimes it will work out well and sometimes it wouldn't"* (PosApp 05).

The two groups' contrasting dominant experiences seemed to influence their general beliefs and tendencies about future group assignments at university.

> *Crap, I'm going to drop the subject ... I don't want to do it, I hate it* (NegApp03).

> *Just another one of these bloody group projects ... that complete feeling of being let down by the lecturer once again* (NegApp01).

These two students' anger contrasts with alternative views.

> *One of the things I like about groups is that groups at least have the potential to stimulate the whole creative process* (PosApp09).

> *I'm very pro group projects because the learning is good ... (you) can interact with people from different cultures. You learn a lot, you learn about yourself as well because you get ideas from others and they can give you feedback ... you*

have all these positive things ... we are able to work in groups and teams when we find a job in the future as well (PosApp02).

Such accounts suggest that higher order goals and personal goals played a mediating role in appraisals of contexts, and quality of experiences. This is consistent with a conceptualisation of goals, which acknowledges their role in providing direction for engagement and acting as criteria for evaluating an activity (Lawrence & Volet, 1990). How various regulation strategies used by students during group work develop in interactions with goals and perceptions of context is examined in the next section.

Regulation strategies of students with positive and negative appraisals

The personal goals, appraisals and perceptions of context of students with negative and positive appraisals appeared to lead to qualitative differences in self-regulation, regulation of others (for self and/or others' benefits), and self-regulation in cooperation with others, with different individual and group outcomes.

Self regulation. Both NegApp and PosApp groups described situations where they regulated behaviour, motivation and emotions while working in groups. Students' accounts illustrate how self-regulation is part of the dynamic interplay between personal goals, feelings and emotions during experiences, and appraisals of the group context. The mediating role played by goals and perceptions is revealed by qualitative differences in regulatory strategies of NegApp and PosApp.

A common self-regulation strategy among NegApp students was to engage in compensatory work to control a challenging situation and aim to attract high marks.

> *I got the camera out and I did the shooting for about three weekends in a row ... I had done pretty much most of it ... I was quite happy to do it. Rather do that and know that it's done than be mucking around and wasting time* (NegApp08).

> *It's easier to compensate ... don't have time to start doing industrial relations and sorting things out (NegApp06).*

This form of self-regulation was particularly prevalent amongst students pursuing strong performance goals. It is reasonable to assume these students also regulated their emotions, but behavioural strategies aimed at self-regulating the situation were dominant in their accounts, probably as these provided solutions to the problem. These compensating behaviours also seemed to be the result of an inability to regulate the motivation or behaviours of others during the group process, a challenge compounded by constraints of teaching and group contexts. Overall, to achieve a high mark, students would rather *"do extra work than rely on others"* (NegApp08).

The PosApp group also linked self-regulation strategies to goals, particularly academic, social and well-being. Each PosApp student spoke of ways they regulated their behaviour to reach academic goals. Some spoke of regulating group behaviour based on a desire to improve and develop team skills.

> *With every group I've worked on I've sort of tended to ... try and recognise, ... I think I'm doing this well but I see how I could improve* (PosApp09).

Regulation of group behaviour was also linked to pursuit of learning and well being goals.

> *My age makes them reluctant to disagree with me ... so over time I basically learned to not put forward ideas until everyone else had ... if I don't monitor myself I can have a tendency to dominate a group ... I like control, so to work in group effectively I need to accept that I can't just control everything ... being prepared to rely on others is probably one of the major, biggest learning curves I've had* (PosApp09).

These examples illustrate links between self-regulation and the regulation of others in situations where learning requires social interaction. The role of goal pursuit and experiences in regulatory strategies is also highlighted.

Regulation of others (for self-returns, and sometimes the other person's benefit). Once again, qualitative differences emerged between NegApp and PosApp students' attempts to regulate others. Several NegApp students described instances where such attempts, always limited to self-returns, had been unsuccessful.

NegApp08 admitted having used confrontation with little success. These attempts resulted in highly negative emotions and feeling *"underhanded"* and *"frustrated ...it could have been handled a lot better."*

Another student was more successful in acting as a 'mediator' between peers.

> *I've basically managed to keep him on side ... we might have some problems with her but if she's keen on doing the work then it will pay off in the end to keep her* (NegApp01).

The degree of success with which NegApp students managed to regulate the behaviour of others was consistently linked to personal goal pursuit and perceptions of group context. Sharing similar goals to another group member allowed for increased possibilities and desire to regulate others' behaviour (NegApp01, NegApp03), which appeared more difficult when acting alone (NegApp08).

PosApp students also attempted to regulate the behaviour of other group members.

> *I guess I can be a motivator ... lead by example and if they feel inadequate, and nobody likes to feel inadequate ... most people will hate rocking up to a group of four people and have done the least* (PosApp04).

> *My hope is that by being, trying to be positive about it they'll sort of come to the party and sort of start pulling their weight a bit more ... I think the experience of trying to get this person to pull their weight is a learning curve in itself that's worth having* (PosApp09).

These attempts reflect more constructive and more other-oriented approaches to the regulation process. They illustrate interest in generating some positive benefits for others rather than an exclusive focus on high marks. This form of other regulation appeared

consistent with pursuit of multiple goals that integrate performance, learning and well being.

Self-regulation of others' behaviours and motivation in cooperation. Instances of this form of regulation were identified when students used "we" when describing approaches to group challenges resulting in group actions to either encourage an individual to change group or face eviction.

In one instance, even the lecturer advised a group to *"kick her out"* but group members felt *"You can't do that, that's mean"* (NegApp03). Consequently, they jointly devised a strategy of adopting contrasting roles to facilitate a change in the member's behaviour.

Two students described instances where non-contributing group members had been evicted. Both explanations revealed how the decision was legitimized by aspects of the teaching and group context (group charter and assessment practices) and strong personal performance goals.

> *It's my marks that are going to suffer ... it's my marks in the end that are going to get me where I want to be, or get me what I want ... We don't want to carry her burden* (NegApp06).

> *We've decided to kick her out, according to the group charter which requires three strikes and you're out ... we'll just cut our losses and do the work ourselves ... this will be better because we've basically cut off the dead weight now* (NegApp01).

The group contracts established by some teachers to presumably assist students deal with such challenges, legitimized eviction when negotiation was unsuccessful. Although contracts provided groups with external procedures to avoid having to address inequities within groups, it was equally evident such contracts lessened students' efforts to negotiate and resolve conflict. Contracts allowed students with strong performance goals to avoid developing skills for working in socially challenging teams.

The PosApp group described two instances of self-regulation of others' behaviours or motivation in cooperation. Situations involved a group refining their group contract as a pre-emptive measure for potential challenges and group compensation for an individual.

> *We added rules to our contract ... who was responsible for what part and handed that back to the lecturer again* (PosApp04).
> *We are quite happy that we could just compile it and make little alterations because that would take us less time than actually trying to motivate a fourth person who might not be available or doesn't have enough time* (PosApp 02)

Overall, these qualitative differences in the regulation strategies of students with positive and negative appraisals reflected the significance of respective goals. Goals acted as mediators of students' appraisals of contexts and experiences. This was particularly evident in students' accounts of specific incidents at the experiential interface of personal goals and group context.

Discussion

Comparing the cognitions and experiential accounts of two small groups of students with extreme views about mandatory group assignments at university revealed the mediating role of goals, appraisals and perceptions of context on regulation strategies in socially challenging learning activities. From a socio-cognitive perspective, the study highlighted the significance of students' personal goals, with variations that reflected their perceptions of the contexts within which these goals were pursued. From a sociocultural perspective, it could be argued that students' goals and the social systems in which students participated (professional study, class teaching/learning practices, immediate group environment) co-regulated the adoption of particular regulation strategies.

The extreme views of group assignments displayed by students in the two groups were in agreement with higher order goals, such as life priorities, and personal goals for group assignments. This finding supports Boekaerts' (2002) call for the centrality of personal goal systems to understand adaptation processes in real-life learning situations. The study also supported the importance of students' non-academic goals, in particular social and well-being goals to understand motivation and self-regulation (e.g. Dowson & McInerney, 2003; Juvonen & Wentzel, 1996; Lemos, 1999). It highlighted that in social learning situations, goals reflecting the value of social forms of learning lead to more adaptive regulation strategies. In this study, academic, social and well-being goals were complementary to achieve desirable individual and group outcomes. Alternatively, goals narrowly focused on achieving high grades were associated with maladaptive behaviours in group learning environments.

Students' perceptions of various aspects of the context provided opportunities and constraints for engagement in group activities. However, these appeared to be filtered through students' "goal lenses". Reciprocally, it could be argued that while students' specific goals were related to higher order goals, the salience of specific goals was in part reinforced by perceptions of the immediate group contexts. The mediating role of personal goals was evident in the two groups' opposite perceptions of the professional relevance of group work. This was also apparent in their moderate views of group assessment and balanced appraisals of group context(s). As revealed in the comparisons, the influence of context on students' cognitions and behaviours was not direct but mediated by goals, which affected evaluation of the importance and relevance of those aspects. For example, students pursuing essentially performance goals voiced strong objections regarding group assessment, whereas their peers with a combination of performance, learning and social goals expressed more moderate and long-term views. From a sociocultural perspective (McCaslin, 2004), goals and perceptions of contexts were co-regulating students' engagement in group work.

The study also revealed how, during group activities, personal goals and perceptions of teaching and group contexts interacted dynamically to produce regulation strategies compatible with goal pursuits. Consistent with self-regulation theory (e.g. Boekaerts & Corno, 2005; Zimmerman & Schunk, 2001), students' goals mediated adoption of self-regulation strategies (self cognitions, motivation and emotions) and regulation of immediate physical and social context (e.g. peers) to achieve personal goals. The socially challenging nature of learning activities also led to a social form of self-regulation, labelled self-regulation in cooperation. This was observed when students appeared to cooperate in self-regulation endeavours and reported joint regulation strategies to achieve

common goals. Self-regulation in cooperation is conceptually distinct from Salonen, Vauras & Iiskala's (2004) pragmatic mode of co-regulation since it relates to the social management of a group activity rather than relational control occurring at micro-level as activities unfold.

Two forms of other-regulation also emerged from the social learning environment. Apart from regulation of peers' behaviours as a form of self-regulation, there was evidence of regulating peers' behaviours and motivations to reflect concern for peers' benefits. The distinction between regulation of others for self-returns and regulation of others for personal benefits (in addition to self-returns) is somewhat reminiscent of two related bodies of literature related to regulation of learning. The first is self-regulated learning theory, which highlights principles of effective self-regulation. The second is Vygotsky's (1978) theory of cognitive development, which stresses the gradual shift from other regulation to self-regulation. Students' engagement in both forms of other regulation highlighted the social nature of learning and the importance of broadening the construct of self-regulation (Boekaerts, 2002) to reflect its social nature (Volet, Salonen & Vauras, 2005).

The findings of qualitative differences in self, other and self in cooperation regulation strategies between groups of students with negative and positive appraisals of group assignments reinforces the significance of goals as providing direction for adaptive learning. Students' accounts showed that all individuals regulated behaviours, motivation and emotions but the nature of their regulation differed, in a manner consistent with goals and appraisals. Overall, the two small groups of students reflected two distinct mind-sets and related regulatory approaches. Students with negative appraisals and an exclusive focus on performance tended to be more self-centered and saw group assignments in terms of themselves within the group. Consistent with that approach, their regulatory strategies (often maladaptive to the group activity) displayed elements of control, direction and empowerment. In contrast, students with positive appraisals and multiple goals (performance, social and learning) were at least in part, focused on group learning outcomes. They perceived group assignments in terms of group dynamics and their regulatory strategies reflected facilitation, modeling and empowerment . These qualitative differences stress the significance of social and well being goals for developing a better understanding of the relationship between personal goals and regulation. Despite major limitations due to small sample size, specific local circumstances and reliance on self-reports, this exploratory study illustrated how alternative types of regulation that are less self-focused can be generated in cooperative learning contexts. From an educational perspective, the study highlights the importance of explicitly valuing social forms of learning at university, and monitoring group processes to encourage positive outcomes for individuals and the group.

Acknowledgements

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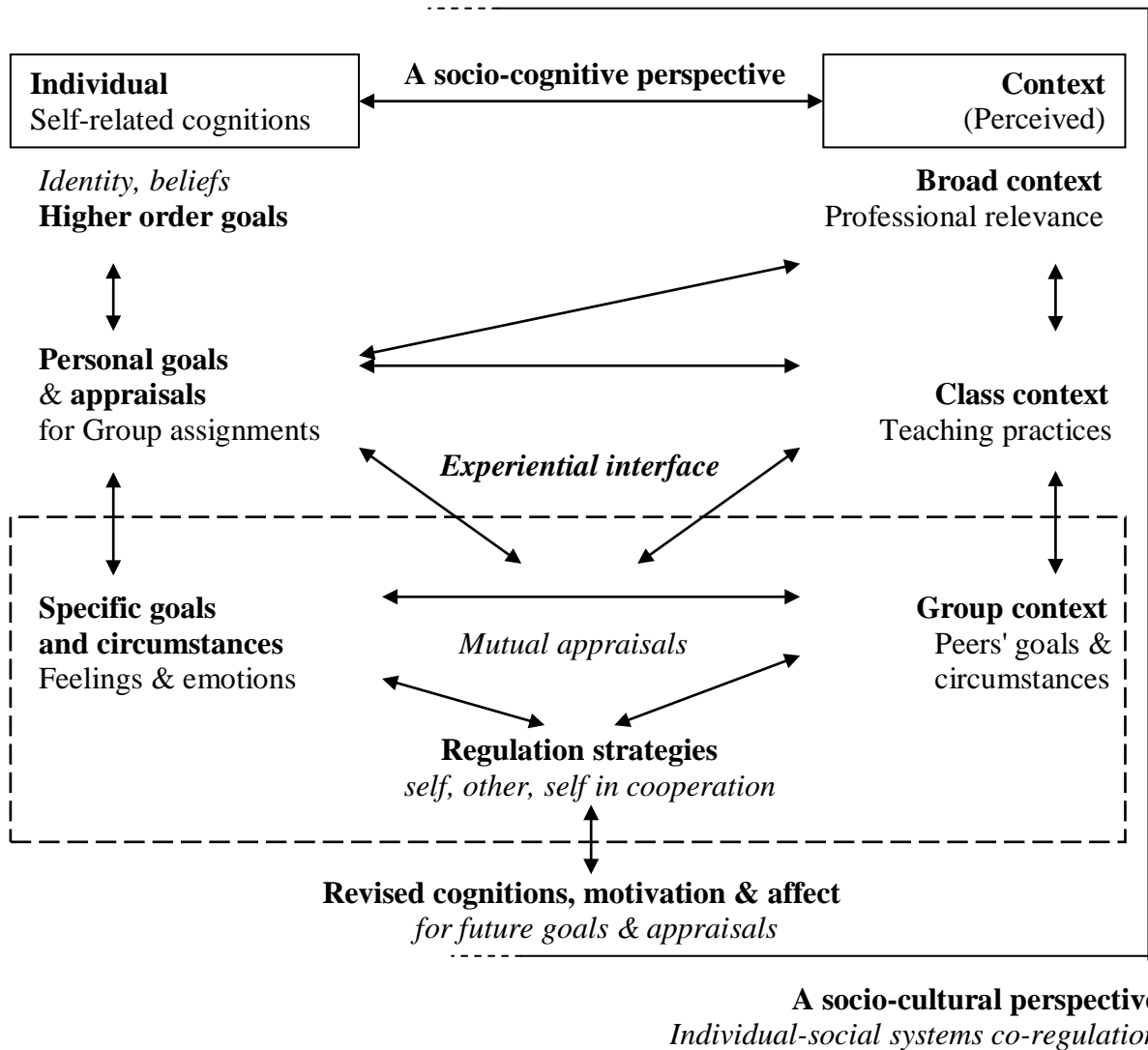*6 792 words (including Abstract and Reference list)*

Figure 1. Personal-social dynamics of group work at university: A combined sociocultural and socio-cognitive perspective