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Markku Niemivirta

HABITS OF MIND AND ACADEMIC ENDEAVORS
The Correlates and Consequences of Achievement Goal Orientations

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Abstract

The purpose of this study was to examine factors that influence students' situational construals and the consequences of those construals in terms of task engagement and performance. A theoretical framework was laid out which outlined the dynamic processes of self-regulation in learning and performance. It was suggested that the goals and outcomes students favor and pursue are crucial determinants of how students approach academic tasks. Two major forms of self-regulation were identified; one with a focus on gaining personal resources, and another with a focus on restoring the balance in personal well-being. The tendency to engage in different variants of these basic forms of self-regulation was presumed to be reflected in the patterning of different achievement goal orientations.

The general research questions of the study were as follows: (1) What sort of goal orientations and goal orientation profiles can be identified among comprehensive school students? (2) How generalizable are goal orientations in relation to gender and cultural background? (3) How do students with different goal orientation profiles differ with respect to motivational beliefs, situational appraisals, and indices of school achievement and task performance? (4) How do students' task-related experiences and performance vary as a function of different instructional conditions?

Four empirical studies addressed these questions: Study I looked at the patterning of goal orientations, motivational beliefs, and school performance as such and in relation to gender; Study II examined the generalizability of goal orientations, causality beliefs, and their relationships across different cultural backgrounds; Study III investigated the influence of the instructional condition on differently oriented students' situational appraisals and task performance; and Study IV explored the role situational appraisals play in mediating the influence of goal orientations and causality beliefs on task performance, as well as gender differences in these effects and on variable means.

The role of achievement goal orientations was examined from both variable-centered and person-centered perspectives. Several types of goal orientations and configurations of goal orientations were identified. The results of the empirical studies showed that different achievement goal orientations were uniquely associated with criterion variables such as action-control beliefs, self-perceptions, self-reported learning strategy use, situation-specific motivational judgments, and task-performance. Findings from the person-centered analyses paralleled these results. For the most part, these results concurred with those of prior studies. The types of goal orientations identified were not dependent on gender or nationality, although group differences were found for variable means. Regarding the effects of cultural background, the results showed variation in how goal orientations were associated with certain types of action-control beliefs.

Keywords: Motivation, self-regulation, achievement goal orientations, school achievement, task performance, situational construals

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OPPIMISTA, SUORIUTUMISTA VAI SELVIYTYMISTÄ?
Tavoiteorientaatiot ja niiden yhteys tehtäväkohtaiseen motivaatioon ja suoritukseen

Tiivistelmä

Tutkimuksen tarkoituksena oli tarkastella minkälaiset yksilölliset tekijät vaikuttavat oppilaiden tehtäväkohtaiseen motivaatioon ja suoritukseen. Empiirisen työn taustalle esitettiin teoreettinen malli itsesäätelyn mekanismeista ja prosesseista oppimis- ja suoritustilanteissa. Lähtöajatuksena oli, että oppilaiden tilannetulkinnat ja niitä seuraava toiminta ovat paljolti riippuvaisia oppilaiden henkilökohtaisista tavoitteista ja pyrkimyksistä. Oppimiseen ja suoriutumiseen liittyvien suuntautumistapojen, tavoiteorientaatioiden, oletettiin heijastavan erilaisia keskeisiä tapoja lähestyä oppimis- ja suoritustilanteiden asettamia haasteita.

Neljän empiirisen tutkimuksen avulla selvitettiin minkälaisia tavoiteorientaatioita ja tavoiteorientaatioprofiileja voidaan tunnistaa peruskouluikäisillä oppilailla ja miten erilaisen tavoiteorientaatioprofiilin omaavat oppilaat eroavat toisistaan suhteessa motivationaalisiin uskomuksiin, tilannekohtaiseen motivaatioon sekä koulu- ja tehtäväkohtaisiin suorituksiin. Ensimmäisessä osatutkimuksessa tarkasteltiin tavoiteorientaatioiden, motivationaalisten uskomusten ja koulumenestyksen välisiä yhteyksiä sellaisenaan sekä suhteessa sukupuoleen. Toisessa osatutkimuksessa arvioitiin tavoiteorientaatioiden ja kausaalikäsitysten sekä näiden keskinäisten yhteyksien yleistettävyyttä suhteessa kulttuuritaustaan ja kansallisuuteen (otoksissa oppilaita Japanista, Kroatiasta ja Suomesta). Kolmas osatutkimus tarkasteli erilaisen suoritustilanteen vaikutusta eri tavoin orientoituneiden oppilaiden tilannekohtaiseen motivaation ja suoritukseen. Neljännessä osatutkimuksessa arvioitiin miten ja missä määrin tilannekohtainen motivaatio välittää tavoiteorientaatioiden ja kausaalikäsitysten yhteyksiä suoritukseen.

Tulokset osoittivat, että eri tavoin orientoituneet oppilaat eroavat toisistaan sinä, miten he arvioivat itseään oppilaina, miten he kokevat erilaiset suoritustilanteet sekä miten he suoriutuvat yksittäisissä tehtävissä ja koulussa yleensä. Jo pelkkä suoritustilanteen erilainen ohjeistus heijastuu oppilaiden tilannekohtaisiin tulkintoihin

ja motivaatioon. Esimerkiksi osaamista ja menestystä korostavan suoritustilanteen kokivat kielteisimmin juuri ne suorituskeskeiset oppilaat, joiden tavoitteisiin kuuluivat epäonnistumisen välttäminen ja menestyminen muita paremmin. Yllättävän suuri osa oppilaista ilmoitti välttelevänsä oppimis- ja suoritustilanteita kaiken kaikkiaan ja pyrkivänsä selviämään koulutöistä mahdollisimman helpolla.

Tavoiteorientaatioiden ja motivationaalisten uskomusten väliset yhteydet olivat pääsääntöisesti samankaltaiset eri kansallisuutta edustavilla lapsilla, joskin joitakin kulttuurispesifejä erojakin löytyi. Sukupuolen suhteen erot olivat selkeämmät ja johdonmukaisemmat. Tytöt olivat keskimäärin poikia oppimishakuisempia ja pojat tyttöjä suoritus- ja välttämissuuntautuneempia. Tytöt myös menestyivät tehtävissä hieman poikia paremmin, vaikka poijlla oli vahvempi usko omiin kykyihinsä.

Yhteenvetona voidaan todeta, että peruskouluikäisillä voidaan selkeästi tunnistaa erilaisia tavoiteorientaatioita ja että ne heijastavat sitä miten oppilaat kokevat oppimis- ja suoritustilanteet ja miten he asennoituvat koulutyöhön. Tilannekohtaiset motivationaaliset tekijät, kuten kiinnostuneisuus, itseluottamus ja ahdistuneisuus, välittävät tavoiteorientaatioiden yhteyksiä suoritukseen.

Avainsanat: Motivaatio, itsesäätely, tavoiteorientaatiot, koulumenestys, tehtäväsuoritus, tilannetulkinnat

To the Memory of My Father

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I would not be who I am and where I am without the unconditional love and support of my wife Minna. Everyday, she and my two wonderful daughters, Milena and Alissa, remind me about the important things in life. Thank you for being there.

– I love deadlines. I specially love the swooshing sounds they make as they fly by.
Douglas Adams

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1 INTRODUCTION

> Meaning is the critical determinant of motivation. Whether or not persons will invest themselves in particular activity depends on what the activity means to them. Persons, it may be assumed, characteristically bring a certain package of meanings with them into a situation, which determines their behavior in the particular situation at hand. There are also features of any given situation that affect the meanings that may arise there for the person. It is these meanings that determine personal investment. (Maehr, 1984, p. 123)

The central claim of the present work is that the more we know about students' motivational tendencies in terms of the goals and outcomes they prefer and pursue in academic contexts, the better we understand their classroom behavior. Examining factors that influence students' construals in learning and achievement situations and the consequences of those construals in terms of students' task-related experiences and behaviors is thus the aim of this study. Even at the risk of appearing naïve and simplistic, I will set the stage for further discussion by describing the core aspects of the theoretical framework with the help of a story-like illustration. What underlies this illustration is an elaborated version of the model of adaptive learning originally proposed by Boekaerts (see 1991; 1992; 1993) and further developed by Boekaerts and Niemivirta (2000).

1.1 Self-regulation in learning and performance

According to the model of adaptive learning, individuals inherently regulate their behavior in terms of two priorities. On one hand, they seek to extend their knowledge and gain competence in order to expand their personal resources, and, on the other hand, they seek to maintain their available resources and prevent the loss of personal well-being (Boekaerts, 1993). Which regulative route is followed depends on how the event or situation confronting the individual is appraised, and on how that appraisal relates to the person's available resources. The psychological significance of any given situation is thus a critical determinant of how people respond to the situation, and the psychological significance of the situation is a product of both the person and the situation (E. T. Higgins, 1990; Lazarus, 1968).

From appraisals to motivated action

The process of situational "meaning making" proceeds through two levels of *appraisals*, primary appraisals and secondary appraisals, respectively (Lazarus &

Folkman, 1984; Smith & Ellsworth, 1985).[3] While primary appraisals concern the extent to which any given situation or event is considered subjectively relevant (e.g., How important is this situation to me?), secondary appraisals concern the person's options and resources for coping with the encounter (e.g., Can I deal with this situation?). These appraisals can further be divided into various components. The key components of primary appraisals are motivational relevance and motivational congruence (Frijda, 1986; Scherer, 1984b; Smith, Haynes, Lazarus, & Pope, 1993). Motivational relevance refers to the extent to which the situation or event is seen to touch on the person's personal goals or concerns. Motivational congruence, in contrast, reflects the degree to which the encounter is seen to be consistent or inconsistent with one's goals or concerns. Of the several types of secondary appraisal components identified in the literature, the most relevant in the present context are accountability, controllability, future expectancy, and task-focused and self-focused coping potential (Lazarus & Folkman, 1984; Smith & Lazarus, 1993). While the outcome of accountability judgments determines who (oneself or someone else) is to receive the credit or blame for the encounter, the other components relate to the evaluation of the potential for influencing the situation in one way or another. Controllability, then, reflects the extent to which the situation or event is seen to be under or out of one's control, whereas future expectancy refers to the perceived possibilities for changes in the situation irrespective of who or what might produce the changes. Task-focused and self-focused coping potential reflect the perceived prospects of either directly acting on the encounter to bring the situation in line with one's goals, or psychologically adjusting to the encounter, for example, by means of regulating one's prevailing emotional state. Consequently, although each of these appraisal components could be considered separately, it is rather the resulting configuration of these appraisals that dictate the nature of the subsequent outcomes – specific emotions, motivational states, and behavioral intentions or action tendencies (cf. Frijda, 1988; Scherer, 2001). For example, a motivationally relevant but incongruent situation with high perceived controllability, high future expectancy, and a high task-focused coping potential would likely result in experiences of challenge, sustained coping, and effortful optimism, whereas a motivationally relevant but incongruent situation with high controllability, low future expectancy, and low task-focused coping potential would more probably result in frustration, disengagement, and hopelessness (Smith, 1991; Smith & Kirby, 2001; Smith & Lazarus, 1990, 1993).

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[3] For related views, see Sherer (1984a; 1984b) and Frijda (1986)

In this context, it is important to point out that the very construct of the primary appraisal makes sense only when the situation or event is considered in relation to what the person wants or desires . In other words, the question of personal relevance or importance cannot be evaluated without reference to the person's goals and the implications of the situation for those goals. This leads to the fact that objectively identical circumstances could be appraised in a very different manner by individuals pursuing different goals. Thus, the key to understanding individual differences in appraisals lies in knowing more about the antecedents of appraisals.

Antecedents of appraisals

Two classes of factors play an essential role in determining individual differences in appraisals: individual factors such as goals, beliefs, knowledge, and skills, and situational factors such as the constraints and affordances provided by the actual or perceived conditions (cf. Smith & Lazarus, 1990; Smith & Pope, 1992). Imagine, for example, a situation in which an upcoming math quiz is announced to a sixth-grade class. The students have already learned that such a situation encompasses certain overall features that are common to everyone. For example, the students are expected to work individually; they are not allowed to discuss the quiz or otherwise consult with other students; no books or exercise books are to be used, and so on. Despite these common features, three students, Andy, Frank, and Tim, react to the situation very differently: Andy and Frank are both very excited, whereas Tim seems quite anxious. However, although Andy and Frank both appear enthusiastic, they are so for different reasons. Andy is often seen as very competitive and, as a successful math student, he likes to announce his achievements publicly to the class. Frank also is very good in math, but in contrast to Andy, he does not care to show this ability off. He really enjoys doing math and always seeks to understand the new subjects studied in the class. Thus, in contrast to Andy, who perceives the quiz as a potential means for demonstrating his abilities to the others, Frank views the situation as a great opportunity to test his current knowledge on the subject. With Tim, the situation is entirely different. Despite the fact that he is not a poor student in math, he worries about how he might appear in the eyes of the other students. For him, the quiz is a serious threat, since the devastating possibility of public failure lurks around the corner; the last thing he wants is to look stupid in front of his classmates.

This simplified scenario illustrates how differently the students can view objectively identical circumstances depending on what end-states they desire and what they think of themselves and the situation. Andy, Frank, and Tim differ in terms of how they orient themselves to the situation. Andy seeks to demonstrate his

competence, Frank seeks to verify his competence, and Tim seeks to avoid a potential demonstration of incompetence. Moreover, Andy and Frank both feel confident about themselves and believe that they will do well on the quiz, while Tim has some serious doubts about his potential success. Finally, while Andy believes that success in the task requires acquired ability, Frank thinks that it is rather effortful engagement that will result in successful performance. Just like Andy, Tim also believes that ability is a necessity here, but unlike Frank, he thinks that effort coupled with failure suggests low ability. In sum, Andy, Frank, and Tim differ from each other in terms of what they desire, how they see themselves, and how they think the "world operates".

Andy's and Frank's appraisals do not necessarily differ much from each other. They both view the situation as motivationally relevant and congruent with high task-focused coping potential and high future expectancy. Even the likely outcomes of their appraisals, feelings of challenge, high situational interest, high self-efficacy, and effortful optimism, could be considered identical. Yet, because of the differences in their goal tendencies and causality beliefs, they assign somewhat different meanings to the situation. This, in turn, is what makes the difference in terms of how they will approach the task. Andy seeks to demonstrate his competence, and because he thinks that fast performance with good results indicates competence, he will approach the task with an emphasis on speed. Frank, in contrast, wants to test his current knowledge, and because he believes that thorough and effortful work makes the difference in performance, he will approach the task with an emphasis on accuracy. Their lower-level situational goals (try to be fast vs. try to be accurate) can thus be seen as the means serving their higher-level tendencies (seek to demonstrate competence vs. seek to verify competence).

Once again, Tim's situation is different. Mostly because of his doubts about his capabilities, Tim appraises the situation as motivationally incongruent yet relevant (i.e., a threat to his well-being). Since he wants to avoid looking incompetent, but believes that he will not be able to do the task well (low task-focused coping potential), he seeks to find ways to help dampen the implications of potential failure (self-focused coping). One way of engaging in such anticipatory self-protective behavior is to create prospective excuses for a possible failure. For this purpose, Tim then claims handicaps (e.g., by saying that he does not feel good and cannot focus on the task) and even withdraws effort in order to blur the link between poor performance and low ability.

Summary

The above overview provides one way to look at the dynamics of students' motivation and achievement-related behavior. Although being presented in an overly simplistic manner, the model aims to point out factors that play a significant role in determining how students approach learning and performance situations, and what sort of processes underlie the dynamics of their engagement. The key arguments can be summarized as follows (see Figure 1).

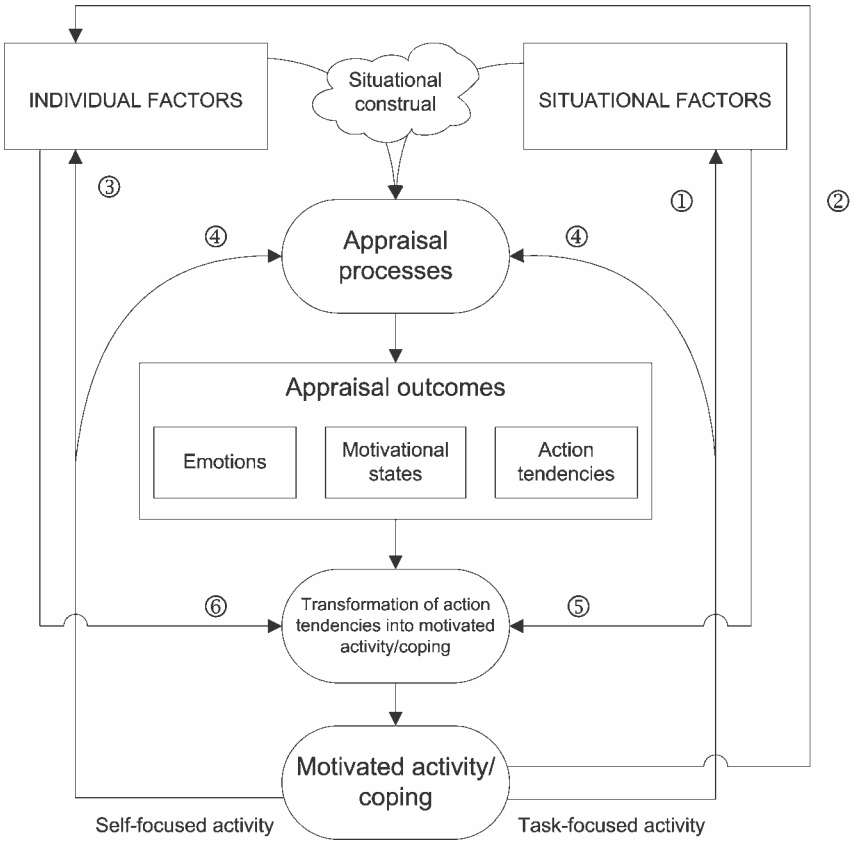

FIGURE 1: Model of self-regulation in learning and performance. Basic processes are indicated by numbered arrows. These include ① task –focused activity aimed at attaining the task-relevant goal; ② task –focused activity aimed at increasing personal knowledge or skills; ③ self-focused activity aimed at restoring emotional balance (e.g., the employment of self-protective strategies); ④ the constant re-appraisal of the ongoing situation (e.g., internal and external feedback loops); ⑤ the facilitating or impeding influence of situational factors (e.g., tools or affordances) on goal striving processes; ⑥ the facilitating or hindering influence of individual factors (e.g., volitional skills and abilities) on goal striving processes.

Classroom events are comprised of frequent unfolding episodes that focus on learning and performance. From the student's point of view, these episodic events can also be seen as coping situations; that is, situations packed with challenges, expectations, and demands that measure the availability and sufficiency of the student's personal resources. When students encounter such a situation, they first identify and interpret the features of the situation. The resulting situational construal, which is a function of the students' prior experiences, goals, and beliefs (theory) and the situation's objective features (data), then influences how the students appraise the event's subjective relevance and their personal resources for coping with it. The appraisals, in turn, result in outcomes such as emotions, motivational states, and action tendencies that set the stage for further action. Note, however, that besides influencing the initial appraisals, intraindividual factors also influence how situational goals and behavioral intentions are translated into action. The availability of relevant knowledge, an appropriate repertoire of strategies, and volitional efficiency are all important in determining the extent to which individuals' can generate applicable plans and initiate, direct, and maintain their subsequent behavior. It is here that motivation (goal choices and their determinants) transforms into volition (goal striving and its determinants).

Now that the theoretical ground for further discussion has been laid out, I will proceed with a more detailed examination of those intraindividual antecedents of appraisals that are considered most important in the present context, achievement goal orientations, or, individuals' preferences for certain goals and outcomes.

1.2 Goal orientation

The research on achievement goal orientation largely originates from the works of Nicholls (Nicholls, 1984) and Dweck (Dweck & Elliott, 1983). Their theorizing was grounded on a constructive criticism of the prevailing motivational theories, and the empirical evidence to support their arguments came from reinterpretations of prior research on need achievement (Atkinson, 1964), test anxiety (Mandler & Sarason, 1952), social learning (Rotter, 1954), and learned helplessness (Abramson, Seligman, & Teasdale, 1978). Both Dweck and Nicholls defined achievement motivation as *the pursuit of goals relating to increases in competence and judgments of competence*.

Goals, goal states, and goal orientations

Although neither Dweck (Dweck & Elliott, 1983) nor Nicholls (Nicholls, 1984) was very explicit in defining the concept of goal, they both described achievement goals

in terms of the *purposes* for which individuals engage in achievement behavior. Moreover, they considered achievement goals as something individuals adopt in achievement situations.

In Nicholls' (1984; 1989) work, the key issue was how individuals define success in achievement situations. Based on his work on ability conceptions, Nicholls (1984) argued that individuals can define success either in a self-referenced fashion (e.g., in terms of learning something new or performing better than before) or based on normative comparison (e.g., doing better than others). Thus, when individuals seek to increase competence in the former sense, they are said to be *task-involved*, and when they seek to demonstrate competence in the latter sense, they are said to be *ego-involved*. These particular *goal states* were assumed to be elicited in part as a function of the situational setting (e.g., competitive vs. individualized task instruction) and differentially to influence further task choice and attainment level.

Although Nicholls (1984) was very explicit in defining actualized motivation in terms of situationally induced goal states (i.e., task-involvement vs. ego-involvement), his own empirical work focused mainly on individual differences in generalized goal tendencies, or, what he called, motivational orientations. Nicholls (1989) argued that while task- and ego-involvement refer to two situationally induced conceptions of success, *task* and *ego orientations* reflect individual differences in the *commitment to those criteria of success*. These orientations were then to be associated with individuals' perceived causes of success, approaches to studying, and to other educationally relevant outcomes such as the role and valuing of schooling (e.g., Meece, Blumenfeld, & Hoyle, 1988; Nicholls, Patashnick, Cheung, Thorkildsen, & Lauer, 1989; Nicholls, Patashnick, & Nolen, 1985; Nolen, 1988; Thorkildsen & Nicholls, 1998).

Dweck's most influential empirical work focused on situationally induced goals (Elliott & Dweck, 1988). These studies used a design in which the value and salience of specific goals were first experimentally induced and then the effects of these manipulations were studied in relation to, for example, participants' task choices, strategy use, and attributions. The underlying assumption was that certain situational cues would uniformly affect the perceived purpose for task engagement for all (or most) participants. That perceived purpose (e.g., mastery vs. performance), in an interaction with certain moderating individual factors (e.g., perceived competence), would then generate specific response patterns.

Although this work suggests that Dweck and her colleagues (Dweck, 1986; Dweck & Elliott, 1983; Elliott & Dweck, 1988) considered achievement goals in terms of situationally fluctuating perceived purposes for engagement (which, when

adopted in achievement situations, would transform into particular goal states), they did also consider goals in terms of individual differences in goal preferences (e.g., Bandura & Dweck, 1985; Farrell & Dweck, 1985, as cited in Dweck, 1986). In these studies, however, achievement goals were measured indirectly by having students select from a list the kind of task they wanted to work on (e.g., learning goal task, challenging performance goal task, and unchallenging performance goal tasks). An approach focusing on participants' motivational choices was meant to parallel the kind of design Dweck and others used in their experimental work (C. S. Dweck, personal communication, July 2, 2003).

It was only somewhat later that Dweck made explicit remarks about how achievement goals were construed in those previous studies. First of all, she (Dweck, 1992) explicitly differentiated specific goals, the "outcomes individuals are striving for", from "more superordinate classes of goals that are behind the particular outcomes individuals strive for" (p. 165). She also pointed out that goal adoption emerges as a function of individual differences and situational factors: "People bring to a situation certain goal tendencies, but goal tendencies can also be fostered by the situation (e.g., when it provides cues that increase the salience or value of particular goals)" (p. 166). This view was later elaborated further: "[V]irtually all people share the basic classes of goals…. People differ, however, in the relative emphasis they place on them and on the means they use to pursue them" (Dweck, 1996, p. 363).

Despite these later conceptual clarifications, the variation and imprecision of Dweck's (Dweck & Elliott, 1983) and Nicholls' (Nicholls, 1984) original conceptualizations probably had a bearing on the fact that not only did the succeeding research use different terms interchangeably (e.g., achievement goals, goal orientations, motivational orientations), but also provided rather broad definitions of the given constructs. For example, Meece et al. (1988) defined goal orientations as "a set of behavioral intentions that determine how students approach and engage in learning activities" (p. 514), whereas Ames (1992) suggested that an achievement goal defines "an integrated pattern of beliefs, attributions, and affect that produces the intentions of behavior…and that is represented by different ways of approaching, engaging in, and responding to achievement-type activities" (p. 261).

Dweck's (1992) subsequent emphasis on acknowledging the different levels of goals (i.e., specific outcomes versus purposes of engagement) was shared by some researchers (e.g., Miller, Greene, Montalvo, Ravindran, & Nichols, 1996), but it was not until the mid nineties that the view was adopted for explicitly conceptualizing the differences between goals and goal orientation. In line with Dweck's differentiation, Urdan (1997) argued that goals reflect the proximal and specific performance

objectives one may seek to attain, whereas goal orientation reflects the reasons for attaining those objectives. For example, one may seek to get an A in an exam for different reasons: as an index of learning or in order to prove one's competence. These two purposes then refer to two different goal orientations, the mastery and performance goal orientations, respectively.[4]

In an attempt to escape from the fact that the above differentiation could also be formulated in terms of hierarchically ordered means and goals (i.e., the lower-order goal of getting an A being a means to attain the higher-order goal of proving one's competence), Pintrich (2000a) emphasized the schema-like nature of goal orientation. He argued that instead of just reflecting more general goals associated with achievement tasks, goal orientation represents "a general orientation to the task that includes a number of related beliefs about purposes, competence, success, ability, effort, errors, and standards" (p. 94). Although this view as such is analogous to that of Urdan (1997), it adds a twist. Namely, Pintrich (2000a) further contended that this perspective permits the conceptualization of goal orientation[5] as a structured knowledge network that links the various elements described above, and in which "nodes" display different levels of activation as a function of individual and contextual factors. This echoes the view put forward by Niemivirta (1998), who argued that "people with different types of predominant goal orientations can be characterized in terms of their chronically accessible goal preferences and the distinctive organization of the interrelations among them and the psychological features of the situations" (p. 6).

Elliot (1999; Elliot & Thrash, 2001) has recently criticized these conceptions for being too broad and indefinite. He maintains that the above views are limited in that the achievement goal construct is construed as an "omnibus combination of variables" (p. 141) and that they mix "motivational constructs per se and the processes/outcomes that tend to be implicated in the context of motivated action" (p. 142). Alternatively, Elliot's (1999) own definition considers achievement goals to be goals in which the focal end-state is competence. Thus, the concept of achievement goal can be defined as a cognitive representation of a competence-based possibility that an individual seeks to attain. These competence-based possibilities are further limited to alternatives that can be differentiated along two basic dimensions: according to how competence is defined (i.e., what referent is used for evaluating

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[4] Harackiewicz and Sansone (1991) use the term purpose goals with reference to higher-order goals and the term target goal with reference to specific goals.

[5] I have replaced Pintrich's (2000a) term "achievement goals" with the term "goal orientations" in order to differentiate this sort of schema-like unit from specific achievement-related goals.

competence) and according to how competence is valenced (i.e., whether the competence-based possibility is approached or avoided).

It is clear that Elliot's exact definition makes sense in that it keeps reasons and processes associated with the aim separate from the aim itself. In doing so, however, it has a different scope, and therefore cannot be considered as a pure "alternative" to Urdan's and Pintirch's views. This is already illustrated in the differing terminology; Urdan's and Pintrich's "goal orientation" reflects an individual difference variable that is separate from specific goals which, in turn, are exactly what Elliot's "achievement goals" are all about. Moreover, the same explanatory function (i.e., the prediction of goal adoption) Urdan and Pintich assign to goal orientations Elliot allocates to needs and motives (see Elliot, 1999; Elliot & Church, 1997; Elliot & Thrash, 2001).

In sum, it is clear that the research on achievement goals has suffered from imprecise and vague conceptualizations. The achievement goal construct originally introduced by Dweck and Nicholls has been defined and used in numerous different ways over the past decades; sometimes it is considered in terms of the specific goals students adopt in achievement situations, sometimes in terms of general tendencies that influence goal adoption as well as a variety of processes observable in achievement behavior. The recent attempts to clarify the conceptual framework have managed to make the issue a focal point, but a general consensus is still missing. Most importantly, the definitions and relations of specific goals, states associated with the pursuit of goals (i.e., goal states), and more general tendencies influencing goal adoption (i.e., goal orientations) have yet to be specified.

Logical and meaningful definitions of constructs are naturally important aims in and of themselves, but since they underlie empirical operationalizations, they also have far-reaching empirical consequences. In achievement goal research, this is evidenced in the variety of goals considered relevant to explaining achievement behavior.

Classes of goals

The explicit distinction between the notions of *increases* in competence and *judgments* of competence lead Dweck and Nicholls to specify two main classes of achievement goals: mastery and performance goals, respectively.[6] The pursuit of mastery goals was seen to reflect the aim of acquiring knowledge or mastering something new, and performance goals were considered to imply an interest in ob-

[6] These two classes of goals have also been labeled as task and ego goals or mastery and performance goals (see Ames, 1992).

taining favorable judgments of one's performance. Thus, with mastery goals, learning is an end in itself and the criteria for success are self-referenced, while with performance goals, mastery and achievement are means to an end, and the criteria for success is derived from normative comparison. Regarding performance goals, both Dweck and Nicholls made a conceptual distinction between the aims of *approaching* favorable judgments and *avoiding* unfavorable ones, but, especially in terms of empirical operationalization, this separation was never made explicit. Consequently, the two modes were collapsed into one general class of performance goals.

Later, Nicholls incorporated avoidance as a motivational tendency into his conceptualization, but instead of linking it to performance goals he proposed yet another distinct class of goals. In studies focusing on individual differences in goal preferences (i.e., motivational orientations), Nicholls and his colleagues introduced *work avoidance goals* which reflected students' tendencies to avoid work and goof off. [7] Although these goals were not explicitly linked to the different conceptions of success (i.e., increase in competence vs. demonstration of competence) that, according to Nicholls, underlay differences in goal adoption, Nicholls and his colleagues argued that such goals clearly needed to be taken into account in order to fully capture the variation in children's achievement-related behavior. Their empirical findings supported this view by demonstrating how each type of goal preference differentially predicted achievement-related outcomes.

Almost a decade later, Skaalvik, Valås, and Sletta (1994), and Elliot and Harackiewicz (1996) independently pointed out that the nature and function of performance goals would be more accurately understood if they were partitioned into separate approach and avoidance components. Thus, grounding their work on the classical distinction between approach and avoidance tendencies (Atkinson, 1957; Lewin, 1935), they made Dweck's and Nicholls' original implicit notion explicit, and maintained that the adoption of *performance-approach goals* (i.e., the aim of demonstrating competence) and *performance-avoidance goals* (i.e., the aim of avoiding judgments of incompetence) would have different correlates and be-

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[7] To be accurate, the three orientations Nicholls and his colleagues focused on were considered as rather global tendencies, and as such were comprised of more specific subcomponents. When assessing these tendencies, they formulated several sub-scales tapping specific goals, and then collapsed these into higher-order scale composites. For example, *Understanding* ("I feel most successful if I learned something interesting") and *Hard Work* ("I feel most successful if I work hard all day") reflected the task orientation (mastery); *Superiority* ("I feel most successful if I score higher than other students"), *Easy Superiority* ("I feel most successful if I do well without trying") and *Avoid Inferiority* ("I feel most successful if people don't think I am dumb") reflected the ego orientation (performance); and *Work Avoidance* ("I feel most successful if all the work was easy") and *Alienation* ("I feel most successful if I get out of some work") reflected the work avoidance orientation (Atkinson, 1964).

havioral consequences. The validity of this trichotomous framework subsequently received support from both experimental work and from studies focusing on self-reported goals (Elliot & Church, 1997; Elliot & McGregor, 1999; Elliot, McGregor, & Gable, 1999).

The separation of approach and avoidance tendencies was recently extended to mastery goals as well. Both Elliot (Elliot, 1999; Elliot & McGregor, 2001) and Pintrich (2000c) described a 2 × 2 achievement goal framework, which included *mastery-approach goals* and *mastery-avoidance goals* in addition to performance-approach and performance-avoidance goals. This seemingly counterintuitive classification suggests that while mastery-approach goals entail striving to understand and master a task, mastery-avoidance goals entail striving to avoid *mis*understanding and *not* mastering the task. Thus, in terms of Elliot's (1999) theorizing, mastery-avoidance goals differ from mastery-approach goals in terms of how competence is valenced (i.e., focus on approaching a desired possibility vs. focus on avoiding an undesired possibility) and from performance-avoidance goals in terms of how competence is defined (i.e., in reference to an absolute or intrapersonal vs. normative standard). Consequently, mastery-avoidance goals differ from performance-approach goals in terms of how competence is both defined and valenced. To date, the empirical evidence supporting this conceptualization is limited.

Wentzel (1989; 1993) was among the first to criticize achievement goal research for employing too narrow a view on achievement-related motivation (see also Maehr, 1984). She argued that in addition to academic goals, social goals also play an important role in motivating students in achievement situations. In a series of studies, she demonstrated how the pursuit of goals related to prosocial behavior and social responsibility was associated with the pursuit of academic goals and with achievement. On empirical grounds, Wentzel then argued that academic and social goals should not be categorically disentangled, since they may contribute to achievement behavior in an integrated manner by being linked to each other either hierarchically (i.e., one serving the other) or complementarily (i.e., both serving the same higher-order purpose).

Although this view has been shared by others (e.g., Covington, 2000; Urdan & Maehr, 1995), empirical work linking social and academic goals has been quite infrequent. One notable exception is the recent work of Dowson and McInerney (2001; 2003), who, in a study focusing on students' naturally emerging goals as inductively derived from student interviews and classroom observations, found support for the existence of both avoidance goals (*á la* Nicholls) and social goals (*á la* Wentzel). In fact, they were able to identify several different types of social goals

that were linked to achievement behavior. These included goals for social affiliation, social approval, social responsibility, social status, and social concern.

As the above overview shows, a multitude of goals have been considered relevant to explaining achievement behavior. It is also evident that the goals considered represent very different types of desires. This disparity is partly due to theoretical diversity and the fact that the definitions of achievement goals have varied considerably across the different studies and research programs (cf. Murphy & Alexander, 2000).

Assessment

The assessment of goals and goal adoption has mainly been conducted by means of self-reports and questionnaires or through experimental manipulation. The studies using experimental manipulation vary depending on whether the focus is on assigning specific goals or on inducing different motivational states. In studies focusing on specific goal conditions, instructions are used to highlight the salience of particular goals. Sometimes a very subtle change in the wording is sufficient. Consider, for example, the following excerpt from Schunk's (1996) study on goal and self-evaluative influences on children's motivation and performance (italics added):

> "While you're working it helps to keep in mind what you're trying to do. You'll be trying to solve fraction problems where the denominators are the same and you have to add the numerators" [performance goal condition]
>
> "While you're working it helps to keep in mind what you're trying to do. You'll be trying to *learn how to* solve fraction problems where the denominators are the same and you have to add the numerators" [learning goal condition]

In this case, the minor difference in the wording turned out to be surprisingly effective; the learning goal condition, as opposed to the performance goal condition, led to enhanced motivation and higher achievement outcomes.

Studies that seek to induce specific motivational states – usually task- or ego-involvement – use instructions that highlight certain functions and implications of the task. Task-focused instructions aim at directing participants' attention to the intrinsic value of the task, emphasizing learning and enjoyment as opposed to normative comparison. Ego-involving instructions, in contrast, focus participants' attention on the evaluative function of the task, relative ability, and perceptions of competence. Here, the instructions differ from each other in terms of the types of cues and messages used that supposedly influence the participants' perceptions and interpretations of the task. Passages from Graham and Golan's (1991) instructions illustrate this well:

> "Many people make mistakes on these puzzles in the beginning but get better as they go along. When people see the puzzles as a challenge, it makes them try harder and have more fun along the way. The next activity is a lot like this one. So if you just concentrate on the task, try to see it as a challenge and enjoy mastering it, you will probably get better as you go along." [task-focused instruction]
>
> "From how you did on the puzzles, I have a pretty good idea of how good you are in this type of puzzle-solving compared to other kids your age. The next activity is a lot like this one in that people are either good at these activities compared to other kids their age or they are not. So how you do will tell me something about how good you are at this kind of task." [ego-focused instruction]

As in the previous example, the above manipulation managed to generate the anticipated effects; the ego-involving condition led to poorer recall in a levels-of-processing task, especially when deep processing was necessitated.

Despite the similar effect, these two types of manipulations are nevertheless crucially different. In the former, the aim is to make the participants work toward a particular goal, while in the latter, the aim is to make the participants work under the influence of a particular psychological state. In a sense, then, the intended consequences of inducing motivational states are more comprehensive than those of assigning mere goals, and may thus result in more accentuated effects. Evidence exists that shows how the inducement of ego-involvement is likely to generate heightened self-awareness, concerns about public failure, worry about performance, and anxiety, among other things. Naturally, these types of effects may also take place when assigning a performance goal, but they are not directly implied in the manipulation scheme.

Another essential difference, which partly originates in the dissimilar experimental foci identified above, is that the manipulation of motivational states usually contrasts only two types of states (e.g., task and ego involvement). Assigned goals, instead, may include several different types of goals or even combinations of goals.

Regarding self-reports and questionnaires, the variation in how achievement goals are operationalized is much larger than that that of experimental work. In most studies, achievement goals have been operationalized in terms of conceptions of success (e.g., "I feel most successful when I learn something new", Nicholls et al., 1985) or in terms of the importance, interest and enjoyment attached to different types of desired outcomes (e.g., "It is important to me that I don't look stupid in my classes", Midgley et al., 1998). Surprisingly few scales include items that directly refer to goals. Even more startling is how often achievement goals have been assessed *retrospectively* (e.g., "One of my primary goals in this course was to improve my knowledge", Miller, Behrens, Greene, & Newman, 1993). This clearly is counterintuitive considering the fundamental future-oriented nature of the goal concept.

Another source of confusion is found in how aims or reasons have been directly associated with particular types of behavior. For example, instead of having participants rate the extent to which they agree with a desired end-state without a reference to action (e.g., "I want to look smart to my friends."), the end-state has been explicitly linked to a particular type of behavior (e.g., "I do the work assigned in this class, because I want to look smart to my friends", Miller et al., 1996). Sometimes an explicit claim is made about a realized action (I do the work assigned), but the reason for that action does not include a reference to a goal (because I'm interested in it). This type of operationalization is problematic because the same action is assumed irrespective of the type of reason. Consider, for example, the following items: "The reason I do my work in school is because I want to get better at it"; "The reason I do my work in school is because I want to look smarter than other students"; and "The reason I do my work in school is because I don't want to look stupid in my classes". Based on the principles of equifinality (e.g., Shah & Kruglanski, 2000), one might argue that all these alternatives would lead to equivalent outcomes, that only the reason for the action differs. In other words, the different reasons *per se* cannot be expected to result in different outcomes, since all alternatives already include the identical claim "I do my work".

In some cases this type of operationalization results in items that imply an outcome opposite to that then found in empirical work. For example, an item stating that "The reason I do my work is so others won't think I'm dumb" (Midgley et al., 1998) suggests that not wanting to appear incompetent results in enhanced academic engagement and perhaps even in better performance. However, this type of performance-avoidance goal has consistently found to be *negatively* associated with academic outcomes.

Irrespective of the type of assessment, achievement goals and goal orientations have been examined either from a *variable-centered perspective* or from a *person-centered perspective* (Bergman, 1998; Niemivirta, 2002a). In simple terms, the difference between these approaches is whether the analyses focus on looking at the relations between variables within a sample or on identifying similarities and differences between groups of individuals in relation to certain variables. In the person-centered approach, research problems and hypotheses are formulated in terms of individuals and value configurations, and individuals or groups of individuals are treated as the basic units of analysis. Profiles of variable values are thus of interest, not the variables as such. Variable-centered approaches, in contrast, focus on single variables or combinations of variables and their associations with other criteria. The basic assumption is that the measures of the relations among variables

studied *across* individuals are valid for the relations among the variables *within* the individuals.

With its focus on different types of goals or goal orientations and their relationships with other variables, the variable-centered perspective has been by far more common in achievement goal research. The person-centered approach has received less attention in the field (see, however, Meece & Holt, 1993; Pintrich & Garcia, 1991; Seifert, 1995b), although the potential utility of such a perspective has recently been acknowledged by several scholars (Hodge & Petlichkoff, 2000; Karabenick, 2003; e.g., Pintrich, 2000b; Valle et al., 2003). Considering how achievement goals and goal orientations are often conceptualized and discussed in terms of *different types of individuals* (e.g., "mastery-oriented students are likely to…"; "people with avoidance goals tend to…"), the bias towards the use of variable-centered methods seems somewhat groundless.

Consequences

The reason for discussing the assessment of goals and goal orientations before describing the correlates and consequences of goals and goal orientations is that recent empirical findings include some inconsistencies, which appear to result from the different ways of operationalizing and assessing goals and goal orientations. The most illuminating example of such variation is found in the work on the effects of performance goals. Until the distinction between performance-approach and performance-avoidance goals was made explicit, the conclusions concerning the consequences of performance goals were debatable. Even though performance goals had systematically been linked with maladaptive outcomes, some findings evidenced the opposite (e.g., Archer, 1994; Bouffard, Boisvert, Vezeau, & Larouche, 1995; Pintrich & Garcia, 1991). Subsequent work using measures of both avoidance and approach performance goals managed to shed light on this confusion, but new – or should I say, narrowed down – inconsistencies emerged. The situation did become clearer to the extent that *avoidance* performance goals were shown to be systematically associated with maladaptive outcomes. However, findings concerning approach performance goals were still not in full agreement; both maladaptive and adaptive outcomes and correlates were detected – and are still found (see below). Thus, the debate on whether performance-approach goals should be considered adaptive or maladaptive – and under what circumstances – continues (see Harackiewicz, Barron, Pintrich, Elliot, & Thrash, 2002; Kaplan & Middleton, 2002; Midgley, Kaplan, & Middleton, 2001). New attempts to resolve this inconsistency have been proposed; these include the consideration of multiple goals (Barron &

Harackiewicz, 2001) and more precise measures of different types of mastery and performance goals (Grant & Dweck, 2003).

Inconsistencies are also found when contrasting experimental studies with correlational work or with other experimental studies. Some experiments demonstrate superior performance when mastery goals are assigned (Graham & Golan, 1991; Schunk, 1996), while others do not (Barron & Harackiewicz, 2001, study 2; Elliot & Harackiewicz, 1996). Nor has the correlational finding showing a stronger link between performance–approach goals and performance than between mastery goals and performance been replicated in experimental work. This also is the case regarding the links between goals and interest; not one single goal condition has proved to be more effective than others in terms of enhancing task-related interest (Barron & Harackiewicz, 2001; Elliot & Harackiewicz, 1996). Clearly, goal orientations or self-set goals can not be equaled with experimentally assigned goals, and the type of manipulation or goal assignment used makes a difference.

Despite the fact that irregularities do exist in the findings regarding the consequences of different types of goals or goal orientations, some rather systematic effects can nevertheless be pointed out. Naturally, these results may also vary as a function of age, gender, and educational setting, but the overall picture is rather uniform. Accordingly, mastery goals or goal orientations have been associated with effective monitoring and metacognitive regulation (Ames & Archer, 1988; Dweck & Leggett, 1988; Meece et al., 1988; Meece & Holt, 1993; Middleton & Midgley, 1997; Nolen, 1988; Pintrich & Degroot, 1990; Pintrich & Garcia, 1991; Wolters, Yu, & Pintrich, 1996b), the use of deep processing strategies (Bouffard et al., 1995; Elliot et al., 1999; Graham & Golan, 1991; Greene & Miller, 1996; Kaplan & Midgley, 1997), motivation regulation (both in experimental, Elliott & Dweck, 1988; and correlational settings, Thorkildsen & Nicholls, 1998), interest, task value and enjoyment (Butler, 1987; Harackiewicz, Barron, Carter, Lehto, & Elliot, 1997; Harackiewicz, Barron, Tauer, Carter, & Elliot, 2000; Jagacinski & Nicholls, 1984; Jagacinski & Strickland, 2000), positive affective reactions (especially in sport settings, Jagacinski & Nicholls, 1984; Jagacinski & Strickland, 2000; Ntoumanis & Biddle, 1999; Seifert, 1995a; Smiley & Dweck, 1994), effective time management (Pintrich, 1989; Pintrich & Garcia, 1991), and help-seeking (Butler & Neuman, 1995; Newman, 1998; Ryan, Hicks, & Midgley, 1997; Ryan & Pintrich, 1997). Performance-avoidance goals or goal orientations have been linked with threat construals (McGregor & Elliot, 2002), test anxiety (Elliot & McGregor, 1999, 2001; McGregor & Elliot, 2002), superficial and disorganized study strategies (Elliot et al., 1999), lower performance (Elliot & Church, 1997; Elliot & McGregor, 1999; Elliot et al., 1999; Skaalvik, 1997), and lower self-concept and self-efficacy (Pajares, Brit-

ner, & Valiante, 2000). The positive outcomes attached to performance-approach goals or goal orientations include challenge construals, effort, persistence, and absorption while working on a task, (Elliot & Church, 1997; Elliot & Harackiewicz, 1996; Elliot & McGregor, 1999; Elliot et al., 1999; Harackiewicz, Barron, & Elliot, 1998; McGregor & Elliot, 2002; Middleton & Midgley, 1997), self-efficacy (Pajares et al., 2000), the use of meaningful strategies (Archer, 1994), and high performance, (Elliot & Church, 1997; Elliot & McGregor, 1999; Elliot et al., 1999; Harackiewicz et al., 1998; Harackiewicz et al., 2000), whereas the negative outcomes include superficial processing (Elliot et al., 1999), threat appraisal (McGregor & Elliot, 2002), and stress (Smith, Sinclair, & Chapman, 2002). Finally, avoidance goals or orientations have been linked to such maladaptive outcomes as lower performance, interest and enjoyment (Harackiewicz et al., 1997; Harackiewicz et al., 2000), low or superficial strategy use (Meece et al., 1988; Nolen, 1988), a lack of meaning attached to school work (Seifert & O'Keefe, 2001), as well as negative affects and external attributional patterns (Dowson & McInerney, 2001; Nicholls, Patashnick et al., 1989; Nicholls et al., 1985).

Different goals and goal orientations have also been linked with differences in perceived classroom goal structures and perceptions of the learning environment or instructional practices. Generally, studies focusing on elementary and high school students (although, see also Karabenick & Collins-Eaglin, 1997) have demonstrated a link between perceived classroom (or school) task goal structure and personal mastery goals, and between perceived classroom (or school) ability goal structure and personal performance goals (Kaplan & Midgley, 1999; Nolen & Haladyna, 1990; Roeser & Eccles, 1998; Roeser, Midgley, & Urdan, 1996). A recent study using the trichotomous goal framework (Church, Elliot, & Gable, 2001) found that college students' mastery goals were associated with the presence of lecture engagement (e.g., perceptions of the teacher adding interest to the lecture material) and the absence of evaluation focus (e.g., perceptions of an emphasis on evaluation and grading), performance-approach goals with evaluation focus, and performance-avoidance goals with evaluation focus and harsh evaluation (e.g., perceptions of a grading structure that is too difficult). Although these studies suggest that the perceived classroom goal structure influences students' personal goals, not the other way around, evidence of the opposite exists as well. For example, a study by Tapola and Niemivirta (2003) showed that students with different goal orientations not only perceive the learning environment differently, but also prefer different instructional practices. In either case, personal goal orientations seem to go hand in hand with the perceived classroom goal structure.

1.3 Other relevant constructs included

Since the present studies will focus on several constructs in addition to achievement goal orientations, a short description of the most relevant ones will be provided in the following (the discussion on action-control beliefs is slightly more detailed due to their more central role in the empirical work).[8]

Action-control beliefs (studies I, II, and IV)

In addition to achievement goal orientations, another important construct in the present work concerns action-control beliefs, the sets of beliefs we hold about ourselves in relation to our environment and the events taking place in that environment (Skinner, 1985; Skinner & Chapman, 1984). While actual control (control-related behavior) reflects the realized contingency between behavior and events, action-control beliefs refer to the extent to which an individual believes behavior-event contingencies to be under his or her control and through what means (Heckhausen & Schulz, 1995).

The conceptual framework adopted in the present work stems from an action-theoretical view of human behavior (Skinner & Chapman, 1984). This view places a special emphasis on distinguishing between agents, means, and ends when describing the dynamics of action. The *relations* between these core elements of action then serve as the objects of personal beliefs that underlie the construct of (perceived) action-control. Thus, in contrast to other influential conceptualizations of perceived control such as locus-of-control, causal attributions, learned helplessness, and self-efficacy, the present view focuses on three sets of interrelated beliefs that are conceptualized and assessed independently (Little, 1998; Little, Oettingen, Stetsenko, & Baltes, 1995; Little, Stetsenko, & Maier, 1999; Skinner, Chapman, & Baltes, 1988; Skinner, Wellborn, & Connell, 1990).

The first set of beliefs concerns the relations between causes (or means) and the outcome. These *causality beliefs*[9] are seen as reflecting a person's implicit theory or naïve model about "how things work in the world" – what factors cause certain events or what means are required to produce particular outcomes. For example, a

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[8] Due to changes in translations and conceptual developments in the field in general, some variation exists in the terminology used in the original studies. Causality beliefs are called means-ends beliefs in studies I and II; control expectancy is called control beliefs in Study I; academic withdrawal is called (lack of) action control in Study II; and mastery orientation is called learning orientation in studies I and II; For the sake of consistency, the discussion from here on will follow the terms described here.

[9] Causality beliefs have also been called as strategy beliefs or means-ends beliefs (Skinner et al., 1988; Skinner et al., 1990).

child might think that good grades in school (an outcome) are the result of effort expenditure or ability (means). Note that in this conceptualization no reference is made to the agent itself, but to agents in general. This is what differentiates causality beliefs from causal attributions. Causal attributions refer to individuals' retrospective explanations of the outcomes of their own behavior ("I failed in a test, because I did not try hard enough."), whereas causality beliefs reflect individuals' generalized beliefs about the causes of an outcome ("If a kid fails in a test, it is because he or she did not try hard enough."). Thus, these beliefs are not about the role of self as such, but about how the world operates.

As illustrated above, causal attributions refer both to the agent (I) and to the mean (effort). In the present conceptualization, beliefs about the relations between the agent and the means are considered without an explicit reference to the means–outcomes relation. Thus, while causality beliefs refer to the causal role of certain means, *agency beliefs* reflect the extent to which a person believes he or she possesses or has access to those particular means. For example, a child might think that he or she is smart and try hard without any explicit reference to the role these factors play in school achievement.

In contrast to agency beliefs, which make no claims about the attainment of outcomes, *control expectancy* refers to the direct reflection of the extent to which one thinks he or she can personally produce a desired outcome – or avoid an undesired one – without any reference to potential means. For example, a child might believe that he or she cannot get good grades, independently of what she considers to be the relevant means and whether she believes that she has the access to those means. Although on logical grounds, one might argue that control expectancies, as defined here ("I can obtain Y."), are reducible to a combination of causality beliefs ("X produces Y.") and agency beliefs ("I possess X."), functionally that is not likely the case. Following the theorizing of Kuhl (1984), a global assessment of the likelihood of attaining a goal (cf. control expectancy) may be an important determinant of making a commitment to an act, whereas causality beliefs and agency beliefs are more influential in the formation of appropriate action plans.

In the present work the main focus will be on causality beliefs. This is due to the theoretically intriguing link between causality beliefs and goal orientations. Earlier, I argued that an individual's emphasis on a certain achievement goal orientation in part reflects his or her understanding of what defines subjective success (if any) in achievement situations. This view states that people with different goal preferences differ in how they view the implications of certain outcomes (e.g., failure in a task being a sign of insufficient effort vs. a sign of incompetence), which in

turn implies that they may consider different factors as being responsible for those outcomes. In other words, they may hold different causality beliefs.

In a broader sense, this suggestion is far from novel. Dweck and her colleagues have consistently argued that children's implicit theories of intelligence influence the goals they adopt in achievement situations. Similarly, Nicholls and his colleagues have maintained that students' achievement goals and their conceptions of success are tightly associated. Although there are important differences between these views, we can nevertheless state that they all suggest that the meaning students attach to achievement situations partly grounds on their implicit theory of the dynamics of success or failure in achievement situations.

With regard to conceptual definition, "causality beliefs" are closely related to Nicholls' "causes of success". Some confusion arises, however, from the fact that on some occasions, Nicholls has argued that the criteria people have for success (i.e., goal orientations) determines which factors they identify as the causes of success (Nicholls, 1990), while on other occasions these two – both the criteria for and the causes of success – have been taken to reflect the same phenomenon (Duda & Nicholls, 1992):

> [T]ask orientation consists of the goal of improving one's skill or gaining insight or knowledge *and* the beliefs that, in order to succeed, students must work hard, attempt to understand schoolwork, and collaborate with their peers…[E]go orientation is defined by the goal of establishing one's superiority over others *and* the beliefs that success in school requires attempts to beat others and superior ability. (p. 290, italics added)

The association with Dweck's "implicit theory of intelligence" is less explicit. However, from a functional point of view, the different theories of intelligence can easily be seen to resemble particular types of causality beliefs. For example, one might suspect that children holding a belief that ability (or the lack of it) determines success (or failure) are also concerned with how their ability is judged by others (which is characteristic of entity theorists), whereas children holding a belief that effort (or the lack of it) is the key for success (or failure) are more likely to focus on testing and improving their competence (which is characteristic of incremental theorists). Thus, in Dweck's conceptualization, malleability refers to instability (an attribute also attached to effort) and fixedness refers to stability (an attribute also attached to ability).

Note, however, that this scheme only includes means or causes that are internal to the agent. In other words, external factors such as luck, the teacher, or task characteristics do not play any role in Dweck's conceptualization. In contrast, in the context of perceived control, these factors are considered to be of specific im-

portance. From this viewpoint, causality beliefs reflect a broader construct that potentially has more explanatory power than do implicit theories of intelligence.

The empirical work on causality beliefs has mainly focused on effort, ability, luck, powerful others, and unknown causes as the means or causes determining school achievement (Karasawa, Little, Miyashita, Mashima, & et al., 1997; Oettingen, Little, Lindenberger, & Baltes, 1994; Stetsenko, Little, Oettingen, & Baltes, 1997; Stetsenko, Little, Oettingen, & Baltes, 1995). Although the findings concerning the relationships among different types of causality beliefs as well as between causality beliefs and performance are generally in agreement, some variation exists that deserves explicit attention. Regarding interrelations, the studies demonstrate low or no correlation between effort and external causes and moderate to high correlation among the different external causes. Effort is usually found to correlate with ability and ability with external causes.

Most of the inconsistency can be found in how effort and ability are associated with other action-control beliefs and with performance indicators. However, in most cases, the variation in these relationships seems to be a function of the participants' ages and cultures. For example, the correlation between causality beliefs of effort and ability seems to decline slightly when children get older, while the associations between effort and ability beliefs and performance tend to increase over time. All in all, the relations between causality beliefs of effort and ability and performance (e.g., school grades) are rather modest; the correlations are around .2 and .3. For an overview of cultural differences, see Little (1998).

Academic withdrawal (studies II and III)

The concept of academic withdrawal refers to an individual's tendency to give up in or withdraw from demanding or difficult learning or performance situations. To some extent, academic withdrawal resembles Kuhl's (1984) concept of action control, which is defined as an individual's "ability to maintain and enact an action tendency the organism is committed to despite the impulsive nature of competing action tendencies" (Kuhl & Kraska, 1989, p. 344). According to Kuhl (1984), the inclination to mobilize the necessary amount of effort to control the enactment of an intention is influenced by both the perceived difficulty of controlling the enactment of the current intention and the perceived ability to control the enactment of the current intention. In a sense, AW then reflects the generalized tendency of the former, the perceived *inability* to overcome task-related obstacles. With respect to the model outlined in chapter 1.1, it is suggested that the generalized tendency to perceive difficulties in the face of challenging situations diminishes feelings of control and increases the likelihood of engaging in self-focused coping activity.

Fear of failure (study III)

Fear of failure has been considered a pivotal construct in two different research traditions: in test anxiety research and in the study of achievement motivation (see, Hagtvet & Benson, 1997). In the early work on test anxiety, anxiety was regarded as an acquired drive that is elicited by evaluative cues, and produces either task-relevant or task-irrelevant responses (Mandler & Sarason, 1952). Thus, test anxiety was originally seen to have the potential of either facilitating or debilitating performance. The later conceptualizations of test anxiety, however, focused on its debilitating aspect. For example, Liebert and Morris (1967) conceptualized the key indices of test anxiety, the interfering self-related cognitions in evaluative situations, in terms of worry, which they defined as the "primarily cognitive concern about the consequences of failing" (p. 975). Ever since, worry has played a key role in discussions of the nature and consequences of test anxiety (Zeidner, 1998).

What was lacking in these original views of test anxiety was motivational dynamics. This, in contrast, was at the core of how anxiety about failure was viewed in the achievement motivation theory. In Atkinson's (1957) theorizing, individuals' concerns about failure were formulated as a dispositional tendency to avoid failure, "a capacity for experiencing shame and humiliation as a consequence of failure" (p. 360). Thus, in contrast to the early views of test anxiety, Atkinson argued that anxiety about failure should always result in negative motivational outcomes.[10] In his view, "a disposition to be anxious about failure tends to make all activities in which performance is evaluated threatening to an individual" (Atkinson, 1964, p. 245).

In the present context, the fear of failure is seen as a generalized tendency to experience anxiety (i.e., to worry) whenever the risk of failing to meet certain evaluative standards is present. In terms of our general model (and in line with research on achievement motivation), individuals with a high fear of failure are likely to perceive evaluative situations as potential threats to their well-being. This preoccupation with failure (in line with research on test anxiety), is then likely to result in ruminative thoughts and distracted attention, and, potentially, in self-focused coping (e.g., self-handicapping or other forms of self-protective behavior; see below).

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[10] In his seminal paper on the subject, Atkinson (1957) did consider the possibility that in some instances, a high fear of failure might lead to *increases* in effort. However, he later retracted this statement and argued that the resultant motivation would always be negative when the motive to avoid failure was stronger than the motive to achieve success (Atkinson, 1964).

Self-esteem (study I)

There is no doubt that self-esteem – the person's global feelings of self-liking, self-worth, respect, and acceptance (Brown, 1993) – is one of the most important constructs in psychological and educational research (Baumeister, 1993; Kernis, 1995; Owens, Stryker, & Goodman, 2001). Following current socio-cognitive research, the maintenance of positive self-esteem is seen as a powerful motive guiding perception and behavior (Dunning, 2001). Although common to all humans, there are important differences in how people approach this task. Current research suggests that self-protection is more common among people with low self-esteem, whereas self-enhancement is more typical of people with high self-esteem (Baumeister, Tice, & Hutton, 1989). For example, it has been shown that people with low self-esteem are more likely to avoid threats to self-esteem by avoiding challenges (Covington, 1984), lowering expectations (Norem & Cantor, 1986; Pyszczynski, 1982), and engaging in self-handicapping (Rhodewalt, Morf, Hazlett, & Fairfield, 1991) than are people with high self-esteem. However, when self-threats are unavoidable, people with high self-esteem tend to display esteem-maintaining reactions such as the dismissal of a threat (e.g., by attributing a failure to something else, see Greenberg, Pyszczynski, & Solomon, 1982), compensation (e.g., inflating their self-views in other dimensions, see Greenberg & Pyszczynski, 1985), and downward comparison (e.g., comparing themselves with others with lower achievement outcomes, see Beauregard & Dunning, 1998).

The relevance of the research on self-esteem and self-esteem maintaining processes for the present view of self-regulation and learning is self-evident. In the process of self-regulation, we are continuously comparing our progress to some goal or standard, and the outcome of that comparison results in self-related affective reactions. In this process, the level of self-esteem may serve as an input in the sense that it influences what sort of events we consider to be motivationally congruent or incongruent (threatening) in the first place (Smith, 1991). On the other hand, self-esteem may also serve as an outcome in the sense that the subjective success of our self-regulatory efforts (whether self- or task-focused) is an important determinant of how we feel about ourselves in given situations (e.g., fluctuations in self-esteem, see Greenier et al., 1999; Kernis & Waschull, 1995). In the present context, it is assumed that students with lower self-esteem are likely to exhibit performance-avoidance or avoidance tendencies, whereas students with higher self-esteem are more likely to endorse mastery or performance-approach goals. In other words, differences in the experienced need to self-protect – as reflected in different

types of goal preferences and motivational tendencies – are presumed to be associated with differences in the level of self-esteem.[11]

Self-efficacy (studies III and IV)

One powerful set of beliefs that influence behavior *in situ* is self-efficacy beliefs, beliefs about one's ability to "organize and execute the courses of action required to produce given attainments" (Bandura, 1997, p. 3). Self-efficacy beliefs are *not* about intentions, control expectancies, self-concepts, or traits; rather, they reflect those situation-specific judgments we make about our capabilities of carrying out particular actions under certain conditions (Bandura, 1977).

Self-efficacy beliefs mainly originate in the inferential process concerning one's prior performance and are associated with persistence, resiliency, and sustained effort – especially under challenging and changing circumstances (for studies focusing on academic contexts, see Multon, Brown, & Lent, 1991; Pajares, 1996, 1997). These extensive behavioral consequences are derived from the central role self-efficacy plays in the different stages of self-regulation (and self-control). For example, self-efficacy has been found to influence both the level and type of goals people decide to strive for (Latham & Locke, 1991) and the accompanying goal-striving processes (for reviews, see Bandura, 1986, 1989, 1997; Schunk & Ertmer, 2000). Although "more is better" seems to apply to much of the findings on the effects of self-efficacy, "overconfidence" may sometimes lead to inaccurate appraisals or unrealistically high goals (see Niemivirta, 1999b; Stone, 1994).[12] In the present context, it is assumed that self-efficacy not only independently influences task performance but also mediates the impact of goal orientation. Lower self-efficacy beliefs are presumed to be linked to avoidance tendencies as well as to self-protective behavioral strategies (cf. Higgins & Berglas, 1990).

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[11] Naturally, the level of self-esteem is but one aspect of self-esteem that is likely to influence how people approach performance situations. The stability of self-esteem (Crocker & Wolfe, 2001) and self-worth contingencies (2002; 2001) would seem especially relevant in this context. For example, one could argue that students with fragile self-esteem, irrespective of its level, might display stronger tendencies to validate their competences (cf. performance-oriented students) than students with secure self-esteem. Similarly, the types of factors students consider relevant to their self-appreciation (i.e., self-worth contingences) might play a role in their reactions to academic situations. For example, students whose self-esteem – again, irrespective of its level – was dependent on academic accomplishments or appearing competent might be more inclined to strive for performance-related goals than would students with non-academic self-worth contingences.

[12] For an interesting discussion on the findings showing negative self-efficacy effects, see the studies by Vancouver et al. (2002; 2001) and the commentary by Bandura and Locke (2003).

Self-handicapping (studies III and IV)

Negative outcome expectations or the mere uncertainty of the outcome may result in protective strategic behavior that precedes actual task engagement. An example of such behavior is self-handicapping, the deliberate creation of obstacles to successful performance so that the linkage between performance and ability becomes obscured (Jones & Berglas, 1978). Self-handicaps provide the performer with both an excuse for failure and a possibility of taking credit for possible success (for a comprehensive overview, see R. L. Higgins, 1990).

The research on self-handicapping has evolved two forms of self-handicapping, behavioral (or acquired) and self-reported (or claimed), respectively (Hirt, Deppe, & Gordon, 1991; Leary & Shepperd, 1986).[13] Alcohol consumption and intentionally reduced effort are examples of the former, whereas anticipatory excuse making such as verbal claims of being ill or in a bad mood describe the latter (Baumgardner, Lake, & Arkin, 1985; Berglas & Jones, 1978; Feick & Rhodewalt, 1997; Rhodewalt & Hill, 1995). Although self-handicapping may occur in the service of self-presentational concerns, it can be stated that the enactment of self-handicapping strategies is motivated by anticipated threats to self-esteem or uncertainty about one's abilities (Rhodewalt, 1990; Tice, 1991). In other words, self-handicapping – whether behavioral or self-reported – serves to preserve the individual's self-esteem and sense of competence.

Another question pertains to whether self-handicapping has any actual influence on the performance itself. Unfortunately, current research provides no unambiguous answer to this. Some studies suggest that self-handicapping results in negative effects on subsequent performance (Rhodewalt & Fairfield, 1991; Zuckerman, Kieffer, & Knee, 1998) whereas others show positive effects (Rhodewalt & Davison, 1986) or no effects at all (Greenberg, Paisley, & Pyszczynski, 1984; Harris & Snyder, 1986). Snyder's (1990) explanation of those unexpected positive outcomes is that "the successful handicap may enable the protagonist to focus on relevant task cues and not the potentially interfering self-relevant emotions and cognitions" (p. 139). Support for this suggestion was found in a study by Deppe and Harackiewicz (1996), which demonstrated how self-handicapping permitted the participants to

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[13] Another line of research has focused on individual differences in habitual self-handicapping (see also Nurmi, Onatsu, & Haavisto, 1995; Rhodewalt, 1990). These studies have demonstrated correspondence between the self-reported tendency to engage in self-protective behavior and actual self-handicapping behavior. Moreover, habitual self-handicapping has been linked with lower self-worth, approval-seeking tendencies, self-deprecation, ego-oriented goals, negative attitudes, and lower achievement (for a review of habitual self-handicapping in an academic context, see Urdan & Midgley, 2001).

become absorbed in the activity instead of focusing on performance concerns, thus leading to higher levels of task involvement and enjoyment. Thus, self-handicapping may indeed provide a momentary buffer against the threat of failure, but in the long run, the consequences may be detrimental (Zuckerman et al., 1998).

Situational interest (studies III and IV)

Another important task-specific factor influencing performance is interest (Hidi, 1990; Renninger, Hidi, & Krapp, 1992). The concept of interest refers to different, but not unrelated, phenomena depending on whether the focus is on personal interest or situational interest. Personal interest reflects the person's relatively stable evaluative orientation towards a certain object (Krapp, Hidi, & Renninger, 1992; Schiefele, 1991), whereas situational interest refers to the emotional state aroused in a specific situation or by features of an activity (cf. Schiefele & Rheinberg, 1997).

Both personal and situational interest have been found to correlate with indices of achievement and learning (e.g, Schiefele, Krapp, & Winteler, 1992). Much of this work has focused on reading and text-based learning (Alexander & Jetton, 1996; Hidi & Anderson, 1992; Schiefele, 1996; Wade, 1992). These studies demonstrate, for example, how topic interest and text interestingness influence learning-related outcomes such as text comprehension, sophistication of interpretations, and the production of written responses (Alexander, Kulikowich, & Schulze, 1994; Schiefele & Krapp, 1996; Schraw, 1997). Other studies have examined the joint contribution of personal interests and task features on situational interests. Using dynamic measures of student activities, these studies have been able to identify important processes and components, such as affective reactions and persistence, that mediate the influence of situational interest on text learning (Ainley, Hidi, & Berndorff, 2002; Ainley, Hillman, & Hidi, 2002).

Despite the generally consistent findings, it must be noted that on some occasions, indices of situational interest have failed to show any significant relationships to performance outcomes. For example, in a series of experiments investigating the effects and mediating processes of motivation on learning, Vollmeyer, Rollett, and Rheinberg (1996) discovered that topic interest was unpredictive of knowledge acquisition and task performance, even though it correlated with other influential motivation variables (e.g., mastery confidence). Similar findings were observed in a study by Niemivirta (2000). What is common to these studies is how interest was assessed. In both sets of studies, the students' task-related interest was assessed after the task was introduced, but *before* they actually worked on the task. In other words, the assessment did not really tap the students' actual experience of interest, but rather their anticipation or expectancy of interest (e.g., "I think this task *will be*

interesting."). From this point of view, it might be that for some students, the anticipated interest did not correspond to the actual experienced interest, and thus distorted the probed link between (assessed) interest and performance outcomes.

In the present context, it is assumed that the task assignments used in the studies will elicit the anticipation of interest among students who generally pursue mastery goals, but not necessarily among students who tend to avoid academic tasks altogether. In other words, compared to other students, those who are inclined to enjoy academic challenges in general will consider the assigned tasks more interesting – despite the fact that they are not part of the students' everyday school activities.

Control motivation (study III)

For decades, it has been argued that people are intrinsically motivated to expand their understanding and capacities (Deci & Ryan, 1985; Piaget, 1963; White, 1959). This innate need to exercise control over significant events in one's life takes many forms as children develop through childhood and adolescence (Rothbaum & Weisz, 1989). Strube and Yost (1993) considered one such form of control motivation in their work on self-appraisals of abilities. Originally focusing on the linkage between Type A behavior and control motivation adult population (Shalon & Strube, 1988; Strube & Boland, 1987), this work aimed at identifying individual differences in the desire to evaluate self-relevant information and reduce uncertainty about one's abilities (see also, Sorrentino & Roney, 2000; Sorrentino & Short, 1986). Studies on these self-appraisals demonstrated that individuals who seek accurate appraisals of abilities also desire control over their environments, tend to engage in self-focused attention, are less likely to habitually construct barriers that obscure the link between ability and performance (cf. self-handicapping), and use ability-related feedback more effectively (for a review, see Strube & Yost, 1993).

In the present context, the above conceptualization was adopted and applied to the school setting. The term control motivation used here thus reflects the desire of students to know about the causes of or factors leading to successes and failures in schoolwork. Undoubtedly, accuracy in evaluating both internal (e.g., feelings of progress and difficulty) and external feedback (e.g., direct responses or indirect cues from the environment) is a necessary aspect of effective self-regulation in general, but the desire to obtain accurate information about one's abilities would seem particularly characteristic of strivings for mastery (Butler, 1992, 1993).

Learning strategies (study I)

The discussion thus far has focused on how students seek to regulate their actions so that they will maintain balance in their personal well-being. In the school context, however, most learning and performance situations also comprise the common goal of developing and validating students' current knowledge. How this central instructional task transforms into idiosyncratic learning processes and outcomes depends on how the student interprets or models the given task; the students mediate the instructional features by choosing and applying learning strategies based on their subjective estimates of which strategies have the greatest utility in relation to attaining the goal (Winne & Marx, 1977).

Strategies reflecting the learner's behaviors that are intended to influence how he or she processes information are called learning strategies (Mayer, 1988). These behaviors may be internal, such as rehearsal or paraphrasing, or external, such as writing notes or drawing concept maps (e.g., Lonka, Lindblom-Ylänne, & Maury, 1994; Wade, Trathen, & Schraw, 1990). Much of the work on learning or study strategies distinguishes between cognitive strategies and metacognitive strategies. The use of cognitive strategies refers to the intentional and effortful manipulation of information by the learner through processes such as rehearsal, elaboration, and organization of the material resulting (optimally) in better understanding, remembering or problem solving (Weinstein & Mayer, 1991). The use of metacognitive strategies, in contrast, involves active control over the cognitive processes engaged in learning. Thus, strategies such as planning how to approach a given learning task, monitoring comprehension, and evaluating progress toward the completion of a task are metacognitive in nature (Brown, 1987; Flavell, 1979).

Cognitive learning strategies can be further classified in terms of the level of processing. Drawing on the work of Craik and Lockhart (1972) on the influence of processing on memory retention, this view argues that the durability or strength of the memory trace is a direct function of the depth of processing involved. In simple terms, more elaborate encoding results in "deeper" learning. Accordingly, the distinction between less adaptive surface processing and more adaptive deep processing[14] has found its way to numerous inventories designed to assess students' use of

[14] This distinction between surface and deep processing was also adopted by Marton and Säljö (Marton & Säljö, 1976a, 1976b), although from a different perspective. Based on a phenomenographic case study of students' learning processes, they described two different ways of approaching and negotiating with the learning task; surface-level processing, which is directed at reproducing the learning material, and deep-level processing, which is directed at understanding the meaning of the learning material (for similar conceptualizations, see Biggs, 1979; Entwistle & Hounsell, 1979; Ramsden, 1983). Although this perspective depicts stable "styles" rather than strategies, the studies suggest that the

learning strategies (e.g., MSLQ by Pintrich, Smith, Garcia, & McKeachie, 1993; LASSI by Weinstein, Zimmermann, & Palmer, 1988). Surface-level processing is exemplified by scales or item reflecting, for example, memorization by repetition or skimming the learning material, while deep-level processes are illustrated by scales or items reflecting, for example, elaboration and re-organization of the learning material. The effective use of metacognitive strategies (e.g., planning, monitoring, and evaluation) has also been taken to reflect or facilitate deep processing. Consequently, the self-reported use of deep processing strategies rather than surface processing strategies has been found to predict performance and other adaptive outcomes (e.g., Ainley, 1993; Anderman & Young, 1994; Elliot et al., 1999; Meece & Jones, 1996; Nolen, 1988; Nolen, 1996; Pintrich, 2000b; Schiefele, Wild, & Winteler, 1995; Wolters, Yu, & Pintrich, 1996a).[15]

In the present context, the relevance of research on learning and study strategies is based on the assumption that the deployment of different strategies reflects the different goals the students pursue. For example, if the student truly wants to understand the learning material, she is likely to approach the task using strategies that facilitate such understanding (e.g., linking the learning material to her prior knowledge). In contrast, if the student only wants to "pass the exam", she may minimize her effort and engage in activities that result in sufficient but superficial knowledge (e.g., memorizing isolated facts). Naturally – as pointed out in our introductory example (see also Dart et al., 2000; Lonka & Lindblom-Ylänne, 1996; Purdie, Hattie, & Douglas, 1996) – the employment of different strategies may also reflect different conceptions of learning (e.g., speed vs. accuracy as indicators of competence) or simply differences in the willingness of students to invest effort.

1.4 Summary: The perspective adopted

1.4.1 Conceptual, theoretical, and methodological issues

In the above discussion, I have pointed out that the research on achievement goals and goal orientations has somewhat suffered from differing conceptualizations, varying operationalizations, and occasional disparities between the two. In order to

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adoption of either mode (for more complex applications of a similar framework, see Lonka & Lindblom-Ylänne, 1996; Vermunt, 1996) is partly a function of how the students perceive institutional demands and the function of studying in general. Nevertheless, the surface approach has been systematically found to be less advantageous than the deep approach.

[15] It is important to note that what students report doing (or what they think they do) does not necessarily correspond to what they actually do (e.g., Hadwin, Winne, Stockley, Nesbit, & Woszczyna, 2001; Veenman, Prins, & Verheij, 2003; Winne & Jamieson-Noel, 2002, 2003).

avoid additional confusion and to explicate the stance taken here, I will next provide a summary of the conceptual and empirical perspective the present work is grounded on.

In this study, goals are defined as desired end-states; they represent the endpoints individuals seek to obtain or achieve (Pervin, 1982). Goals become manifested on various levels of action (Heckhausen & Kuhl, 1985; Vallacher & Wegner, 1987). For example, the goal might be the action itself (e.g., the enjoyment of jogging), the outcome of the action (e.g., the euphoric feeling afterwards), or subsequent consequences (e.g., better health). In any case, the processes related to goal attainment at the higher levels necessitate the structuring of the lower levels (Carver & Scheier, 2000; Heckhausen & Kuhl, 1985). On the other hand, first-order goals can also be enhanced by the features of the higher-level goal. People may engage in an action for its own sake, but they may also simultaneously see it as a means to attain higher-level goals (cf. the jogging example above). Such a higher-order overlap may result in an added incentive to attain the lower-level goals, an attention shift between various goal levels, a rivalry between two goals, or a lower-level goal being overpowered by the higher-level goal[16] (Heckhausen & Kuhl, 1985).

Goals can be said to have both cognitive and affective properties associated with them. That is, a goal is composed of the cognitive representation of it and the valence and value attached to it (Elliot, 1999; Lewin, 1935; Pervin, 1982). In most cases, goals also imply certain behavioral consequences (i.e., representations of plans and means for attaining the goal), which may even become triggered automatically by environmental cues (Bargh, 1990; Bargh & Chartrand, 1999). Such chronic goals or auto-motives represent highly accessible knowledge structures that are directly linked to relevant plans and their immediate execution (Bargh & Gollwitzer, 1994).

While goals represent objects, events, states, or experiences one seeks to attain, the concept of goal orientation refers to a personal factor that contributes to the individual's selection of different goals; it reflects people's preferences for certain types of desired end-states. We can thus define goal orientations as individual's tendencies to select or favor certain goals and outcomes over some others. Like goals, also personal preferences for specific goals can be understood in terms of knowledge structures (Higgins, 1996; Kruglanski, 1996). The higher the accessibility of

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[16] Undermining intrinsic motivation by providing external rewards is a very illustrative example of this (e.g., Lepper, Greene & Nisbett, 1973). Intrinsic motivation represents an activity driven by first-order desired end-states (i.e., engaging in the activity). If the activity, however, is perceived as only instrumental to another end, for example, when engaging in it is rewarded, it loses its initial motivating quality.

the construct, the stronger the preference and the easier it becomes activated based on the current situational setting and environmental cues.

A preference for certain goals is characteristic of an individual, but specific preferences may also be induced by the situation. For example, a competitive situation is comprised of certain features and cues that make it competitive in the first place (e.g., social comparison and heightened public self-awareness). These situational features serve a twofold function: on one hand, they call for the individual's attention thus activating his or her knowledge structures (i.e., data-driven processing), and on the other, they are perceived and interpreted according to one's prior knowledge and personal intentions (i.e., theory -driven processing). A competitive situation should thus activate relevant knowledge structures in all people, but the better the fit between the situational setting and the individual's preferences (i.e., the applicability of chronically accessible preferences), the stronger their impact on further actions. For example, compared to a mastery-oriented person, a person inclined toward performance goals and outcomes should be more sensitive to competitiveness-related cues and thus more likely to respond accordingly to such a situation. It is suggested that people with different types of goal orientation profiles can be characterized in terms of their chronically accessible goal preferences and the distinctive organization of the interrelations among them and the psychological features of the situations (cf. Mischel & Schoda, 1995).

At this point it may be useful to try to clarify what does *not* follow from the above characterization of goal orientation. For the purpose of illustration, I will only use the mastery orientation as an example. To begin with, *being mastery-oriented does not mean that one should always engage in mastery oriented action*. For example, if a situation is perceived as very boring (low interestingness), it is likely that it will not elicit task-focused engagement even in students generally considered task-focused. Then again, these students may be the ones most likely to use effective compensatory volitional strategies to override the experiences of low interest (e.g., Sansone & Smith, 2000) – although being mastery oriented does not automatically grant access to effective volitional strategies or other means for adaptive coping.

Being mastery oriented does not mean that one will always be mastery oriented. Although goal orientations are considered to be rather stable in the sense that they are taken to reflect deeply rooted abstractions based on recurring experiences, it does not mean that they would not change over time or that there would be no variation in how they become activated in different contexts. Already age and age development determine what sort of goals and outcomes are even relevant for children of certain ages. For example, considering the fact that normative comparison

appears to shape self-evaluations only after the age of 10 (Dweck, 2002), mastery and performance tendencies may be rather undifferentiated in younger children. Age-related developmental tasks are also influential in governing the primacy of certain classes of goals (Nurmi, 1993), just as are changes in the school context (e.g., school transitions), social status, and future aspirations (Anderman & Midgley, 1997; Anderman & Anderman, 1999; e.g., Carroll, Baglioni, Houghton, & Bramston, 1999; Nurmi, Salmela-Aro, & Koivisto, 2002; Simons, Dewitte, & Lens, 2000).

Similarly, *being mastery-oriented in one situation does not mean that one is mastery-oriented in all situations.* Although I would argue that there is consistency in how mastery-oriented students view *any* given situation, environmental cues and situational demands obviously influence people's situational construals and the actions they choose to carry out. For example, (normatively) appropriate engagement in a competitive situation necessitates performance-focused action. Even among the most mastery-oriented people, such a situation could easily elicit genuine urges to demonstrate ability and outperform others. Even so, however, it is also likely that a mastery-oriented person perceives the implications of the outcomes, and consequently also experiences the actual outcomes (e.g., if losing a competition), differently than, say, a performance-oriented person. The core argument here is that being oriented towards certain goals and outcomes increases the likelihood of perceiving certain situations in a certain manner, and subsequently carrying out certain actions. For example, being a person with strong performance-avoidance tendencies increases the likelihood of perceiving a test situation as a threat, which, in turn, increases the likelihood of engaging in self-protective behavior.

At this point, one should note that all the examples above describe *different types of individuals*. In contrast to most of the current work on achievement goals and orientations, which focus on different classes of goals, the emphasis here is on individuals with different types of motivational tendencies. One reason for this is that different goals are not independent of each other as people may prefer to pursue various types of goals simultaneously. Of course, some goals are more likely to coincide with others; one can assume, for example, that performance-approach goals go often hand in hand with performance-avoidance goals. Compared to, say, a mastery-oriented person, a person generally striving for performance-approach goals would be more likely to "switch" to performance-avoidance goals if the risk of failure suddenly increased. The argument here is that, depending on their goal orientation profiles – that is, the relative weight of different goal preferences – individuals perceive and respond to situations differently. Naturally, then, people's interpretations and actions could be more or less identical in some situations, while

in some others, they could be very different. In any case, the identification of relatively homogenous groups of people with similar goal orientation profiles would seem to be an effective way of approaching the study of individual differences in motivation (for theoretical and methodological discussions as well as for practical examples, see Bergman, Magnusson, & El-Khouri, 2003; Haydel & Roeser, 2002; Magnusson, 1998; Niemivirta, 2002a; von Eye & Schuster, 2000).

The emphasis on individuals does not undermine the crucial role of variables; the types of goal orientation profiles extracted naturally depend on the types of goals taken into consideration. The best articulated classification of achievement goals is that of Elliot (Elliot, 1999; Elliot & Thrash, 2001). As noted earlier, he classifies goals according to how competence is defined (i.e., absolute, interpersonal, normative) and how it is valenced (i.e., approach, avoidance). Although this view would theoretically result in six types of goals, the latest account considers four of them; mastery-approach, mastery-avoidance, performance-approach, and performance-avoidance goals, respectively. What follows from this is that, for example, avoidance goals á la Nicholls (Nicholls, Patashnick et al., 1989) are not considered to be achievement goals, because they represent the absence of an achievement goal rather than the presence.

The pursuit of competence in different forms – gaining competence, avoiding incompetence, demonstrating competence, or avoiding the demonstration of incompetence – is thus at the core of Elliot's view. However, this definitional frame seems to leave out – intentionally and knowingly, I would assume – at least two elements that I would consider relevant when examining the motivational underpinnings of achievement-related behavior. First, there seems to be an inherent assumption that (school) competence is always valued by the students. However, it is very likely that among the students are also individuals who value little or not at all the kind of competence success in school indicates. This does not, however, imply that these students do not have any goals in learning or achievement situations. Most likely, they would be the ones with strong preferences for avoidance goals.

Second, Elliot's view seems to be somewhat insensitive to the social realm in which the various types of competence strivings take place. School-related work, and especially those repeated everyday situations that aim at learning or demonstrations of learning, is composed of certain unique characteristics that should not be ignored. For example, students' learning and achievement are virtually always evaluated in one way or another, through explicit grading, teacher's remarks, peer reactions, or some hidden cues inherent in the classroom ethos. Considering this, it would seem somewhat shortsighted to *not* consider the most explicit of these, grades and marks, as important standards against which the students assess their

own competence. According to Elliot, mastering the task at hand is a standard for the goal of absolute competence. This implies that the reference is made to how well one thinks or feels he or she knows and understands the learning object. One could also assume that instead of (or along with) such an internal standard, the student might consider grades to be a kind of external standard for absolute competence; the attainment of high grades would thus indicate mastery of the task. Following this distinction, the former types of goals could be labeled as mastery-intrinsic and latter as mastery-extrinsic (for a similar view, see Grant & Dweck, 2003).[17]

In short, the point here is that instead of focusing on goals that seek to explain achievement strivings, we should focus on goals that seek to explain achievement-related behavior more generally. In my view, the exclusion of the avoidance orientation (i.e., trying to get away with as little effort as possible in one's school work) and the mastery-extrinsic orientation (i.e., trying to succeed and achieve good grades) as important types of achievement-related motivational tendencies would leave unexplained much of the behavior that takes place in learning and achievement situations.[18]

The last issues to be discussed here concern the assessment of goal orientations. Since we are dealing with subjective preferences, the natural way of assessing goal orientation is to ask the persons themselves. The choice here is to use self-report questionnaires, on which people rate the extent to which they agree or disagree with statements reflecting preferences for various types of goals and outcomes. "Preferences" are operationalized broadly as something people pursue or try to achieve ("I try to avoid situations in which I may fail or make mistakes"; "My goal is to be successful at school."), consider important ("It is important to me that I get good grades."), or get satisfaction from ("I'm especially satisfied when my school tasks are simple and do not require a lot of effort."). None of the items here include retrospective statements, conditional statements, or statements referring to

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[17] Then again, compared to the pursuit of competence (in some absolute personal sense), the quest for high grades may also be more instrumental by nature (see Simons et al., 2000). In this sense, such strivings could also include some characteristics of performance- and outcome-related goals. This notion reflects the issue of equifinality (Pervin, 2001).

[18] For an interesting study examining the broad range of achievement-related goals that can be identified based on student interviews, see Dowson and McInerney (2001; 2003). Excellent examples focusing on how various types of motivational orientations become manifested in teacher-student interactions (e.g., ego-defensiveness and social dependency) can be found in studies by Lehtinen, Salonen and their colleagues (Lehtinen, Vauras, Salonen, Olkinuora, & Kinnunen, 1995; Salonen, Lehtinen, & Olkinuora, 1998).

action ("I do schoolwork, because…"). An important difference between the present operationalization and the ones followed in much of the recent achievement goal research is that the items are not specified in relation to a certain class or course; in line with the theoretical perspective, they are considered to be generalized abstractions of people's preferences. Related to this, the experimental manipulations used (see Study III) do not include specific goal assignments, but seek to create settings that are likely to induce certain motivational states (e.g., task-involvement or ego-involvement) and thus generate relevant variation in differently oriented individuals' situational construals.

1.4.2 Overall aims of the study

The above depiction of the framework is to some extent hypothetical. Several arguments are supported by existing studies coming from various areas of educational and psychological research, while others are only speculative. All the studies included here thus attempted to test aspects of those tentative assumptions.

In the introduction, a general aim of the present work was laid out: that is, to understand what factors influence students' construals in learning and achievement situations and what the consequences of those situational construals are in terms of students' task-related experiences and behaviors. Following the conceptual and theoretical framework outlined above, this aim was approached though the following general research questions:

Q1: What sort of (a) goal orientations and (b) goal orientation profiles can be identified among comprehensive school students, and how generalizable are they in relation to gender and cultural background?

Q2: How do students with different goal orientation profiles differ with respect to (a) other motivational (and cognitive) factors, (b) situational appraisals, and (c) indices of school achievement and task performance, and how do their task-related experiences and performance vary as a function of different instructional conditions?

Along the lines of these research questions, Study I evaluated the patterning of goal orientations, other motivational factors, and school performance as such and in relation to gender; Study II examined the generalizability of goal orientations, causality beliefs, and their relationships across different cultural backgrounds; Study III investigated the influence of instructional conditions on differently oriented students' situational appraisals and task performance; and Study IV explored the role situational appraisals play in mediating the influence of goal orientations and cau-

sality beliefs on task performance, as well as gender differences for these effects and in variable means.

2 OVERVIEW OF THE ORIGINAL STUDIES

2.1 Study I

2.1.1 Aims

The purpose of this study was to examine the patterning of goal orientations from a person-centered perspective. It was assumed that three different types of "learners" would be identified, who differed from each other not only in terms of their goal orientation profiles, but also in relation to other motivational factors, self-reported learning strategy use, and school performance. Moreover, the configuration of goal orientation types, gender, and school achievement was examined.

2.1.2 Participants and procedure

The participants were 485 seventh-graders (234 girls and 251 boys) from four junior high schools. The students completed a self-report questionnaire during one 45-minute whole-class session.

2.1.3 Measures

Goal orientations

For assessing goal orientations, three scales were constructed. The scale for the mastery orientation included 12 items describing the aims and importance of acquiring new knowledge and gaining understanding as well as feelings of satisfaction when learning something new (e.g., "To acquire new knowledge is the most important goal for me in school."). The performance orientation scale included 11 items reflecting an emphasis on seeking demonstrations of relative ability and favorable judgments of competence (e.g., "I am particularly satisfied when I do better in school than other students."). The scale assessing the avoidance orientation was comprised of 8 items reflecting students' desire to minimize effort and avoid "unnecessary" work (e.g., "I try to get away with as little effort as possible in my schoolwork."). A seven-point *Likert* scale ranging from 1 (*I totally disagree*) to 7 (*I totally agree*) was used for recording students' responses.

Action-control beliefs

Following the action-theoretical conceptualization three distinct aspects of action-control beliefs were examined. For assessing agency beliefs, two scales were constructed; one focusing on effort (e.g., "I try hard in school.") and another focusing

on ability (e.g., "I have the ability to learn in school."). Three different types of causality beliefs (or means-ends beliefs) were assessed; causality belief of effort (e.g., "You learn in school, if you try hard enough."), ability (e.g., "If you don't learn, it is because you are not smart enough."), and external factors (e.g., "If you do well in school, it is because you are lucky."). One scale was constructed for assessing control expectancy (e.g., "I can do well in school if I decide to."). Students' rated each item on a 7-point *Likert* scale ranging from 1 (*I totally disagree*) to 7 (*I totally agree*).

Self-esteem

Students' self-esteem was assessed using a 11-item scale with statements reflecting general self-acceptance, self-respect, and an overall attitude towards oneself (e.g., "In general, I like being the way I am."). All items were assessed using a 7-point *Likert* scale ranging from 1 (*I totally disagree*) to 7 (*I totally agree*).

Learning strategies

The scale for assessing students' self-reported learning strategy use was comprised of 32 statements reflecting the use of various types of cognitive and metacognitive strategies. Following Weinstein and Meyer (1991), items were chosen that represented four theoretically distinct classes of strategies: elaboration (e.g., "When I study for a test, I try to translate the material into my own words."), self-monitoring (e.g., "When studying for a test, I often stop reading and ask myself questions to see if I have understood anything."), planning (e.g., "When I study for a test, I set clear goals for myself."), and memorizing (e.g., "When I study for a test, I try to learn the material just by saying to myself over and over."). Students' rated each item on a 7-point *Likert* scale ranging from 1 (*I totally disagree*) to 7 (*I totally agree*).[19]

2.1.4 Data analysis

The structural validity of motivational variables was examined using *exploratory factor analysis* (principal factor analysis with oblique rotations). A K-Means *cluster analysis* with complementary RELOCATE and RESIDUE analyses (see Bergman & El-

[19] Note, that the factor analytic examination of the item set revealed a structure slightly different from the hypothesized one. A four-factor solution was extracted, which resulted in the following factors: deep processing (comprised of items reflecting elaboration and monitoring), surface processing (comprised of items reflecting simple rote-learning strategies), planning, and detail memorization. The corresponding variables will thus be referred to when discussing the results.

Khouri, 1995) was used for classifying students according to their responses to the goal orientation scales. Group and gender differences across the different motivational and strategy variables and GPA were assessed by means of *analyses of variance* (ANOVA). Finally, configurations (i.e., types and antitypes) of goal orientation groups, gender, and levels of school achievement were examined using *configural frequency analysis* (von Eye, 1990; von Eye, Spiel, & Wood, 1996)

2.1.5 Results

The three-cluster solution chosen to represent the presumed goal orientation profiles resulted in groups that differed from each other in many respects. The students in the first group (n = 135) had the highest scores on learning orientation and lowest scores on avoidance orientation, whereas the students in the third group (n = 191) were highest on avoidance orientation and lowest on learning orientation. The second group (n = 159) had relatively high scores on all orientations, but a clear peak on performance orientation. These groups, labeled as learning-oriented, avoidance-oriented, and performance-oriented, respectively, also differed in an expected manner in relation to perceived control, self-esteem, learning strategy use, and school performance. The learning-oriented students emphasized effort as the key means of influencing school outcomes, displayed high levels of agency beliefs of effort and ability, self-esteem, and control expectancy. Compared to the other two groups, they also reported using more deep processing strategies and engaging in planning. The mean GPA of this group was the highest as well. The performance-oriented students, who also emphasized effort and had high scores on agency belief of ability and control expectancy, differed from the learning-oriented students in important ways. For example, they were more willing to acknowledge the role of ability as a means for success in school, displayed lower levels of agency beliefs of effort, and reported using significantly more surface processing strategies than the learning-oriented students. The avoidance-oriented students differed from both learning-oriented and performance-oriented students in that they emphasized relatively less effort and relatively more external factors (i.e., good vs. bad luck and chance) as the means of affecting school achievement. These students' self-perceptions (i.e., agency beliefs, self-esteem, and control expectancy) were also the least positive. Finally, compared to the other students, avoidance-oriented students reported using less learning strategies, except for surface processing, in which they did not differ from performance-oriented students.

ANOVAs on gender differences revealed that boys scored higher on performance orientation, avoidance orientation, ability causality beliefs, and self-esteem. They also reported engaging in surface processing and detail memorizing more

than girls did. Girls had higher GPA. When goal orientation grouping, gender, and school achievement were contrasted with a configural frequency analysis, two "types" (i.e., a pattern having significantly higher observed frequency than expected) and two "antitypes" (i.e., a pattern having significantly lower observed frequency than expected) were found. The present sample included more learning-oriented high achieving girls and performance-oriented low achieving boys, and less performance-oriented low achieving girls and avoidance-oriented high achieving boys than would be expected by chance alone.

2.1.6 Discussion

In this study, a heuristic conceptual model of different learning modes was proposed, which consisted of three distinct learning modes: intentional, adaptive-self enhancing, and adaptive-self protective learning modes, respectively.[20] It was further suggested that the patterning of students' goal orientations would reflect their tendencies to engage in different learning modes. A cluster analysis of students' goal orientations resulted in three homogenous groups of students, whose profiles corresponded to the hypothesized motivational patterns. The three groups also differed in relation to criterion variables (i.e., measures not included in the clustering) as expected. Students with a mastery orientation had positive self-perceptions and control beliefs, stressed the causal power of effort in school achievement, and reported using effective learning strategies. Performance-oriented students differed from mastery-oriented students mainly in that they also acknowledged the role of ability in school achievement, considered their work to be less effortful, and reported using more superficial learning strategies. Avoidance-oriented students' self-perceptions were the least positive, their action-control beliefs indicated a pattern of external attributions and lack of agency, and they reported the least use of virtually any kind of learning strategies. Finally, mastery-oriented students' had the highest GPA, followed by performance-oriented students and avoidance-oriented students.

These results provide support for the assumption that students hold different types of motivational mind-sets that describe their approaches to school work. Of

[20] Retrospectively – considering the fact the conceptual framework of this study was outlined and the data were already collected in 1995 (see Niemivirta, 1995) – it is interesting to see the resemblance of the three types of learning modes described here to the conceptualization advanced elsewhere by Elliot and Harackiewicz (1996). The only difference is that while Elliot and Harackiewicz focused on distinguishing between different types of goals (i.e., mastery-, performance-approach, and performance-avoidance goals), the present work focused on distinguishing between different types of learners (i.e., intentional, self-enhancing, and self-protecting students).

specific importance is the fact that, students' implicit theories of factors that influence learning and performance as well as their beliefs about their own role in producing those outcomes are in agreement with the goals and outcomes the students report pursuing. For example, students who, in relative terms, emphasize the role of luck and chance in school achievement more than the others, also report trying to avoid academic duties and putting less effort into school work.

Also important is the finding showing quite consistent gender differences on individual motivational variables and in relation to the goal orientation profiles. The results from both the variable-based comparisons and the analysis of group configurations suggest that boys tend to be more ability- and outcome-focused than girls.

Although the results can not be taken to validate the hypothesized learning modes – after all, the focus here was on individual differences in motivational tendencies, not in the actual processes of learning and performance – they are consistent with the predictions following from the conceptualization. Especially, (qualitative and quantitative) group differences in learning strategy use are concordant with the behavioral implications of the conceptual model; students striving for mastery report using strategies necessary for deep learning; students striving for performance outcomes report using strategies that are less demanding but most likely sufficient (and sometimes even more effective) to produce the desired outcome; students with avoidance tendencies report less frequent use of any learning strategy.

Predicted differences were also found in relation to school performance, although these differences were not particularly large. The grouping explained approximately 7% of the variance in GPA, which indicates that much else goes on between students' motivational tendencies and the actual outcomes of their achievement-related behaviors. This points out one clear limitation of the present study: its correlational nature. Making more valid inferences about the relationships between motivational tendencies and their presumed consequences would necessitate either the use of longitudinal data or a focus on the mediating processes taking place in actual performance situations or both.

Another limitation of the study is the methodology used. In the present study, cluster analysis was used to produce three goal orientation groups. This choice was based on the theoretical model, but there is no guarantee that this solution would describe the data best or even that the three groups reflected a true taxonomy (see Gangestad & Snyder, 1985; Meehl, 1992).

2.2 Study II

2.2.1 Aims

The purpose of this study was to examine the relationships between cultural background and the structure, patterning, and level of students' goal orientations and action-control beliefs.

2.2.2 Participants and procedure

The participants in this study were 245 students from Croatia (124 girls, 121 boys), 250 students from Finland (115 girls, 102 boys, 33 did not report gender), and 227 students from Japan (113 girls, 114 boys). The students were from fifth and sixth grades and their ages ranged from 11 to 13 years. The assessment procedure was identical in all countries; under the guidance of their class teacher, all students completed the questionnaire on their motivational beliefs during one class session.

2.2.3 Measures

For translating all questionnaires, a simple application strategy (i.e., the original instrument is translated and used without any iterative modification procedures) common to studies utilizing instruments that originate in another language was utilized. That is, the original instrument was first translated from Finnish into English, and then independently from English into Croatian and Japanese.

Goal orientations

The assessment of goal orientations was based on the scales reported in Study I, but in this study only items that more precisely reflected preferences for mastery, performance (with an emphasis on relative ability), and avoidance goals and outcomes were included. Thus, the scales for assessing mastery orientation, performance orientation, and avoidance orientation were comprised of five items each. A 5-point *Likert* scale ranging from 1 (*I totally disagree*) to 7 (*I totally agree*) was used for recording students' responses.

Causality beliefs

Causality (means-ends) beliefs of effort and ability were assessed using the same scales as in Study I. Students rated all items on a 5-point *Likert* scale ranging from 1 (*I totally disagree*) to 5 (*I totally agree*).

Academic withdrawal

Drawing on Kuhl's work on action control, the academic withdrawal scale was constructed to assess the participants' perceived ability to concentrate on problem-solving situations and their tendencies to give up when facing demanding tasks (e.g., "It often happens to me that I find something else to do when I have a difficult task in front of me."). Students rated all items on a 5-point *Likert* scale ranging from 1 (*I totally disagree*) to 5 (*I totally agree*).

2.2.4 Data analysis

The lack of a priori consideration of possible biases in the translation procedure presented a threat to the comparability of items and therefore also to the underlying constructs (cf. van de Vijver & Tanzer, 1997). Because of this, several analyses were conducted in order to (a) identify possible *item bias* (e.g., van de Vijver, 1994) and (b) test for *measurement equivalence* (e.g., Meredith, 1993). An ordinal logistic regression method for identifying differential item functioning (DIF, e.g., Holland & Wainer, 1993) was used because it can be applied to polytomously coded items and it provides both a test statistic and a corresponding measure of effect size (Zumbo, 1999). Measurement equivalence and differences in group means were assessed using mean and covariance structures analyses (MACS, e.g., Little, 1997).

2.2.5 Results

The analysis of DIF detected only one severely biased item, and the MACS analysis found no other group-dependent sources of misfit. Accordingly, sufficient measurement invariance was established suggesting that the measurement models were comparable across all countries. This permitted valid inferences about group means and construct relationships.

With respect to mean differences, the Croatian students scored the highest on mastery orientation and causality beliefs of effort, followed by the Japanese and Finnish students. However, they also scored the highest on avoidance orientation, again followed by the Japanese and Finnish students. No differences were found on performance orientation. The Japanese and Finnish students did not differ from each other in their causality beliefs of ability, but scored significantly higher than did the Croatian students. The Finnish students showed the highest level of academic withdrawal, followed by the Croatian and Japanese students.

The possibility that a more general response bias underlay mean differences was examined by looking at the differences in extreme response style and acquiescence (see, Grimm & Church, 1999). The results showed that the Croatian students

had the most extreme response style, whereas the Japanese students showed the lowest levels of acquiescence.

Regarding the patterning of goal orientations and action-control beliefs, the results demonstrated expected differences among the students. Compared to the disattenuated latent factor correlations found in the Croatian and Finnish samples, the correlations between causality beliefs of effort and mastery orientation on one hand and between causality beliefs of effort and performance orientation on the other hand were markedly higher in the Japanese sample. Most interestingly, though, causality beliefs of effort and ability were highly related in the Japanese group, but uncorrelated in both the Croatian and Finnish groups.

2.2.6 Discussion

In this study, it was assumed that similar types of goal orientations would be found in all participating cultures (i.e., the measurement model would be identical across all nationalities), but that predictable cultural differences existed in variable means and in the relationships between variables. Compared to the Croatian and Finnish students, the Japanese students were hypothesized to display the highest levels of mastery orientation and the strongest emphasis on the causal power of effort relative to the others.

With few minor exceptions, the measurements across different nationalities showed no item bias and sufficient measurement invariance. Thus, the assumption of (partial) construct equivalence held. Differences in the relationships between disattenuated latent factors were mainly as anticipated, whereas latent mean differences deviated from the expectations. Regarding variable relationships, the correlation between ability and effort causality beliefs was higher in the Japanese sample than in the other groups, and the associations between effort causality beliefs and mastery orientation on one hand, and between effort causality beliefs and performance orientation on the other hand, were considerably stronger in the Japanese group. These findings are in agreement with previous research showing the strong interdependence between the concepts of effort and ability in the Japanese culture (e.g., Holloway, 1988; Samimy, Liu, & Matsuta, 1994; Stevenson, Lee, Chen, Stigler, & et al., 1990). Instead, the exceptionally strong link between effort causality beliefs and performance orientation hints at the particular meaning attached to performance orientation among the young Japanese students. Namely, in contrast to our assumption, Japanese students displayed relatively (i.e., in relation to the within-nationality means of other orientations) the highest levels of performance orientation. Together these findings could be interpreted as reflecting the different role the attainment of performance and outcome goals play in the Japanese culture. It

would seem that the pursuit of performance goals does not necessarily serve the motive of individual self-enhancement (as is presumed in Western cultures), but rather the interdependent motive of approval-seeking as well as the general obligation to the family. That is, in the eyes of young Japanese students, being better than fellow students implies the attainment of the high expectations set by the family and society in general. This socially valued emphasis on persistence and self-improvement (e.g., Heine, Takata, & Lehman, 2000) was also reflected in the Japanese students' low levels of academic withdrawal.

Although the additional findings concerning mean differences were more in agreement with the hypotheses, the overall profiles of responses suggested that the results might have been influenced by particular types of response sets (see Cheung & Rensvold, 2000) exhibited by the members of each nationality. Additional analysis did in fact show that compared to other groups, the Japanese students avoided using the extreme alternatives of the scale, while Croatian students displayed the most extreme response style. However, the present data do not permit a conclusion about the extent to which the observed mean differences were contaminated by this sort of response bias.

The important limitations of this study primarily concern the methodology. No back-translation procedures were used, and the limited set of constructs investigated did not tap such culturally sensitive phenomena (e.g., independent vs. interdependent self-construals, perceptions of other's expectations, cultural norms related to education, etc.) that might add explanatory power or facilitate the understanding of the cultural mechanism underlying the observed differences. The theoretical framework was perhaps also too psychologically oriented thus ignoring aspects of cultural practices and social conventions that might influence the manifestations of psychological phenomena (cf. Bempechat & Drago-Severson, 1999). Avoiding these limitations would clearly reduce unnecessary speculation in interpreting the findings.

2.3 Study III

2.3.1 Aims

The aim of this study was to examine the interaction of the instructional setting and goal orientations in producing task-related appraisals and behavior. In other words, the focus was on how students with different goal preferences experience and execute a complex problem-solving task under two different instructional conditions. The study also introduced a measure of a new type of orientation, mastery-extrinsic orientation, of which validity and utility was evaluated.

2.3.2 Participants and procedure

The participants in this study were 143 ninth-graders (75 girls and 68 boys) from four junior high schools in southern Finland. The design of the study included two sessions. In the first session the students completed a questionnaire focusing on their goal orientations and motivational beliefs. The second session consisted of the actual test situation. The first session was carried out for each separate class (with the number of students ranging from 15 to 27), while the actual testing procedure was conducted in small-group sessions (with the number of students ranging from 9 to 14) during ordinary math and ICT classes. However, one group of students was excluded due to an incorrect task setting and another due to unfortunate computer problems. Thus, the valid number of students participating in the experimental part was 100 (53 girls and 47 boys).

One half of the students were given task-focused instructions (i.e., the task-involving condition), while the other half received performance-focused instructions (i.e., the ego-involving condition). In the task-involving condition, the instructor explained to the students that a new problem-solving task is being developed and the students' help was needed to evaluate the functionality of the current version. The students were encouraged to work on the task as if it had been "real" (e.g., "try to do the task as well as you can"), but it was emphasized they were not tested and evaluated in terms of relative success. In contrast, the instruction for the ego-involving condition stressed that the task was a test that measures students' reasoning ability. It was also stated that the level of performance in the task was a good predictor of future success at school. To further highlight the evaluative function of the task the students were told that the results would be announced in a few days by their own teacher.

After the general instructions, the actual task was described in detail with illustrative examples. Before starting to work on the task, the students completed a short pre-task questionnaire focusing on their situational appraisals.

2.3.3 Measures

Goal orientations and motivational beliefs

The questionnaire completed in the first session included scales for five types of goal orientations (cf. Niemivirta, 2002b), mastery-intrinsic orientation (e.g., "To acquire new knowledge is an important goal for me at school."), mastery-extrinsic orientation (e.g., "My goal is to succeed at school."), performance-approach orientation (e.g., "An important goal for me at school is to do better than other students."), performance-avoidance orientation (e.g., "I try to avoid situations in

which I may fail or make mistakes."), and avoidance orientation (e.g., "I try to get away with as little effort as possible in my school work."). [21] For validation purposes, the questionnaire also included scales for academic withdrawal (see Studies I and II), fear of failure (e.g., "During classes or exams I often worry that I do worse than the other students."), and control motivation (e.g., "If I fail in something I always want to find out what the reason was."). Students rated all items using a 7-point *Likert* scale ranging from 1 (*I totally disagree*) to 7 (*I totally agree*).

Situational appraisals

The short questionnaire given after the instruction but before the task was comprised of 14 items assessing students' anticipated interest (e.g., "This task appears to be very interesting."), claimed self-handicapping (e.g., "I don't feel very good right now, which will most probably affect my performance."), test anxiety (e.g., "This situation makes me feel very anxious."), and self-efficacy (e.g., "I believe I will do well in this task."). All items were responded to using a 7-point *Likert* scale ranging from 1 (*I totally disagree*) to 7 (*I totally agree*).

Math achievement

Since it was assumed that neither students' situational appraisals nor their performance in the experimental task would be totally independent of their general mathematical ability, students' prior grades in mathematics were included for controlling purposes.

The experimental task

A dynamic computer simulation task, "The MED-LAB", was used as the actual experimental task (for a similar application, see Vollmeyer & Rheinberg, 1999). The task is intended to induce complex problem solving, which is defined as the activity applied to overcoming barriers between a given state and a desired goal state by means of behavioral or cognitive multi-step activities (Frensch & Funke, 1995). In the present context, the participants were first required to explore a dynamic system of structural equations, then to construct knowledge based on their exploration, and finally, to use that knowledge in order to work out a series of application

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[21] In the original article, mastery-intrinsic orientation is labeled as learning orientation, and mastery-extrinsic orientation as achievement orientation. The labeling has been revised here (see also Niemivirta, 2003) to avoid confusion with the terminology used in other conceptual frameworks (e.g., Harackiewicz, Sansone, & Manderlink, 1985; Tauer & Harackiewicz, 1999).

tasks. For the sake of simplicity, the present study will focus on the exploration part only.

In a cover story, the participants were told that they were in a medical laboratory and that they were to take part in a study that investigated the impact of drugs on certain chemicals in the human body. Accordingly, the students were instructed to explore how the variation in drug intake (with drugs A, B, and C) influenced the quantity of three chemicals (thyroxin, histamine, and serotonin) in the human body.

The exploration phase consisted of three rounds with six trials in each. For each trial, the students were asked to enter quantities for each drug (input) after which they were supposed to observe the changes in all chemicals (output). The changes in the outputs were to be used to determine which input affected which output and how strong the impact was. After finishing the six trials, the participants were asked to specify what they had learned about the relationships between inputs and outputs. This was done by drawing arrows and entering weights into a structured diagram.

As a task outcome, a structure score was calculated based on the students' drawings. The total score was composed of the number of correct links between inputs and outputs, correct effect directions (positive or negative effect), correct weights, and correct markings.

2.3.4 Data analysis

Preliminary analyses concerning structural validity were conducted using a *confirmatory factor analysis* (e.g., Bollen, 1989), and variable relationships were inspected correlatively. Following the person-centered emphasis of the study, the students were classified according to their goal orientation profiles using *latent class clustering* (Vermunt & Magidson, 2002). A series of *hierarchical analyses of covariance* (ANCOVA) with math grades as a covariate was performed to examine goal orientation group differences in situational appraisals and task performance. Finally, the direct influence of situational appraisals on task performance was examined by means of a *multiple regression analysis*.

2.3.5 Results

The preliminary analyses provided support for including the new orientation measure. It was structurally and conceptually distinct from the other orientations, and it obtained a unique patterning of correlations with the other motivational measures included in the study.

Concerning the primary task of the study, the best-fitting model of latent class clustering resulted in four groups. One group included only two participants, and was excluded from further analysis. The students in group 1 (n = 55) had relatively high scores on learning and achievement orientations and low scores on avoidance orientation, whereas the students in group 2 (n = 18) had very low scores on all performance-focused orientations and the highest scores on avoidance orientation. Students in group 3 (n = 12) scored clearly the highest on all performance-focused orientations and relatively high on avoidance orientation as well.

Regarding the influence of condition, significant effects were found on anticipated interest, self-handicapping, and self-efficacy. The task-involved context was appraised as being more interesting and the students in that test condition reported higher self-efficacy and claimed less self-handicaps than students in the ego-involved condition.

Independent, marginally significant effects on test anxiety and self-efficacy were found for the goal orientation grouping. On the whole, anxiety was highest among the avoidance-oriented students, and the performance-oriented students reported the lowest self-efficacy. In addition to these main effects, the goal orientation grouping interacted with the instructional condition as follows: In the ego-involved condition, the performance-oriented students self-handicapped the most, followed by the avoidance-oriented students, whereas no marked differences among the groups were found regarding the task-involving condition. Moreover, both the performance- and avoidance-oriented students reported higher self-efficacy in the task-involved condition than in the ego-involved condition, but no context-related variation was found for the learning-oriented students.

Several effects were found for gender. Compared to the girls, the boys reported higher self-efficacy. A comparison of gender by goal orientation group revealed that among the girls, the performance-oriented students handicapped the most, while among the boys, the high self-handicappers were the avoidance-oriented students. Interestingly, the girls seemed to experience anxiety more in the task-involving condition than in the ego-involving condition, while the opposite was true for the boys.

With respect to actual task performance, only one marginally significant effect was found. The results showed that girls performed slightly better than the boys in the task-involved condition, while the opposite was true for the ego-involved condition. Regarding the predictions for the effect of situational appraisals on task performance, no significant effects were observed in the task-involved condition (except for the effect of prior math grades), but in the ego-involved condition, task performance was positively influenced by interest and negatively by test anxiety.

2.3.6 Discussion

The purpose of this study was to examine the influence of students' goal orientations on their situational appraisals and task performance under two different types of instructional conditions (task-involvement vs. ego-involvement). The following sets of hypothesis were given: (1) students emphasizing mastery orientation will be less influenced by the different conditions, whereas performance- and avoidance-oriented students will display more negative and performance-inhibiting appraisals under the ego-involved condition; (2) the ego-involving condition will lead to decrements in task performance, and especially among students emphasizing performance goals and avoidance tendencies; and, (3) students' situational appraisals will influence task performance regardless of the instructional context.

Providing support for the first hypothesis, the results showed that just the instructional condition influenced students' expectations of success, task interestingness, and self-handicapping; the ego-involving context with a high evaluative function led to inferior task-involvement, lower expectations of success, and more claims of handicaps. A look at the interaction between the instructional condition and goal orientation grouping revealed that the performance-oriented students in particular felt less confident and were more prone to self-handicapping under the ego-involving condition. Learning-oriented students, in contrast, were not influenced by the instructional condition.

Regarding the second set of assumptions, we found that the instructional condition did not influence task performance as such nor as a function of goal orientation grouping. However, marginal differences were observed when gender was taken into account; boys performed better under the ego-involving condition, whereas girls performed better under the task-involved condition. The opposite effects for boys and girls thus nullified the overall differences. The reasons for this contradictory effect are nevertheless unclear. Stereotypically, males have been considered more competitive than females, so one might suspect that in the present context boys became more committed to the task when there was "more at stake". However, no direct empirical support was found for this interpretation.

Concerning the third set of hypotheses, we found that task performance was influenced by anticipated interest and test anxiety. However, these effects only occured under the ego-involving condition. Quite surprisingly, self-efficacy had no influence on task performance beyond the effects of gender and prior math achievement. Only limited support was thus found for the last two sets of hypotheses.

Based on the results, it would appear that, compared to the task-involved condition, the pronounced emphasis on relative ability in the ego-involving condition

elicited distracting thoughts about possible failure and self-doubt. On the other hand, as indicated by the increase in the need to protect one's self (i.e., self-handicapping), the lower levels of anticipated interest and self-efficacy under the ego-involving condition could also be understood as indications of strategic self-protective behavior. That is, attributions to a dull task and low expectations of success could be used as face saving excuses in case of a failure.

The predictive effects found under the ego-involving condition indicate that the students who experienced the situation as less boring and less stressful were able to produce slightly better results. The fact that similar effects were not found under the task-involved condition suggests that individual differences in the ability to overcome externally imposed demands and pressure were more influential in an ego-threatening situation than in a situation without such a threat. However, it may also be that the lack of explicit consequences (either positive or negative) in the task-involving condition allowed the students to disengage from the task whenever they felt the need to do so. That is, the voluntary nature of the task-involved condition might have resulted in a lack of commitment.

The finding showing that performance-oriented students were the most (negatively) influenced by a situation that stressed evaluation and ability-related information supports the view that argues for the maladaptive consequences of the performance orientation (see Midgley et al., 2001). The finding also disagrees with the view claiming that parallel goals (e.g., performance goals) and contexts (e.g., a competitive context) should lead to an optimal motivation (e.g., Harackiewicz & Sansone, 1991). In addition, it must be noted that various issues might be influential here. For example, the type of methodological approach adopted (i.e., a person-centered focus), the type of manipulation used (i.e., inducement of motivational states rather than assignment of goals), and the type of task employed might have all influenced the obtained outcomes. Especially important is the fact that the classification used did not differentiate between students oriented towards performance-*approach* goals and students oriented towards performance-*avoidance* goals. Instead, the group of performance-oriented students identified in this study emphasized *both* types of performance goals *and* avoidance tendencies, which is likely to be manifested in the result as well. This clearly points to one important shortcoming of the present study; the sample was clearly not large enough to have the power to differentiate appropriately between different types of goal orientation groups. For the purpose of comparison, several other studies using identical methodology with large samples have been able to differentiate between groups that emphasize either approach performance goals or avoidance performance goals (Niemivirta, 1999a, 2002b, 2003).

2.4 Study IV

2.4.1 Aims

The aim of this study was to examine the role of situational appraisals (i.e., interest, self-efficacy, and self-handicapping) in mediating the influence of general motivational tendencies (i.e., achievement goal orientations and causality beliefs) on task performance. Moreover, construct equivalence and latent mean differences were examined in relation to gender.

2.4.2 Participants and procedure

The participants in the study were 1248 ninth-graders (622 girls and 626 boys aged 14 and 15) from 99 classes, each from a different junior high school (the number of students in each class ranged from 12 to 31 with a median of 19).

Data were collected on two occasions. On the first occasion, the students completed a questionnaire tapping various types of motivational tendencies and beliefs, and on the second occasion, the students participated in the actual target task. In the task situation, the students were first given instructions explaining the task and what they were required to do. They were then presented an example item with the correct answer. After the instruction, but before beginning work on the actual task, the students completed a short questionnaire focusing on their task-related self-appraisals.

Entire classes separately took part in the test session, and the procedure was carried out by the homeroom teachers. The participating teachers had beforehand received test booklets and written instructions explaining the purpose of the task and providing detailed guidelines on how the task was to be executed.

2.4.3 Measures

Achievement goal orientations and causality beliefs

The questionnaire tapping students' motivational tendencies and beliefs included scales for mastery and performance-approach goal orientations as well as for causality beliefs of effort and ability. The scale for mastery orientation included four items assessing students' focus on learning, knowledge acquisition, and improvement in competence, while the scale for performance-approach orientation was comprised of three items assessing students' focus on relative ability and judgments of competence (one original item was a priori excluded, because it appeared to reflect concerns about social presentation rather than relative ability).

The scales for causality belief of effort and ability were based on the original work by Skinner, Chapman, and Baltes (1988) and included four items each reflecting students' generalized beliefs about the extent to which effort expenditure or ability is seen to influence learning and school performance (cf. Study I and II). Students rated all items on a 7-point *Likert* scale ranging from 1 (*Does not describe me at all*) to 7 (*Describes me very well*).

Task-specific self-appraisals

The pre-task questionnaire consisted of nine items concerning the participants' anticipated interest, self-efficacy, and claimed self-handicapping (cf. Study III). A 7-point *Likert* scale ranging from 1 (*Not true at all for me*) to 7 (*Very true for me*) was used for the assessment.

Task performance and general reasoning ability

The Analysis of Relevant and Irrelevant Information subtest of Ross and Ross's (1976) *The Ross Test of Higher Cognitive Processes* which focuses on information sufficiency and relevance in mathematical word problems, was adopted for the purposes of the study. In the task situation, the participants were first presented a problem and then asked to decide whether enough information to solve the problem was given and whether that information was relevant or irrelevant. The test included 14 items and was completed during one 45-minute session.

In order to take into account individual differences in general reasoning ability, the students' scores on a Piagetian reasoning task carried out earlier in an independent test session were included. The *Pendulum task* used here is a component of the *Science Reasoning Tasks* (Shayer & Adey, 1981; Shayer, Adey, & Wylam, 1981), and is designed to measure the student's ability to infer the effects three variables, the length, weight and push of a pendulum, have on the pendulum's oscillation. To be successful, the student must be able to design experiments that control the appropriate variables and make to deductions from demonstrated evidence.

2.4.4 Data analysis

The data analyses was comprised of a set of interrelated tasks. First, the aim was to test the hypotheses of task-specific self-appraisals mediating the influence of generalized motivational tendencies on task performance. Second, gender differences and similarities were examined in relation to the structure, level, and patterning of all measures included. That is, differences between boys and girls were examined in terms of both construct equivalence (i.e., whether the same measurement and structural models applied to both genders) and disattenuated latent means (i.e.,

whether there were gender differences in latent means instead of only in observed measures). For these tasks, *mean and covariance structures analyses* (Little, 1997) were used.

2.4.5 Results

First, the analyses revealed that virtually identical measurement and structural models fit for the boys and girls. The only differences were an invariant factor variance for effort causality beliefs and an invariant predictive path from self-efficacy to task performance. Regarding the latter, the influence of self-efficacy on performance was slightly greater for the boys than it was for the girls.

The latent mean differences across genders were very much as expected. The boys scored higher than the girls on performance-approach orientation, ability causality beliefs, and self-efficacy, whereas the opposite was true for mastery orientation, effort causality beliefs, anticipated interest, and task performance. As indexed by Cohen's *d* (Cohen, 1988), the effect sizes for these differences were nevertheless rather small.

The results on latent factor relationships revealed that mastery orientation was positively related to effort causality beliefs, whereas performance-approach orientation was linked with ability causality beliefs. The correlation between causality beliefs of effort and ability was negative. A small significant positive correlation was found between general reasoning ability and mastery orientation, while for ability causality beliefs and general reasoning ability the association was negative. Also, as expected, anticipated interest correlated positively with self-efficacy, and both interest and self-efficacy correlated negatively with self-handicapping.

With respect to the predictive relationships, we found that task performance was directly and positively influenced by mastery orientation, general reasoning ability, and self-efficacy, and negatively by anticipated interest. However, as noted above, the effect of self-efficacy on performance was significantly stronger for the boys than for the girls. Self-efficacy itself was predicted by mastery orientation, effort causality beliefs, and general reasoning ability. Mastery orientation also had a positive effect on anticipated interest. Claimed self-handicapping was influenced negatively by mastery orientation and general reasoning ability. Neither performance orientation nor ability causality beliefs had any significant predictive effects. The amount of variance explained in anticipated interest, self-efficacy, claimed self-handicapping, and task performance was 4%, 11%, 3%, and 45% for the girls, and 4%, 12%, 3%, and 55% for the boys, respectively.

Note that the inclusion of covariates (i.e., the specification of a predictive model with independent variables and mediators) resulted in a nonsignificant gen-

der difference for anticipated interest, while the previously established mean difference for task performance became slightly larger. The boys' standardized latent mean scores dropped slightly suggesting that their performance level became relatively worse when the influence of general reasoning ability, generalized motivational tendencies, and situational self-appraisals was taken into account.

2.4.6 Discussion

The purpose of the present study was to examine the extent to which students' situational appraisals mediate the influence of achievement goal orientations and causality beliefs on task performance. The experiment-like design of the study permitted a valid examination of the sequential and process-like relationships among general motivational tendencies, situation-specific motivational judgments and behavior, and performance. The equivalence of these relationships and mean-level differences were also examined in relation to gender.

First, it was hypothesized that both the measurement models and the structural relationships among different constructs would be identical for the boys and the girls. With the exception of a few individual parameters, this turned out to be the case: the results demonstrated clear construct comparability across gender.

Concerning the correlational relationships among the latent factors, support was found for most assumptions. The patterning of relationships suggest that the endorsement of mastery goals and related outcomes is associated with the dynamic belief that learning outcomes depend on effort expenditure, whereas the pursuit of performance goals is linked to a view of learning outcomes being more or less determined by prevailing abilities. These findings concur with those of Dweck (Dweck, 1986) and Nicholls (Nicholls, Patashnick et al., 1989) showing that students with different implicit theories or conceptions of competence prefer and tend to pursue different types of goals and outcomes.

The relationships between situational appraisals were also as expected: Students with more confidence in their capabilities anticipated the task to be more interesting and self-handicapped less than students with less confidence. Without making any strong claims about causality, it would seem that having more confidence in a performance situation coincides with higher expectations of interest and reduces the need to engage in anticipatory self-protective behavior.

Regarding the proximal predictive effects, we found that self-efficacy had an independent influence on task performance, but, in contrast to our hypotheses, claimed self-handicapping was unrelated to performance and the presumed positive effect of anticipated interest turned out to be negative. Both of the latter results could be understood in terms of self-protective behavior (cf. Study III). The fact

that self-handicapping failed to influence task performance could demonstrate the occurrence of two different consequences of claiming handicaps, as each nullify the influence on performance of the other. It is possible that for some students, anticipatory excuse making served as a valid indicator of expected poor performance, while for others, it provided a buffer against possible failures thus reducing experiences of anxiety and facilitating subsequent performance. Similarly, the students expecting failure or poor performance could have used the ratings of interest as a self-protection strategy; claiming something to be uninteresting could be used as an excuse for not expending effort or doing one's best.

Some aspects of our findings, however, speak for another interpretation. Note that the regression of task performance on anticipated interest was negative even though the (small but significant) dissattenuated latent correlation between anticipated interest and task performance was positive. Since interest was also strongly associated with the other proximal predictors of performance, it would seem that the odd reversed effect is in fact a sign of net suppression (see Cohen & Cohen, 1983; MacKinnon, Krull, & Lockwood, 2000).

The influence of general measures on situational appraisals and task performance was mostly as expected. Anticipation of interest was more influenced by a general positive orientation towards mastery and learning than by task-relevant ability, but even so, only 4% of the variance in interest was explained by these factors. Given this, it seems that the anticipation of interest in a task is either truly situational or better predicted by factors other than the ones included here – or both.

Also in contrast to our hypotheses, claimed self-handicapping was predicted by neither performance-approach orientation nor ability causality beliefs. Concerning the influence of performance-approach orientation, it may be that our original hypothesis was not fully warranted. Our assumption was grounded on prior research, which suggested that both approach (self-enhancement) and avoidance (self-protection) motives might result in self-handicapping (Tice, 1991). However, studies focusing on habitual self-handicapping in academic contexts have not supported this claim. For example, a study by Midgley and Urdan (2001) demonstrated how self-reports of self-handicapping were associated with performance-avoidance goals, but not with performance-approach goals. From this point of view, the present finding is in concert with those by Midgley and Urdan. A more comprehensive picture might be achieved if performance-avoidance orientation was also included as a predictor.

A result that goes clearly against recent findings is the performance-approach orientation's failure to influence task performance. Several alternative interpreta-

tions for this can be considered. As pointed out by Midgley et al. (2001), it may be that the consistent predictive effects found in college samples simply do not hold for younger students. On the other hand, considering the outcome-focused tendencies of performance-oriented students in general, it may also be that our task assignment was not relevant enough for these students to generate sufficient task commitment and effort expenditure. This view of subjective task relevance also holds if we look at the significant effects that mastery orientation had on performance. That is, even though the task had no practical relevance to the participants in terms of school marks, students with stronger a mastery focus might have considered the task *per se* meaningful enough to augment task commitment and activate task-relevant behaviors. The direct effects of mastery orientation on anticipated interest and task performance as well as the indirect effects of both mastery orientation and effort causality beliefs on performance are in line with this interpretation.

Despite the identical predictive effects, the latent means in several constructs differed as a function of gender. Quite in line with the predictions, the boys scored higher on factors focusing on ability and its role in school achievement, whereas the girls scored higher on factors focusing on effort and mastery. That is, the boys not only reported striving for relative ability more than the girls did, but they were also more confident in their task-related capabilities and emphasized the causal power of ability in achievement more. Thus, irrespective of the fact that the girls actually performed better than the boys, the above findings follow the stereotypical view of boys being more ability-focused and girls being more task-oriented.

To conclude, the results of the present study support and extend prior findings in several respects. First, it was shown that students' achievement goal orientations are indeed linked with the implicit theories they hold about how school outcomes come about. Borrowing Dweck's (1986) terminology, the pursuit of performance-related goals is associated with a static, ability-focused entity theory of learning and achievement, whereas the preference for mastery goals is linked with a dynamic, effort-focused incremental theory. Although these associations were not strong, they nevertheless are theoretically consistent and illustrative. Second, students' task-specific motivational experiences are in part dependent on their general motivational tendencies, and they partially mediate the influence of general tendencies on task performance. Self-efficacy especially seems to play an important role in this respect. Third, although the sequence and strength of the predictive effects are identical for the boys and the girls, significant gender differences exist in score means. Compared to the girls, the boys appear to hold a more ability-focused mindset. Finally, although evidence for many of the expected predictive effects was found, the amount of explained variance in the situational variables was low. Fu-

ture studies should thus focus on developing the accuracy of the instrumentation and consider additional explanatory factors.

3 GENERAL DISCUSSION

The purpose of this study was to examine factors that influence students' situational construals and the consequences of those construals in terms of task engagement and performance. A theoretical framework was laid out which outlined the dynamic processes of self-regulation in learning and performance (see Boekaerts, 1991; Boekaerts, 1993; Boekaerts & Niemivirta, 2000). Combining elements from coping research (e.g., Lazarus & Smith, 1988; Smith & Lazarus, 1990; Smith & Lazarus, 2001) and from work on adaptive self-regulation (e.g., Kuhl, 1992; Mischel, Cantor, & Feldman, 1996; Scheier & Carver, 1988; Shah & Kruglanski, 2000), it was suggested that the goals and outcomes students pursue are crucial determinants of how students approach academic tasks. Two major forms of self-regulation were identified: one with a focus on gaining personal resources, and another with a focus on restoring balance in personal well-being. The tendency to engage in the different variants of these basic forms of self-regulation was presumed to be reflected in the patterning of different goal orientations – individuals' preferences for certain goals and outcomes (for different theoretical views emphasizing goals, see Ames, 1992; Covington, 2000; Dweck, 1991; Elliott & Dweck, 1988; Gollwitzer & Moskowitz, 1996; Mischel & Shoda, 1995; Shah, Kruglanski, & Friedman, 2003).

Four empirical studies examined these assumptions: Study I looked at the patterning of goal orientations, other motivational factors, and school performance in general and in relation to gender; Study II examined how generalizable goal orientations, causality beliefs, and their relationships are across different cultural backgrounds; Study III investigated the influence of the instructional condition on differently oriented students' situational appraisals and task performance; and Study IV explored the role situational appraisals play in mediating the influence of goal orientations and causality beliefs on task performance, as well as gender differences for these effects and on variable means.

The role of achievement goal orientations was examined from both variable-centered and person-centered perspectives. Several types of goal orientations (variable-centered view) and combinations of goal orientations (person-centered view) were identified. The results of the empirical studies showed that different achievement goal orientations were uniquely associated with criterion variables such as action-control beliefs, self-perceptions, self-reported learning strategy use, situation-specific motivational judgments, and task-performance. Findings from the person-centered analyses paralleled these results. For the most part, these results supported

the main assumptions and concurred with those of prior studies (for reviews, see Covington, 2000; Eccles & Wigfield, 2002; Pintrich, 2000c; Urdan, 1997).

The types of goal orientations identified were not dependent on gender or nationality, although group differences were found for variable means. Regarding the effects of cultural background, the results showed variation in how goal orientations were associated with certain types of action-control beliefs.

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A look at the goal orientations included in the present studies shows some evolution in the specification of achievement goal orientations. The three types of goal orientations included in the first two studies followed the conceptual scheme developed by Nicholls and his colleagues (Duda & Nicholls, 1992; Nicholls, 1989; Nicholls, Cheung, Lauer, & Patashnick, 1989; Nicholls, Patashnick et al., 1989; Nicholls et al., 1985). Study III integrates the original framework with later advancements by taking the important distinction made between approach and avoidance performance goals made by Elliot and his colleagues into account (Elliot, 1999; Elliot & Church, 1997; Elliot & Harackiewicz, 1996). The overall perspective, however, differs from that of Elliot et al. in two important respects: (1) the types of goal preferences included are not limited to competence strivings but include other types of achievement-related strivings as well; and (2) the focus is on generalized goal preferences (achievement goal *orientations*) instead of particular goals *per se*. This view is line with those put forward by Dweck and her colleagues (C. S. Dweck, personal communication, July 2, 2003, Grant & Dweck, 2003).

Within this conceptual scheme, five distinct types of orientations were extracted: mastery-intrinsic orientation, mastery-extrinsic orientation, performance-approach orientation, performance-avoidance orientation, and avoidance orientations, respectively.[22] Mastery-intrinsic and mastery-extrinsic goal orientations both reflect a tendency to attain "absolute competence", only with different criteria. The former is based on intrinsic criteria (e.g., feelings of understanding), whereas the latter is grounded on extrinsic criteria (e.g., grades or other formal feedback). Performance-approach orientation reflects a focus on demonstrating competence (e.g., wanting to outperform others); performance-avoidance orientation refers to the tendency of avoiding demonstrations of incompetence (e.g., not wanting to appear incompetent); and avoidance orientation indicates a tendency to avoid achieve-

[22] This differentiation has been replicated on several occasions (Hautamäki et al., 2002; Niemivirta, 2002b, 2003).

ment situations and school work altogether (e.g., wanting to get away with as little school work as possible).

In addition to factor analytical evidence, correlational evidence also supported the above differentiation. Demonstrating discriminant and convergent validity, each type of orientation displayed a unique pattern of correlations with criterion variables. Mastery-intrinsic and mastery-extrinsic orientations were similar in that they both correlated negatively with academic withdrawal and positively with control motivation and school performance. Their essential differences, however, become evident in their associations with other goal orientations and with fear of failure. While approach and avoidance performance goal orientations correlated quite strongly with mastery-extrinsic orientation, they were virtually unrelated to mastery-extrinsic orientation. More importantly, though, mastery-extrinsic orientation correlated (positively) with fear of failure, whereas mastery-intrinsic orientation did not. Differences in these patterns of relationships clearly demonstrate the more instrumental and externally-focused nature of mastery-extrinsic orientation.

Another important set of correlational patterns concerns performance-avoidance and avoidance orientations. While both orientations reflect avoidance-type valences, they differ in terms of what is being avoided (signs of incompetence vs. school work in general) and how the implications of possible academic failures are experienced. Performance-avoidance orientation correlated positively with performance-approach and mastery-extrinsic orientations, while avoidance orientation did not. Moreover, avoidance orientation was positively associated with academic withdrawal and negatively with control motivation, but unrelated to fear of failure, whereas performance-approach orientation was unrelated to the academic withdrawal and control motivation, but positively connected to fear of failure. These patterns clearly suggest a link between performance-avoidance orientation and a preoccupation with ability-related concerns on one hand, and between avoidance orientation and an indifferent attitude towards academic efforts on the other hand.

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As suggested in the above discussion, achievement goal orientations are by no means independent of each other. This does not necessarily imply that students simultaneously pursue different types of goals or prefer a set of alternative (or complementary) outcomes, but rather that they assign a different weight (or value) to different goals and outcomes. For example, there is no logical obstacle (although it may not be very likely) to considering relative performance and demonstrations of competence as primary academic goals, while yet hoping to get away with as little

school work as possible. However, since different goal orientations are taken to reflect certain mind-sets (e.g., a network of interrelated beliefs) and self-regulatory focus (e.g., ways of restoring balance in personal well-being), it is assumed that some patterns of goal orientations are more likely than some others, and that there are groups of people displaying similar goal orientation profiles. This leads to the question of how different goal orientations combine to produce the overall motivational profile of a student.

One empirical problem associated with the task of classifying students based on their goal orientation profiles is critical: Whatever typology or taxon (see Waller & Meehl, 1998) is produced, it is highly dependent on (1) the types of variables included in the analysis, and (2) the type of classification method employed. In the present work, two studies tackled this task with quite similar results.[23] In Study I, a cluster analysis was used with a priori choice of a three-group solution, whereas in Study III, a model-based method was used with an empirically-derived three-class solution.[24] Despite the different methods and different input – three types of goal orientations were used in Study I, five orientations in Study III – similar types of student groups were found: one with a focus on mastery orientation, one with a focus on performance orientation, and one with a focus on avoidance orientation.

These three groups differed from each other in several respects. As illustrated by the results of Study I, mastery-oriented students held the most positive motiva-

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[23] Despite the fact that the findings from studies I and III complement each other, the methodological limitations associated with the typological analyses raise some concerns. In Study I, where an a priori solution was chosen, no criteria were used to check whether this solution in fact described the data best. Study III, instead, used a more robust classification method, but here the number of participants was clearly too small. Thus, there is no guarantee that the resulting solution was stable and sufficiently representative. This possibility becomes obvious when the obtained taxon is contrasted with the ones found in studies using identical methodologies (i.e., same instrumentation and clustering procedure), but considerably larger samples (Hautamäki et al., 2002; Niemivirta, 2002b, 2003); these studies have systematically resulted in four or five distinct (empirically-derived) classes, which are both theoretically meaningful and exhibit strong explanatory power. Just as in the present work, homogenous groups of mastery-oriented and avoidance-oriented students were identified, but unlike here, students focusing on the different types of performance goals divided into two or three separate groups with slightly different emphasis (e.g., achievement vs. avoidance of incompetence). Although it is therefore likely that the groups detected in the present work are not fully representative of the variety of goal orientation profiles found in the population, and thus do not fully capture the consequences these different patterns may have in terms of achievement behavior and outcomes, the congruence of the present findings nevertheless provide support for the theoretical assumptions made and thereby illustrate the utility of examining individual differences in goal orientations from a person-centered perspective.

[24] The fourth class only included two cases, and was thus taken to represent a sort of outlier group.

tional profile with a special emphasis on the role of effort and effective learning strategy use; performance-oriented students stressed ability-related factors and reported approaching study tasks with the help of superficial strategies; and avoidance-oriented students displayed the least positive profile of beliefs as well as the most passive profile of learning strategy use. Study III extended these findings by focusing on students' situational appraisals. Among other things, the results showed that mastery-oriented students seem most "resistant" to different contextual cues; that is, the instructional conditions appeared to have no particular influence on these students' situational appraisals. In stark contrast to this was the patterning of appraisals among performance-oriented students. For these students, being in an ego-involving situation resulted in lower confidence, lower interest, and more claimed handicaps. This finding provides strong support for the view suggesting that students pursuing performance-related goals and outcomes are particularly sensitized to ability-related information, especially if the link between ability and performance outcomes is made salient (Butler, 1993; Covington, 1992; Dweck, 1991; Elliott & Dweck, 1988).

Study IV added a variable-focused flavor to the above findings. In the context of a specific task situation, mastery orientation was found to influence both anticipated interest and self-efficacy, and it predicted task performance both directly and indirectly through self-efficacy. Performance-approach orientation correlated with causality beliefs of ability (as in Study I), but failed have any influence on situational appraisals or task performance. This particular finding replicated the results of studies I and III thus providing no support for the recent claim suggesting a positive link between performance-approach goals and performance (for a review, see Harackiewicz et al., 2002). In Study I, mastery-oriented students had higher GPA than did performance-oriented students; in Study III, no differences in performance were found between mastery-oriented and performance-oriented students; and in Study IV, performance-approach orientation had no effect on task performance. Although this "failure" could be attributed to some methodological issues – e.g., Study I did not include a specific measure for approach performance orientation, and in Study III, the performance-oriented students were not exactly performance-*approach*-oriented – the systematicity of the result suggests that other reasons might underlie this observation. As most of the studies evidencing this effect have focused on college students, it may be that it simply does not exist among younger students. It could also be that the externally assigned tasks used here (Studies III and IV) were not sufficient to activate performance-oriented students' task commitment and thus failed to elicit the anticipated effect. However, consider-

ing the fact that Study I showed no differences in long-term school achievement either, this explanation seems to be unwarranted.

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With respect to gender, the present work showed that the relationships between different types of goal orientations are identical for boys and girls. However, differences in variable means were found, and were consistent in different studies. In line with prior findings (Meece & Jones, 1996; Pajares et al., 2000; however, see Pajares & Valiante, 2001; Patrick, Ryan, & Pintrich, 1999), studies I and IV both suggested that boys are clearly more performance-oriented and ability-focused than are girls. Since the present data do not provide any explanations for these differences, one may only suspect that socialization practices both at home and in school bring about and enhance these stereotypical differences (Mueller & Dweck, 1998; Wentzel, 1999; Wentzel, 2002).

Study II provided an answer to the question of whether the types of goal orientations identified in Finnish students can be generalized for different cultures. The results showed that that this indeed is the case. However, despite the identical measurements of goal orientations, several differences in how goal orientations correlate with different types of action-control beliefs, especially with causality beliefs, were also found. The patterning of these differences reflected the different meanings the Japanese attach to the concepts of effort and ability. In contrast to western cultures, where effort and ability are seen as inversely related (e.g., high effort is often taken to imply low ability), the Japanese tend to see them as complementary forces: the development of ability requires high effort, and successful effort expenditure implies high ability (e.g., Heine et al., 2001; Heine & Lehman, 1999; Heine et al., 2000; Holloway, 1988; Markus & Kitayama, 1991). In this respect, the variation in correlations were not indicative of poor assessment, but a valid reflection of true cultural differences.

Differences in variable means were very different from what was expected. Although the first look at these findings seemed paradoxical, a broader view on the functional meanings of achievement goal orientations seemed to clarify the picture. The fact that Japanese students displayed the strongest emphasis on performance goals should not be understood as reflecting the motive of self-enhancement (as is the case in Western cultures, see Banaji & Prentice, 1994; Heine & Lehman, 1995, 1997), but rather as reflecting the motive of approval-seeking and the task of fulfilling obligations to the family (see Markus & Kitayama, 1991; Samimy et al., 1994; Stevenson et al., 1990; Weisz, Rothbaum, & Blackburn, 1984).

Although studies have shown that similar types of goal orientation can be found in different cultures and nationalities (e.g., Lee, Tinsley, & Bobko, 2003; Leondari & Gialamas, 2002; Pintrich, Zusho, Schiefele, & Pekrun, 2001; Salili, Chiu, & Lai, 2001; Salili & Lai, 2003; Yamauchi & Miki, 2003), much of this work has focused on one nationality only, or, in the case of multiple nationalities, has failed to conduct any formal tests of construct comparability. This means that these studies do not necessarily inform us about the *valid* differences or similarities across different cultures. In light of the present findings, this issue becomes critical when interpreting results even within one cultural context; the *meaning* attached to different goal orientations may vary as a function of the nationality or cultural background, and those different meanings reveal something essential about the particular culture.

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For the most part, the results of both variable-centered and person-centered analysis demonstrated the expected relationships between achievement goal orientations and other variables. However, some important shortcomings were detected as well. Most notably, in Study III, the effect of goal orientation grouping on situational appraisals was clearly weaker than expected, and the goal orientation grouping had no influence on task performance. In a like manner, the explanatory power of goal orientations and causality beliefs in Study IV was surprisingly low. These shortcomings clearly raise questions about the appropriateness of the design as well as point to some important limitations of the present work.

Instrumentation is one major aspect that calls for reconsideration – both in terms of operationalization and substantive scope. Regarding the former, some of the constructs were not optimally assessed. The items reflecting self-efficacy especially should be revised to more precisely reflect the intended situation-specific judgments. With respect to the scope, one may also question the appropriateness of our measure of self-handicapping. In Study IV, only 3% of the variance in self-handicapping was explained by independent measures, and, contrary to what was expected, self-handicapping failed to predict performance. Given these results, it may be that the type of operationalization followed did not fully capture the intended aspects of self-handicapping.

Another issue concerns the assessment of interest. The form of interest examined in the present context is positioned somewhere between personal and situational interest. It is likely that ratings of interest in the present context are influenced by both personal interests and the perceived interestingness of the task situation. However, from a functional point of view, the anticipated interest should be

seen as an expectancy of task-related interest, against which the actualized interest is then compared. While it can be assumed that such pre-task anticipation of interest may directly influence the way the students approach a task, it is also likely that the degree of discrepancy between anticipated and actualized interest has an additional effect on task engagement. For example, the feelings students experience during a task may be more positive if the anticipated interest was low and the actualized interest high (i.e., positive discrepancy), than if both the anticipated and the actualized interest were high. Future work should thus include indices of actualized interest (e.g., ratings of interest while working on the task), which could then be contrasted with the anticipated interest. The degree of discrepancy between these ratings would inform us about the dynamics of students' experiences of task-related interest.

Even so, it is clear that even these improvements would not entirely change the situation; something else appears to be missing from the picture as well. One possibility is in fact explicated in the theoretical model the present work was based on. As shown in Figure 1, an important set of processes is specified between the appraisal outcomes and behavior – the transformation of action tendencies into motivated activity action. This stage reflects the volitional processes responsible for initiating and maintaining the actual striving for the goal (Corno & Kanfer, 1993; Kuhl, 1984). Focusing on this type of mediating processes might thus improve predictions and enhance explanatory power.

Another possibility would be to include more precise measurements of situational goals (Bandura, 1988; Harackiewicz & Sansone, 1991; Latham & Locke, 1991; Wood, Bandura, & Bailey, 1990; Zimmerman, Bandura, & Martinez-Pons, 1992). As suggested in relation to Study IV, it is possible that the types of externally assigned tasks used here are not sufficient to generate the relevant task commitment. Inquiring about a task-specific goal might thus shed some light on this issue.

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The methodological strengths and weaknesses of the present work boil down to the same source, that is, to the use of different types of empirical approaches. Although variable-centered and person-centered approaches both have their merits, interpreting results from different perspectives becomes a difficult task. Thus, shifting the focus between variables and individuals as units of assessment may result in confusion rather than clarity.

In contrast to variable-centered methods, which are rather straightforward,[25] the heuristic nature of much of the person-centered methodology results in some noteworthy risks and weaknesses. In the present work, this is reflected in the classification solutions obtained in Studies I and III (see footnote 23).

Despite these methodological weaknesses, the use of a person-centered approach also has some obvious strengths. Especially useful is its ability to describe the representativeness of the given phenomena in terms of frequencies. Consider the following: In contrast to some other models of achievement goal orientations, the present work included avoidance orientation as one presumably important type of goal orientation. It was argued that the exclusion of such tendencies would leave much of the achievement-related behavior unexplained. This also proved to be the case in the present context. In Study I, the percentage of avoidance-oriented students in the sample was almost 40%, while in Study III it was over 20%. Although these differences point to the general problems of classification identified above, the results also show that a considerable number of students seem to reflect strong avoidance tendencies. From a practical point of view, understanding the representativeness of this type of orientation is of special importance.

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Two of the studies included in the present work sought to extend the prior work on achievement goal orientations by focusing on students' experiences during the actual task engagement. Although these studies clearly had their merits, future work should be even more precise in focusing on the processes taking place while students work on the task. Other issues that should be tackled in future work include general long-term development in achievement goal orientations, longitudinal relationships between classroom goal structures and personal goal orientations, the influence of parenting styles on the development of achievement goal orientations, and the influence of peers and other social groups on the development of achievement goal orientations. The possibly moderating role of gender in the development of goal orientations should also be examined. Finally, the kind of experimental work conducted in studies III and IV could be expanded to include two or more different nationalities, thus putting the general cross-cultural differences into action.

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[25] Note that one limiting aspect of this straightforwardness is the focus on linear and main effects. Thus, there is always the risk that the exlusion of nonlinear and interactional effects may seriously simplify the true or naturally occurring dependencies between different phenomena.

There is no doubt that the ethos of our school system is largely based on the idea of increasing and demonstrating competence. The inherent system of external standards sets a stage on which the actors, the students, must give their best. However, as the results of the present study clearly show, there are considerable differences in how students approach this educational task. From a practical point of view, a more thorough understanding of these individual differences might help the educators create learning settings that more appropriately meet different students' needs and goals. The present study shows that many students consider schoolwork to be rather meaningless and boring and an even greater number of students are primarily concerned about how they do in relation to others. Thus, the greatest challenge teachers and educators face now concerns how to create conditions that facilitate students' true task commitment by reducing the excessive focus on relative performance and by enhancing genuine task and subject interestingness.

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