Focus on your strengths?
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1. Introduction

The purpose of this dissertation was to provide insight into the motivational consequences of a self-regulatory strategy that has been proposed to enhance learning: focusing on strengths. To this end, we examined the relations between perceived relative strengths versus weaknesses and learning effort. Over the course of nine empirical studies we addressed four research questions: (1) What is the relation between perceived relative strengths versus weaknesses and effort intentions? (2) How can we explain the relation between perceived relative strengths versus weaknesses and effort intentions? (3) What is the relation between perceived relative strengths versus weaknesses and (intended and behavioral) effort? (4) What is the effect of the learning context on the relation between perceived relative strengths versus weaknesses and (intended and behavioral) effort?

In this final chapter, we first summarize our main findings. Next, we discuss the theoretical implications of our findings. We then address several strengths and weaknesses of our research and highlight directions for future research. We conclude this chapter with a discussion of the practical implications of our research.

2. Summary of our Main Findings

In Chapter 2, we addressed our first two research questions: what is the relation between perceived relative strengths versus weaknesses and effort intentions, and how can we explain this relation? We presented the results of two randomized experiments, one conducted online (n = 174) and one in the classroom (n = 267), in which we examined the effects of perceived relative strengths versus weaknesses on students’ intentions to put effort into self-regulated learning activities. In both studies, we found that students who first ranked a number of professional qualities from their perceived relative strengths to weaknesses, and subsequently selected a learning activity to further improve their strengths (i.e., applied a strength-based self-regulated learning strategy) felt more competent, more intrinsically motivated, and more willing to invest effort, relative to those who subsequently selected a learning activity to improve their weaknesses (i.e., applied a deficit-based self-regulated learning strategy). Moreover, in both studies, the results of multi-mediator analysis and structural equation modeling showed that the
effect of perceived relative strengths versus weaknesses on effort intentions was sequentially mediated by perceived competence and intrinsic motivation, which indicates that, relative to individuals who focus on their weaknesses, individuals who focus on their strengths feel more competent; therefore, they are more intrinsically motivated, and therefore, they are more willing to invest effort.

In Chapter 3 we addressed our third research question: What is the relation between perceived relative strengths versus weaknesses and (intended and behavioral) effort? We presented the results of two empirical studies, in which we used a within-person design to examine the relations between perceived relative strengths versus weaknesses and intended and actual effort, respectively, in the context of self-regulated online learning. In Study 1 \( n = 115 \), the participants first ranked a number of topics from their perceived relative strengths to weaknesses and subsequently indicated how they would allocate their effort and time if they were given the opportunity to follow online courses on these topics. The results showed that the participants intended to allocate more effort and time to online courses in the area of their strengths than to online courses in the area of their weaknesses. In Study 2 \( n = 58 \) the participants first ranked a number of skills from their perceived relative strengths to weaknesses, and were subsequently given the opportunity to use different e-learning modules to practice these skills. The results showed that the participants actually invested more behavioral effort into practicing skills in the area of their strengths rather than their weaknesses.

The studies in Chapters 2 and 3 were conducted in a self-regulated rather than a test-directed learning context. That is, in both studies, the participants performed learning activities in which they could engage voluntarily, without the prospect of being tested afterward. In such a learning context, we consistently found that individuals put more effort into their strengths than into their weaknesses.

In Chapter 4, we addressed our fourth research question: What is the effect of the learning context on the relation between perceived relative strengths versus weaknesses and (intended and behavioral) effort? We presented the results of five studies designed to examine the moderating effect of the learning context on individuals’ effort allocation to their strengths and weaknesses when working on multiple goals during a single period of time. We expected that, in contrast to a self-directed learning context, in a test-directed learning context, students put more effort into their weaknesses than into their strengths in order to meet the external standards.
Studies 1 \((n = 95)\) and 2 \((n = 116)\) were scenario studies in which students were asked to allocate a limited amount of time across a number of school subjects, which they had ranked from their relative perceived strengths to weaknesses. We used a mixed factorial design, with learning context as the between-person factor, perceived relative strengths versus weaknesses as the within-person factor, and allocated time as the dependent variable. In line with the results presented in Chapters 2 and 3 we found that, in a self-regulated learning context, the participants allocated more time to their relative strengths. In contrast, in a test-directed learning context, the participants allocated more time to their perceived relative weaknesses.

Study 3 \((n = 46)\) was a field study in which we used a two factor within-person design, with learning context and perceived relative strengths versus weaknesses as the within-person factors, and allocated time as the dependent variable, to examine students’ effort allocation across their perceived strongest versus weakest school subject in the course of a semester. In line with Studies 1 and 2, the results showed that students’ effort allocation changed as a function of changes in the learning context. When they felt free to follow their own interests (i.e., a self-directed learning context), students allocated more effort to their strengths. However, during the test week (i.e., a test-directed learning context), students allocated more effort to their weaknesses.

Finally, Studies 4 \((n = 148)\) and 5 \((n = 78)\), were laboratory studies designed to test the causal effects of the learning context on individuals’ effort allocation to their strengths and weaknesses, when practicing multiple skills on a single occasion. A mixed factorial design was used, with learning context as the between-person factor, perceived relative strengths versus weaknesses as the within-person factor, and allocated effort as the dependent variable. In line with Studies 1-3, we found that participants who were told that the purpose of their practicing was to develop their skills as they saw fit (i.e., a self-directed learning context) invested more behavioral effort into practicing skills in the area of their strengths. In contrast, participants who were told that they would be tested afterwards (i.e., a test-directed learning context) invested more behavioral effort into practicing skills in the area of their weaknesses.

Thus, consistently across these five studies, we found that the learning context moderates the relation between perceived relative strengths versus weaknesses and (intended and behavioral) effort. In a self-directed learning context, perceived relative strengths versus weaknesses are positively related to effort. In contrast, in a test-directed learning context, perceived relative strengths versus weaknesses are negatively related to effort.
3. Theoretical Implications and Contributions

Our main findings are that both positive and negative relations between perceived relative strengths versus weaknesses and (intended and behavioral) effort exist, and that the relation between perceived relative strengths versus weaknesses and effort is moderated by the learning context (self-directed versus test-directed). These findings contribute to the extant literature on (1) strengths-based development, (2) competence self-perceptions in motivation, and (3) effort allocation in multiple-goal pursuit.

3.1. Strengths-based development

Despite considerable interest among practitioners, to date, not much research has examined the motivational consequences of perceived relative strengths versus weaknesses in the context of learning and development. The extant research on strengths-based development suggests that perceived relative strengths are positively related to motivational variables, such as need satisfaction (Linley et al., 2010), engagement (Meyers et al., 2015), and effort intentions (Rechter, 2010, Study 2). The present findings make several important contributions to this literature. First, in addition to the relations with subjective motivational variables that were found in previous research, our findings demonstrate that perceived relative strengths versus weaknesses are significantly related to behavioral effort. Second, our research yielded an explanation for the motivating potential of perceived relative strengths versus weaknesses. Our findings indicate that individuals who focus on their strengths feel more competent; therefore, they are more intrinsically motivated, and therefore, they are willing to invest more effort. Third, our findings suggest that the positive relations that were found in previous research are likely to be observed in self-regulated learning contexts only. We argued and demonstrated that in test-directed learning contexts, perceived relative strengths versus weaknesses are negatively related to effort.

3.2. Competence self-perceptions and motivation

Our findings also contribute to the literature on the role of competence self-perceptions in motivation. Influential motivation theories, such as cognitive evaluation theory (Deci & Ryan, 1985) and social cognitive theory (Bandura, 1997), posit that self-perceived competence is beneficial for learning. However, other theories state that self-perceived competence may be negatively related
to effort (Vancouver et al., 2008; Forsyth et al., 2007). Specifically, control theory (Carver & Scheier, 1982) posits that goal-directed effort is instigated by perceived discrepancies between the actual situation and a goal. As individuals believe themselves to be more competent, they may perceive discrepancies as easier to bridge. Therefore, higher perceived competence may signal that less effort is needed to attain a goal.

Yet, our findings indicate that in the context of learning and development, competence self-perceptions can play both a positive and a negative role in effort exertion. Which role prevails depends on the learning context. In a self-regulated learning context, the positive role prevails, which is in line with cognitive evaluation theory (Deci & Ryan, 1985) and social cognitive theory (Bandura, 1997). However, in a test-directed learning context, the negative role prevails, which is in line with control theory (Carver & Scheier, 1982). Thus, whether or not these theories correctly predict individuals’ effort expenditure as a function of competence self-perceptions depends on the context. Our findings clearly demonstrate that theories that predict either positive or negative relations are incomplete. Motivation theories should account for both positive and negative relations between self-perceived competence and effort.

3.3. Multiple-goal pursuit

In addition, our findings contribute to the literature on the role of competence self-perceptions in multiple-goal pursuit. Building on the work of Möller and Marsh (2013), we defined perceived relative strengths versus weaknesses as a specific category of competence self-perceptions: competence self-perceptions that result from dimensional comparisons rather than from social comparison (Festinger, 1954) or temporal comparisons (Albert, 1977). In line with the work of Möller and Marsh (2013), our findings indicate that in the context of learning and development, individuals make dimensional within-person comparisons of their relative strengths and weaknesses. Our findings extend the work of Möller and Marsh (2013) by demonstrating that self-perceptions of relative strengths and weaknesses have considerable behavioral consequences. In multiple-goal contexts, such as education and professional development, individuals’ self-perceptions of relative strengths versus weaknesses concerning their goals are significantly related to their effort allocation across their goals. In a self-directed learning context, individuals tend to put more effort into their strengths, whereas in a test-directed learning context, individuals tend to put more effort
into their weaknesses. Hence, theories of motivation in multiple-goal pursuit should assign a prominent role to the concept of perceived strengths versus weaknesses, and recognize the effect of the learning context on individuals’ effort allocation.

4. Strengths and Weaknesses of the Present Research and Future Directions

Similar to individuals, our research has strengths and weaknesses. In this section, we discuss the main issues and indicate avenues for future research.

First, an important strength of our research is that we used clearly delimited unidimensional manipulations, rather than broad interventions such as strengths-based development coaching trajectories or courses (cf., Meyers et al., 2015). In all our studies, we compared conditions that were exactly identical with the exception of a single variable (i.e., working on strengths versus weaknesses). An advantage of this approach is that we can be confident that the observed differences in effort between the conditions can be attributed to the variable that we manipulated. Our approach enables us to draw clear conclusions on relations between theoretical constructs; between working on strengths versus weaknesses, on the one hand, and effort, on the other hand. However, this conceptual rigor may have a price. Based on the present research, we cannot tell yet whether in practice strengths-based development coaching or strengths-based development courses will enhance individuals’ learning. Future research should address this issue by examining the effort effects of strengths-based development coaching and courses in applied settings.

A second important strength is that we found a consistent pattern across all of our studies. Specifically, in Chapter 2, Study 2 replicated Study 1; in Chapter 3, Study 2 replicated Study 1; in Chapter 4, Study 2 replicated Study 1, and Study 5 replicated Study 4. Replication of research findings is an important issue in psychological research. The results of psychological research have sometimes been shown to be difficult to replicate, which casts doubt on the reliability of psychological theory (Open Science Collaboration, 2012; Open Science Collaboration, 2015). Because we replicated many of our findings, we are confident that our results are reliable.

A third strength of our research is that we used a variety of methods to examine the role of working on strengths versus weaknesses in effort
expenditure, including randomized experiments (Chapter 2), multiple-goal designs (Chapter 3), multiple-goal repeated measures designs (Chapter 4, Study 3), and mixed factorial designs (Chapter 4, Studies, 1, 2, 4, and 5). However, a few missing links remain. In Chapter 2, we used a randomized experimental design to examine the effects of perceived relative strengths versus weaknesses on effort intentions. In Chapter 3, we used a cross-sectional within-person design to examine the relations between perceived relative strengths versus weaknesses and behavioral effort. Hence, the causal effect of working on strengths versus weaknesses and behavioral effort remains to be established. Similarly, in Chapter 4, Studies 3 and 4, we used a mixed-factorial design to examine the causal effects of the learning context on the relation between working on strengths versus weaknesses and effort. However, to establish an interaction between the causal effect of the learning context and the causal effect of working on strengths versus weaknesses on effort, both independent variables should be experimentally manipulated (e.g., by using a randomized 2 × 2 between-person design). Future research should verify the causal nature of the relation between perceived relative strengths versus weaknesses and behavioral effort, and the interaction between the effects of perceived relative strengths versus weaknesses and the learning context on effort.

Fourth, we used a variety of measures to assess individuals’ effort, including effort intentions, intended allocated time, subjective effort, and number of performed exercises. However, using an even greater variety of effort measures would have made our case still stronger. Future research may use additional measures, such as invested time and physiological measures of effort, to examine the role of perceived relative strengths versus weaknesses in effort.

Fifth, a variety of students participated in our research, including secondary school students, college students, and university students. Because our findings are likely to be relevant for other learners as well, including working professionals, future research should verify the generalizability of our findings among other learners.

Finally, an important strength of our research is that we used a multiple-goal approach to examine the role of competence self-perceptions in effort. Applied contexts are typically multiple-goal contexts in which individuals work on several goals during a period of time. In multiple-goal contexts individuals’ competence self-perceptions and effort allocation across multiple goals are likely to be interrelated. Putting more effort into one goal is likely to come at the expense of another goal. Hence, the applicability of knowledge from single-goal
research in real-life contexts is limited. Therefore, future research should build on and extend this multiple-goal paradigm (cf., Unsworth, Yeo, & Beck, 2014). For example, an interesting question is whether varying relations between competence self-perceptions and effort also yield over extended periods of time. In the present dissertation, we focused on the short-term consequences of working on strengths versus weaknesses on effort. However, several scholars have emphasized that competence self-perceptions are particularly beneficial for sustained effort (Sheldon & Elliot, 1999; Deci & Ryan, 1985). Therefore, future research should examine the long-term consequences of working on strengths versus weaknesses on effort in multiple-goal pursuit. The multiple-goal repeated measures design that we used in Chapter 4, Study 3, could be used in longitudinal research to examine the dynamics of the relations between perceived strengths and weaknesses and effort expenditure over extended periods of time.

5. Practical Implications

Now that we have come to the closing section of this dissertation, what can we advise educators, employers, students, and professionals, based on our research findings? As indicated in the introductory chapter of this dissertation, developing competence is an important determinant of the quality of our lives. Therefore, there is great demand for strategies that may enhance learning. Is focusing on one’s individual strengths rather than weaknesses a strategy that motivates individuals to learn? Do individuals put more effort into learning activities when they work on qualities, topics, or skills in the area of their strengths rather than their weaknesses?

The answer is, it depends on the learning context. In a self-regulated learning context, when individuals feel free to engage or not to engage in learning activities, focusing on strengths rather than weaknesses may be an effective motivational strategy. In this context, individuals are likely to put more effort into their learning when they pick learning activities that match their strengths. For example, schools, colleges, and universities typically offer their students the opportunity to follow elective courses, and to engage in extracurricular activities, in addition to the standard curriculum. Similarly, employers may offer their employees a choice of professional training and development opportunities in which they may engage or not engage as they see fit. For example, many organizations have a web-based professional development portal containing
e-learning facilities for their employees. In addition, professionals may use online educational platforms such as Coursera (www.coursera.com), edX (www.edx.org), and Khan Academy (www.khanacademy.org), to work on their professional development. In such self-directed learning contexts, feeling competent is likely to be beneficial for learning effort, because it bolsters individuals’ intrinsic motivation, which is crucial when there is little external pressure.

However, self-directed learning contexts, in which individuals genuinely feel free to engage or not to engage in learning activities, may not be so common. Students typically know that they will have to pass their tests to complete their studies. For many students, passing the tests is their first priority. Similarly, employees know that they have to meet job requirements. For employees, the external standards explicated in job descriptions, competency profiles, and performance reviews are an important frame of reference. In such test-directed learning contexts, individuals are unlikely to put more effort into learning activities when they work on their strengths rather than their weaknesses. For example, a math teacher may afford students the opportunity to work individually on a topic of their choice during the following semester (e.g., statistics, geometry, etc.). In this context, if the prevailing standards for each topic are similar, and the students are predominantly focused on external standards, they are likely to invest less effort when they pick a topic that they perceive as a relative strength. Similarly, an employer may afford employees the opportunity to engage in a selection of professional development activities as they see fit. However, if those employees are predominantly focused on meeting external requirements, they are likely to invest less effort when they engage in learning activities in the area of their strengths than when they engage in learning activities in the area of their weaknesses.

Thus, paradoxically, educators who aim to stimulate their students to learn, or employers who aim to stimulate their employees to work on their professional development, may end up with disappointing results by advising them to work on their strengths rather than their weaknesses. Although working on strengths rather than weaknesses may stimulate individuals to put more effort into learning activities, our findings clearly indicate that the positive role of perceived strengths only manifest itself in self-directed learning contexts, when individuals feel free to engage or not to engage in learning activities. The positive role of perceived strengths does not emerge in test-directed learning contexts, when individuals are focused on meeting external standards. Thus, focusing on strengths is perhaps more useful as a strategy for individuals to
motivate themselves to learn, than as a strategy for those in control, such as educators or employers, to motivate others to learn.