



Self-Regulation Skills and Achievement In University Students

Anja Achtziger¹, Ute C. Bayer¹ & Peter M. Gollwitzer^{1,2}

¹ Universität Konstanz

² New York University

Aims of the Study

- Is there a correlation between self-regulation measured by questionnaires and academic success of university students?
- Do some aspects of self-regulation (e.g., promotion motivation, action orientation after failure) predict academic achievement in German high schools and universities better than other aspects of self-regulation?



Research in the USA

Positive correlation between self-regulation and performance

- ➔ Haggard (1957): students with high self-regulation skills showed higher performance than students that were more intelligent but only had low SR skills (see also Zimmerman & Martinez-Pons, 1986, 1990)
- ➔ Duckworth & Seligman (2005): SR predicts academic performance better than IQ
- ➔ Duckworth & Seligman (2006): girls show higher SR skills and better grades than boys



Research in Germany

Positive correlation between self-regulation and performance

- Spörer & Brunstein (2005): 215 8th graders of different German schools showed a positive correlation between academic performance and self-regulation
- Spörer et al. (2006): in a longitudinal study 8th and 9th graders high in self-regulation showed an increase in math performance



Background

Theories on self-regulation

1. Theory of Action and State Orientation (Kuhl, 1983, 1991)
2. Regulatory Focus Theory (Higgins, 1997, 1998)



Theory of Action and State Orientation (Kuhl, 1990)

Action Orientation After Failure vs. Preoccupation (AOF):

- Degree to which one is able to stop ruminating about an aversive event

Decision-Related Action Orientation vs. Hesitation (AOD):

- Being initiative or hesitating
- Deliberating whether to identify with an intention

Performance-Related Action Orientation vs. Volatility (AOP):

- Degree to which one is able to stay with a goal-directed activity

⇒ Students high in AOF, AOD, and AOP should have higher academic achievements than Students low in these scales



Regulatory Focus Theory (Higgins, 1991)

Promotion Focus:

- Desire to attain positive outcomes (success)
- Trying to make progress and to be successful
- More persistent during task performance (Förster et al., 1998)

Prevention Focus:

- Desire to avoid negative outcomes (failure)
- Trying to be secure
- Less persistent (Förster et al., 1998)

⇒ Students high in promotion focus should have higher academic achievements than students high in prevention focus

Hypotheses

- Students with high promotion motivation have better high school and university grades than students with high prevention motivation
- Students who are action oriented show higher academic achievement than students who are state oriented



Participants

- 60 students of the University of Konstanz
- Women: 30; Men: 30
- Age: $M = 24.5$, $SD = 2.39$
- Mean number of semesters: $M = 7.73$, $SD = 3.47$



Procedure

- Completing one of two questionnaires on self-regulation (RFQ, Higgins et al., 2001 ; ACS, Kuhl, 1990)
 - RFQ ⇒ two subscales: promotion focus and prevention focus
 - ACS ⇒ three subscales: action orientation after failure (AOF), decision-related action orientation (AOD), performance-related action orientation (AOP)
- Completing a questionnaire on academic achievement (grades) in high school and on university grades, gender, and age



Results

Equivalence of groups:

- ➔ No differences between the two groups of participants (RFQ vs. ACS) concerning age, number of semesters, grades in high school (all $F_s < 1$)
- ➔ Equal numbers of women and men in both groups



Results

$R^2 = .31$ (corrected); $F(3,24) = 3.6$; $p < .05$

	<i>Standardized Regression Coefficient (β)</i>	<i>T</i>	<i>Significance</i>
<i>AOF</i>	.45**	2.39	.02
<i>AOD</i>	.21	1.1	.28
<i>AOP</i>	-.05	-.27	.78

Regression of Action Orientation After Failure, Decision-Related Action Orientation, and Performance-Related Action Orientation on High School Achievement



Results

$R^2 = .02$ (corrected); $F(3,20) = 1.16$; $p = .35$

	<i>Standardized Regression Coefficient (β)</i>	<i>T</i>	<i>Significance</i>
<i>AOF</i>	.39*	1.69	.10
<i>AOD</i>	-.01	-.04	.97
<i>AOP</i>	.14	.63	.53

Regression of Action Orientation After Failure, Decision-Related Action Orientation, and Performance-Related Action Orientation on University Achievement

Universität
Konstanz



Results

$R^2 = .13$ (corrected); $F(4,18) = 1.79$; $p = .17$

	<i>Standardized Regression Coefficient (β)</i>	<i>T</i>	<i>Significance</i>
<i>AOF</i>	.23	.947	.36
<i>AOD</i>	-.14	-.60	.56
<i>AOP</i>	.18	.87	.39
<i>High School Grades</i>	.45	1.82	.08

Regression of Action Orientation After Failure, Decision-Related Action Orientation, Performance-Related Action Orientation, and High School Performance on University Achievement

Universität
Konstanz



Results

$R^2 = -.03$ (corrected), $F < 1$

	<i>Standardized Regression Coefficient (β)</i>	<i>T</i>	<i>Significance</i>
<i>Promotion Fokus</i>	-.17	< 1	<i>n.s.</i>
<i>Prevention Fokus</i>	-.17	< 1	<i>n.s.</i>

*Regression of Promotion Focus and Prevention Focus on High
School Achievement*

Universität
Konstanz



Results

$R^2 = .20$ (corrected), $F(2, 24) = 4.2$, $p < .05$

	<i>Standardized Regression Coefficient (β)</i>	<i>T</i>	<i>Significance</i>
<i>Promotion Fokus</i>	-.46**	-2.62	.01
<i>Prevention Fokus</i>	.10	.54	.59

*Regression of Promotion Focus and Prevention Focus on
University Achievement*

Universität
Konstanz



Results

$R^2 = .18$ (corrected), $F(3, 23) = 2.9$, $p = .05$

	<i>Standardized Regression Coefficient (β)</i>	<i>T</i>	<i>Significance</i>
Promotion Fokus	-.46*	-2.48	.02
Prevention Fokus	.13	.69	.50
High School Grades	.15	.82	.42

Regression of Promotion Focus, Prevention Focus, and High School Performance on University Achievement



Summary and Discussion

1. Promotion focus predicts academic achievement at university but not at high school
 - The impact of the PF was stronger than that of high school performance (!)
2. Prevention focus did not predict academic achievement at university as well as at high school
3. The impact of promotion focus and prevention focus on academic achievement in the university was independent from high school performance
4. Strong correlation between action orientation after failure and academic achievement at high school and University ⇒ high action orientation originally was assumed as focusing strongly on current goals after experiencing failure, by ignoring the failure, controlling emotional distress and so on ⇒ however, this might be counterproductive!



Thanks to...

- ... Isabelle Bolz
- ... Tobias Gronbach
- ... Patricia Heppler
- ... Eliza Latein



Action orientation after failure vs. preoccupation (AOF):

➤ When I have lost something that is very valuable to me and I can't find it anywhere:

A. I have a hard time concentrating on something else

B. I put it out of my mind after a little while

Decision-related action orientation vs. hesitation (AOD):

➤ When I know I must finish something soon:

A. I have to push myself to get started

B. I find it easy to get it done and over with

Performance-related action orientation vs. volatility (AOP):

➤ When I'm working on something that's important to me:

A. I still like to do other things in between working on it

B. I get into it so much that I can work on it for a long time



Results: Regulatory Focus Questionnaire (Higgins et al., 2001)

	<i>Achievement in High School (Abitur)</i>	<i>Achievement in University</i>
<i>Regulatory Focus Questionnaire (Higgins et al., 2001; n = 30)</i> → <i>Promotion Focus</i> → <i>Prevention Focus</i>	$r =$	



Results: Self-Control Scale and Regulation Focus Questionnaire (Higgins et al., 2001)

	<i>Achievement in High School (Abitur)</i>		<i>Achievement in University</i>	
	<i>Women</i>	<i>Men</i>	<i>Women</i>	<i>Men</i>
<i>Self-Control Scale (Tangney et al., 2004)</i>				
<i>Regulation Focus Questionnaire (Higgins et al., 2001)</i> ↘ <i>Promotion</i> ↘ <i>Prevention</i>				



Results: HAKEMP 90 (Kuhl, 1990)

	<i>Achievement in High School (Abitur)</i>	<i>Achievement in University</i>
<i>(Action Orientation After Failure; HOM)</i>		
<i>(HOT)</i>		
<i>Capability of Planning Actions (HOP)</i>		



Results: HAKEMP 90 (Kuhl, 1990)

	Achievement in High School (Abitur)	Achievement in University
	Women Men	Women Men
(Action Orientation After Failure; HOM)		
(HOT)		
Capability of Planning Actions (HOP)		

