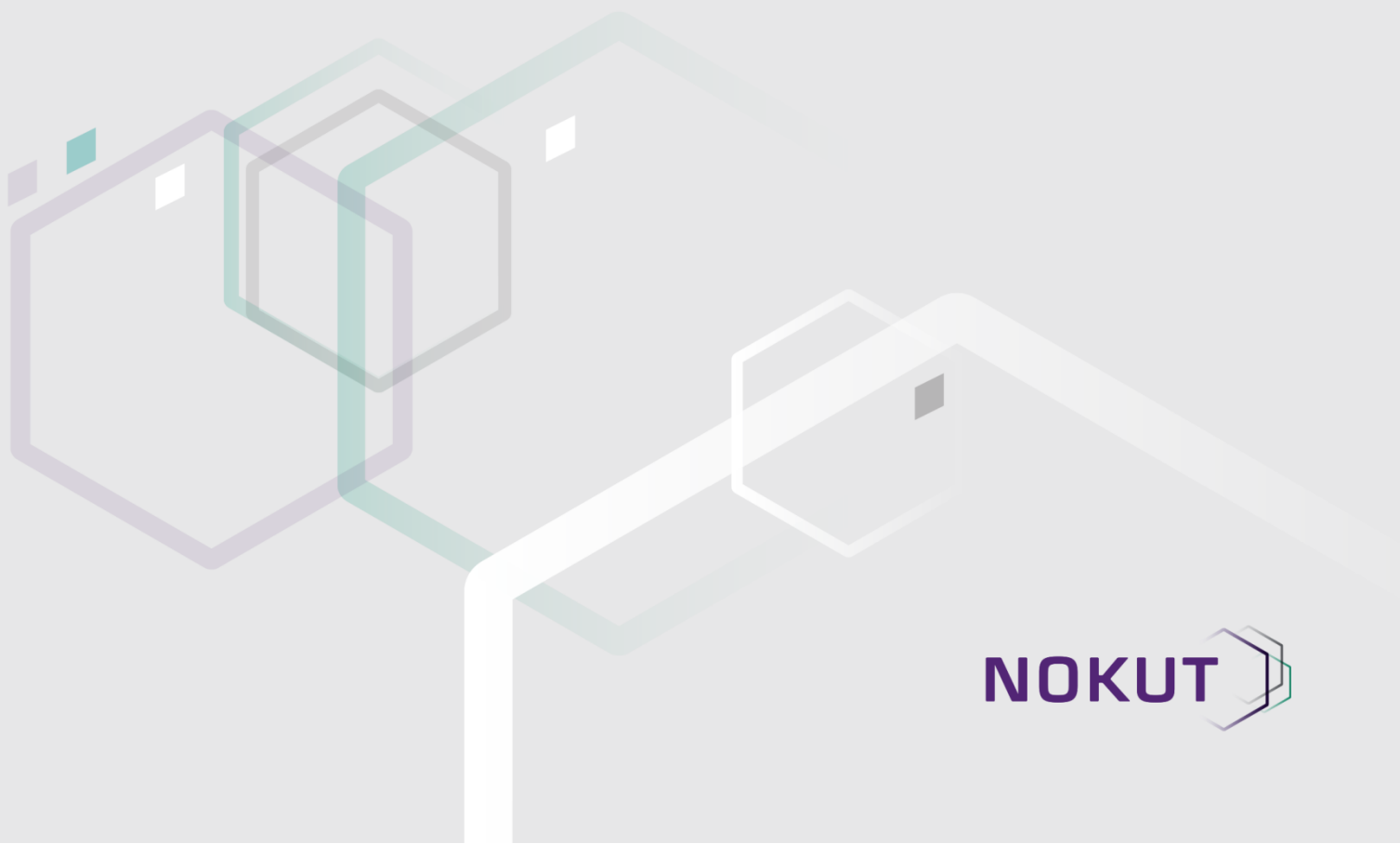


Studiebarometeret: Rapport 3-2016

# The influence of faculty expectations on students' workload

Searching for academic challenges



NOKUT 

**The influence of faculty expectations on students' workload:**

**Searching for academic challenges**

Paper presented in track 5 at the

**EAIR 38<sup>th</sup> Annual Forum in Birmingham, United Kingdom**

**31 August to 3 September 2016**

***Name of Author(s)***

Marie-Louise Damen

Pål Bakken

Magnus Strand Hauge

***Contact Details***

Marie-Louise Damen

Norwegian Agency for Quality Assurance in Education (NOKUT)

Postboks 578

1327 Lysaker

Norway

***Key words:*** study hours, student engagement, teacher expectations

***Short abstract***

**The influence of faculty expectations on students' workload: searching for academic challenges**

Students' study time is thought to be influenced by academic aspirations, expectations and demands of faculty members. The higher faculty members' aspirations and demands, the higher and the more effective is students' study time investment. The Norwegian Agency for Quality in Education tested this hypothesis by studying the relationship between faculty members' aspirations and demands on the one hand, and students' study time on the other in the Norwegian national student survey. Results show that the influence of faculty members' aspirations is stronger for students' self-study hours, while the influence of demands is stronger for students' time devoted to organized learning activities. We also found that both clear and unclear demands lead to a high devotion of self-study time, while the latter is assumed as a non-effective way of learning.

## **The influence of faculty expectations on students' workload: searching for academic challenges**

### **Abstract**

Students' retention, progression and completion have been the focus among higher education institutional practitioners, researchers and policy makers for many years now. Research shows that students' sense of belonging and engagement are essential for achieving these aims (a.o. Kuh, Cruce, Shoup & Kinzie 2008). Earlier research framed student engagement as the time and energy students invest in educationally purposeful activities, in combination with the effort institutions devote to using effective educational practices (Kuh 2001). Student surveys often show considerable variation among study programs in the time students invest in educational activities. Students' study time is thought to be influenced by the academic aspirations, expectations and demands of faculty members. The higher and the more clearly faculty members' academic aspirations and demands, the higher and the more effective is students' study time investment. In this paper we test this hypothesis by studying the relationship between faculty members' aspirations and demands on the one hand, and students' study time on the other. We use quantitative data on study time and faculty expectations from the Norwegian national student survey 'Studiebarometeret'. We conducted focus group interviews with students and faculty members of selected study programs to learn more about *how* faculty members' expectations influence the students. Results show that there is indeed a relationship between students' study time and faculty members' demands and aspirations. The influence of faculty members' academic aspirations is stronger for students' self-study, while the influence of demands is stronger on students' time devoted to organized learning activities. The interviews made clear that heterogenic student groups with respect to start competences, motivation and learning styles makes it difficult for institutions to set clear demands for all students. The interviews also showed that both clear and unclear demands lead to a high devotion of study time, while the latter is assumed as a non-effective way of learning. This curve linear effect is partly confirmed in the quantitative survey data.

### **Introduction**

There is ample research showing that teacher expectations about students' future achievements can positively and/or negatively influence student performance (Rubie-Davies, Hattie & Hamilton 2006). Effects of teacher expectations are classified in sustaining expectation effects and self-fulfilling prophecy effects (Brophy 1983, Jussim 1986). Sustaining expectations induce students to perform the way they do and therefore hamper change in students' behavior. Self-fulfilling prophecy effects, on the contrary, encourage change because they are created when potential false beliefs lead to fulfillment. Low teacher expectations hinder student achievement and therefore lead to undesirable and negative effects (Golem-effects), while

high teacher expectations enhance student achievement, leading to positive and desirable effects (Pygmalion-effects)<sup>1</sup>. Other research has been done to find out which student characteristics affected those teacher expectations: amongst others, students' gender, age, personality, social skills, social class and ethnicity all proved to influence teacher expectations (Rubie-Davies, Hattie & Hamilton 2006, Auwarter & Araguete 2008, Diamond, Randolph & Spillane 2004).

The main process of the self-fulfilling prophecy is thought to function as follows: different teacher expectations lead to different teaching approaches who in turn relate to students' learning approaches or strategies, which precede students' learning outcomes (Jussim 1986). Some teaching approaches are thought to be connected to higher expectations, while other approaches are linked to no, or even low, expectations. Trigwell, Prosser and Waterhouse (1999) studied the relations between teachers' approaches to teaching and students' approaches to learning. Teachers' approaches are categorized as teacher-focused strategies, teacher/student interaction strategies and student-focused strategies. The strategies can be directed to knowledge(concepts)-transmission, acquirement, development or modification. The student-focused conceptual change approaches are thought to be linked to higher expectations of the faculty member towards the students. Students' approaches to learning are discerned in a deep and a surface learning approach. The authors study 48 first-year university chemistry and physics classes, comprising 3956 students and 46 teachers. The results show that a teacher-focused information transmission teaching approach relates to a surface student learning approach, while students adopt more likely a deep learning approach when teachers have a student-focused conceptual change approach. Other studies have confirmed that surface learning approaches are related to lower quality learning outcomes (Nonis & Hudson 2010), and deep learning approaches lead to higher quality learning outcomes. In other words, this study suggests that teachers with a student-focused conceptual change approach will enhance higher quality student learning and outcomes, although the authors stressed that it is problematic to evince the causal relationship between these elements.

A third line of research focused on the relationships between student performance, students' learning strategies and study time. In this paper, we investigate which contextual effects will lead to more study time investment by students. We focus on the influence of aspirations, expectations and demands by faculty members towards students. We also discuss whether more study time investment always lead to high quality learning by students.

---

<sup>1</sup> High teacher expectations which lead to high self-belief and expectations by students lead to Galatea-effects, which are even stronger than Pygmalion-effects.

## Background

Studies about the relationship between learning outcomes and study time investment show mixed results. You would expect a positive relationship if the more able students work harder compared to the less able students, but likewise can we expect a negative relationship if the less able students try to compensate for this by working more hours compared to the more able students (Bonesrønning & Opstad 2012).

There are two approaches regarding study time: quantitatively and qualitatively (Wijnen et al 2016). The qualitative approach refers to the learning strategies and activities by students, in other words 'how students learn'. The quantitative approach refers to the time investment by students; some students spend more hours studying than others. Many studies showed that there are linear relationships between learning strategies and activities and academic performance (Nonis & Hudson 2010, Wijnen et al 2016). Whether study time investment (the quantitative approach) in itself influences academic success is still highly debated (Ericsson et al 1993, Plant et al 2005, Wijnen et al 2016). Since learning activities always require at least some time investment, it is difficult to disentangle both effects in a research design. The relation between hours of study time and student performance is moderated by learning strategies, likewise is the relation between learning strategies and student performance moderated by hours of study time.

In both cases however, the effect of study time or learning strategies on student performance is context-specific. A deep approach is conceived as more useful or necessary when students for example work on essay assignments, while a surface approach is sufficient when studying for a multiple choice exam. Students' choice for a specific learning strategy and matching study time hours is therefore also dependent on the learning environment. Teachers – their teaching approaches, demands, expectations and aspirations - are an important part of this learning environment. The literature on teachers' aspirations, expectations and demands has mainly focused on the different self-fulfilling prophecy effects. Research questions in this strand of literature have been: where do these expectations come from? How do they influence teaching behavior? And how do they influence students' reactions to that behavior? Brophy (1982) noted that most teacher expectations are generally accurate, which suggests there is in general less risk for Golem- or Pygmalion-effects. However, there is no denial in the literature that these expectations exist and that they influence student behavior. In this paper, we discern demands and expectations on the one hand, and aspirations on the other hand. While demands and expectations refer to the degree to which *specific study activities* are expected to be done by the students, aspiration refers to *the level of ambition* of how well the activities are expected to be fulfilled.

In the substantive research on dimensions of teaching behavior and their influences on students' behavior, teacher clarity stands out as an important factor (Pascarella et al 1994). It is therefore conceivable that the clarity of teacher expectations, aspirations and demands towards students, influence students' study time. Given that students are calculating citizens who tend to invest the amount of study time they are

expected to do, it is important that students *know* what is expected of them. If the demands are clear and sufficiently high according to the students' level, we expect students to study a considerable amount of hours. In this case, we expect a positive linear relationship between the clarity of demands and expectations with students' study time. However, in the case of complete lack of clarity about the demands towards students, it could similarly lead to many hours of study time when students choose to work hard in order to meet all possible (unknown) demands. In turn, in the situation of 'somewhat' clear demands that we see a lower amount of study time hours. Students are not completely unsecure about what is expected, but they will not study at their max at the same time because of the only partly clear demands. In this paper, we therefor consider not only the influence of teachers' expectations, aspirations and demands on study time and learning activities, but also the influence of the clarity of what is expected according to the students on their study time investment.

Not only learning environments, student's choice for learning strategies, and teaching behavior, but also other characteristics influence students' study time. Earlier research describe, amongst others, effects of gender, age, ability, motivation, self-efficacy and paid working hours. In this paper, we control for these effects as far as we have data on these aspects.

### **Data collection**

The starting point of the data collection is the 2015 Norwegian Student Survey 'Studiebarometeret'. In October 2015, 28710 students of a population of 60891 answered the survey, which is 47%. The population consists of all 2<sup>nd</sup> year bachelor- and master program students, as well as 5<sup>th</sup> year students in professional master programs. The Norwegian Agency for Quality Assurance in Education (NOKUT) conducts the annual survey since 2013 commissioned by the Ministry of Education. Nearly all Norwegian higher education institutions participate. NOKUT receives contact information of the students along with some background variables via the HEI's and the central student administration. Students are contacted by email (via their private as well as their institutional email address) and SMS. They fill out the questionnaire digitally, which is available at all possible devices (including phones and tablets). Students who don't answer the questionnaire get a maximum of four reminders in a time span of a month.

The survey's aim is to provide relevant information on current students' opinions on several quality aspects of their study programs. Target groups of the survey and the corresponding web portal [www.studiebarometeret.no](http://www.studiebarometeret.no) – where the results per study program are published - are prospective students, stakeholders of the institutions and the government. The questionnaire contains seven main topics:

- Learning outcomes
- Student assessment

- Working life relevance
- Stimulation and coherence
- Participation
- Study environment
- Teaching and advising

Each topic combines multiple questions within a satisfaction index, which is generated to calculate the mean of the individual items. Two questions ask for the students' study time investment: how many hours per week they spend on average on organized learning activities and on self-study. In addition, the questionnaire includes the statement: "I am, all things considered, satisfied with the study program" to monitor the overall satisfaction with the quality of the study program.

This paper uses data of a survey among a subsample of the larger dataset. Forty-five percent (45%) of the students who participated in the 2015-survey indicated that they could be contacted again. In June 2016, 7129 of these students were contacted again for a survey on aspirations, demands, expectations and again study time use. In total, 2315 (32%) of these 7129 students answered. This is 8% of the total group of 28710 students. Analyses showed that these 2315 students are not very different from the sample in the larger dataset, which was representative for the total population (see Bakken 2016 for an extended description of the data collection).

## **Operationalization**

### *Student engagement: study time and learning activities*

In June 2016, NOKUT measured students' study time by asking how many hours per week students on average spend on 1) organized learning activities. This includes all teaching, counseling and traineeships (if relevant). And 2) how many hours they spend on average for self-study. Full-time students spend on average 17.4 hours per week on organized learning activities, part-time students spent on average 10.8 hours per week. To self-study, full-time students spend on average 20.5 hours per week, while part-time students spend 12.7 hours on average per week to self-study. We calculated a new total study time variable by counting the hours student spend on both organized learning activities and to self-study, only for full-time students (91% of the sample). Full-time students spend, on average, a total of 37.8 hours per week studying. In the analyses we use students' total study time, as well as the time devoted to organized learning activities and to self-study separately. The same questions were asked in the survey to the total student sample of Studiebarometeret in October 2015. The same (full-time) students reported a little more amount of hours now in June, but the difference is small: 17.1 hours organized activities and 20.1 hours self-study makes 37.1 hours total study time in October 2015, versus 37.8 hours total study time in June 2016. The correlation



coefficient (Pearson  $r$ ) between study time in October 2015 and June 2016 has a value of .57, which is somewhat above moderate. The questionnaire in June was sent out in the middle of the examinations period, which is a logical explanation for the small increase in hours. In the analyses we use the data reported in June 2016, but we will check the results with the October 2015 data.

Student engagement can also be operationalized as to what extent students participate in different learning activities. Students answered to what extent they conduct nine different learning activities:

1. to read the curriculum content,
2. to keep yourself professionally updated beyond the curriculum,
3. to set prepared for the lessons,
4. to meet up in lectures, seminars, lab etc.,
5. to participate actively in lectures and seminars,
6. to meet up on student-initiated seminars,
7. to participate actively in student-initiated seminars,
8. to deliver assignments (term papers etc.),
9. to give feedback on other students' work.

The students answered to a Likert-scale varying from 1) never/to a little extent towards 5) to a large extent. The nine learning activities form an index with Cronbach's alpha of .76. The index is calculated as a sum score of the nine activities.

#### *Teachers' expectations, demands and aspirations*

Students answered to what extent they have to meet one of the eight [mentioned] demands and expectations:

1. to read the study plan,
2. to read the curriculum content,
3. to keep yourself professionally updated beyond the curriculum,
4. to set prepared for the lessons,
5. to meet up in lectures, seminars, lab etc.,
6. to participate actively in lectures and seminars,
7. to participate actively in student-initiated seminars,
8. to deliver assignments (term papers etc.).

Again, students answered to a Likert-scale, varying from 1 to 5. The eight sub-questions form together an index with a Cronbach's alpha of .77, so we calculated a sum score of the eight sub-questions which represents the 'amount' of demands and expectations students (perceive to) have to meet.

In addition, students were asked how high or low they perceive the level of aspirations of the expectations and demands towards them (by the faculty). The scale varied from too low (1) to too high (5).

### *Clarity of expectations*

The clarity of expectations is measured by the question to what extent students perceive the expectations and demands to be made clearly. The scale varies from 1) to a little extent, towards 5) to a large extent.

### *Control variables*

Several other characteristics can influence students' study time too, we control for these variables where available. We control for gender, age, field of study, parents education, paid labor, entry level (indicator), bachelor-master, year of study and professional/5<sup>th</sup> year study program. We also control for student's motivation to study. Table 1 shows an overview of the descriptives of all variables in the analyses.

## **Analyses**

We study the influence of teachers' demands and expectations on the one hand and their aspiration level on the other hand on students' study time and engagement. Since we collected hierarchical structured data (students within study programs within institutions) we perform multilevel regression analyses. In the so-called zero-models, we first see how the random effects are divided among the three levels of analyses (table 2). As in most (if not all) multilevel analyses, variance is largest at the individual level. The individual level variance is especially large for students' total study time and their average number of learning activities. For the hours of organized learning activities it shows that there is relatively much variance at the program level and especially at the institutional level. Interestingly, there is no significant variance at the institutional level for hours of self-study and relatively much variance at the program level.

The explanatory models show that teacher demands and expectations and their aspiration level positively influences students' total study time, controlled for different background variables (table 3). The influence of teachers' aspiration level is a little larger compared to effect of demands and expectations, although the difference in effect size is small. Further, we see that master students are working more study time hours than bachelor students, and that second year students (both bachelor and master) work less hours than fifth year students. Finally, motivated students study more hours.

It becomes more interestingly when we look at the different type of hours study time. We see for example that teachers' aspiration level does not influence the hours of organized learning activities, while it certainly has impact on students' hours of self-study. Almost on the contrary: teachers' demands and expectations had some (although weakly significant) effect on the hours of organized learning activities, but did not influence students' hours of self-study. Also, the background variables show some different effects: master students (compared to bachelor students) study more hours on their own, and spend less hours with organized learning activities. Second year students spend less hours self-studying. Students' motivation impacts their hours of self-study, but has no influence on their amount of hours spent on organized learning activities.

Teachers' demands and expectations also influence the average number of learning activities (which represent a specific part of students' engagement). The aspiration level of the teachers does not influence this. Of the background variables, only students' motivation has a positive influence on the average number learning activities.

We also wanted to study whether the clarity of the demands and expectations as communicated by the faculty towards the students influenced the students' study time. Table 4 shows that both very unclear and very clear demands and expectations lead to the highest amount of hours of self-study (on average respectively 22.7 and 22.8 hours self-study). This curvilinear effect is confirmed in a multilevel regression analysis. The effect does not apply for the hours of organized learning activities, nor the average amount of learning activities.

### **Focus group interviews**

In the period April-May 2016 NOKUT conducted semi-structured focus group interviews with 6 bachelor programs. Three different types of study (kindergarten, engineering and political sciences) were selected to participate and 2 programs within each type of study. At each program, the interviewers had one interview with 6-8 students and one interview with 3-4 faculty members (among which often the study program leader). The two programs within each type of study differ widely in average amount of hours of study time, while NOKUT tried to select programs with only highly motivated students. If students' motivation cannot be hold responsible to explain the differences in study time between the programs (because all students are motivated), which factors do? The interviewers asked faculty and students explicitly about how they deal with expectations and demands.

It became clear in the interviews that the study programs differ considerably in the way they convey demands and expectations towards students. Some programs convey these demands and expectations explicitly and consistently, while in other programs students were not at all aware of what was expected of

them. In one case the faculty believed they conveyed their demands and expectations quite clearly, although the students perceived this differently. In multiple study programs, the faculty acknowledged that they have difficulties to set clear demands and expectations towards students because of the heterogeneity of classes with respect to start competences, motivation and learning styles.

It is maybe therefore that the results of the interviews are blurred and hard to interpret. Of the three programs with a relatively low average amount of study time, we found two programs where students answered that they did not conceive the expectations and demands as high nor clear. But in one program students and faculty were very much aware of a clear communication about demands and expectations. The students perceived their way of studying to be very much focused and to the point. This can be interpreted as a high quality way of studying, resulting in a relatively low amount of hours of study time (although the average in this case was still 33 hours per week, which is just under the national average of 35 hours per week).

Of the three programs with a relatively high amount of hours of study time we found again two programs where students were not satisfied with their awareness of the expectations and demands towards them. At only one program, both faculty and students thought this was an important and clear topic in the communication of the study program. This supports the interpretation that unclear expectations and demands *can* lead to a high amount of study time, especially in the case of motivated students. However, students in that case do not study focused nor effectively, which is perceived as a low quality way of learning. Unfortunately, we do not know from the interviews whether this was the case for these two programs.

## Discussion and Conclusion

Several studies have been investigating the relationship between study time and learning strategies (Wijnen et al 2016). For example, it was found that students who apply self-regulated learning strategies spend less hours studying, since their study time investment is more effective (Van den Hurk 2006). Also, a positive relationship between self-study time and surface learning was found (Wijnen et al 2016). This was nevertheless regarded as an undesirable, and hence ineffective, learning strategy. Earlier research also showed that learning strategies and learning environments can have different outcomes in different academic disciplines (Wijnen et al 2016, Abrandt Dahlgren & Dahlgren 2002). In this paper, we studied the influence of teachers' expectations and demands on students' study time and engagement, controlled for the different types of study.

We used quantitative data of a subsample of the Norwegian national student survey Studiebarometeret. More than 2000 (mostly) second year bachelor and master students answered on a survey about their study time investment, engagement in different learning activities, about how they

perceive their teachers' expectations, demands and aspiration level towards them and about how clear these expectations and demands are for them. Results showed that teachers' expectations and demands influenced students' spending on organized learning activities, but that teachers' aspiration level influenced students' spending on self-study time. Analyses also showed modest evidence for the fact that both clear and unclear expectations and demands lead to a higher amount of self-study. With due caution we believe that the results of the focus group interviews with students and faculty of six bachelor programs in three different types of study tell us the same story. More research is however necessary to vouch this idea.

In the first place, it should be investigated whether students who perceive the expectations and demands towards them as unclear and who nevertheless study relatively many hours, indeed conduct less effective and low quality learning strategies. Further research should also focus on the relation between students' motivation and their perception of expectations, demands and aspirations. To what extent is the effect of expectations and demands on students' study time moderated by students' motivation (or: to what extent is the effect of students' motivation on their study time moderated by teachers' expectations and demands)? In the third place, we did not focus on the possible different outcomes for the different fields of study. It is however conceivable that the influence of expectations, demands and aspirations works differently for different types of study.

## References

- Abrandt Dahlgren, M., Dahlgren, L. (2002). Portraits of PBL: Students' experiences of the characteristics of problem-based learning in physiotherapy, computer engineering and psychology. *Instructional science*, 30(2), pp. 111-127.
- Auwarter, A.E., Araguete, M.S. (2008). Effects of student gender and socioeconomic status on teacher perceptions. *The Journal of Educational Research*, 101(4), pp. 243-246.
- Bonesrønning, H., Opstad, L. (2012). How much is students' college performance affected by quantity of study? *The International Review of Economics Education*, 11(2), pp. 46-63.
- Brophy, J.E. (1982). *Research on self-fulfilling prophecy and teacher expectations*. Institute for Research on Teaching, College of Education, Michigan State University, Reportnr IRT-RS-119.
- Diamond, J.B., Randolph, A., Spillane, J.P. (2004). Teachers' expectations and sense of responsibility for student learning: the importance of race, class and organizational habitus. *Anthropology & Education Quarterly*, 35(1), pp. 75-98.

Ericsson, K.A., Krampe, R.Th., Tesch-Romer, C. (1993). The Role of Deliberate Practice in the Acquisition of Expert Performance. *Psychological Review*, 100(3), pp. 363-406.

Jussim, L. (1986). Self-fulfilling prophecies: a theoretical and integrative review. *Psychological Review*, 93(4), pp.429-445.

Kuh, G.D. (2001). Assessing what really matters to student learning: inside the National Survey of student engagement. *Change*, 33(3), 10-17, 66.

Kuh, G.D., Cruce, T.M., Shoup, R., Kinzie, J. (2008). Unmasking the effects of student engagement on first-year college grades and persistence. *The Journal of Higher Education*, 79(5), pp 540-563.

Nonis, S.A., Hudson, G.I. (2010). Performance of college students: impact of study time and habits. *Journal of education for business*, 85, pp. 229-238.

Pascarella, E., Edison, M., Nora, A., Hagedorn, L., Braxton, J. (1994). Effects of teacher organization/preparation and teacher skill/clarity on general cognitive skills in college. *National center on postsecondary teaching, learning and assessment, Illinois University, Chicago*.

Plant, E.A., Ericsson, K.A., Hill, L., Asberg, K. (2005). Why study time does not predict point average across college students: Implications of deliberate practice for academic performance. *Contemporary Educational Psychology* 30, pp. 96-116.

Rubie-Davies, C., Hattie, J. & Hamilton, R. (2006). Expecting the best for students: teacher expectations and academic outcomes. *The British Journal of Educational Psychology*, 76, pp. 429-444.

Trigwell, K., Prosser, M., Waterhouse, F. (1999). Relations between teachers' approaches to teaching and students' approaches to learning. *Higher Education*, 37(1) pp.57-70.

Van den Hurk, M. (2006). The relation between self-regulated strategies and individual study time, prepared participation and achievement in a problem-based curriculum. *Active learning in higher education*, 7(2), pp. 155-169.

Wijnen, M., Loyens, S.M.M., Smeets, G., Kroeze, M., van der Molen, H. (2016). Comparing problem-based learning students to students in a lecture-based curriculum: learning strategies and the relation with self-studytime. *European Journal of Psychology of Education*, online first. DOI: 10.1007/s10212-016-0269-7.

Tables:

Table 1. Descriptives

	mean	std	%	min	max	N
Age	25.1	5.55		20	63	1442
Women			65			1443
Bachelor			50			739
Master			16			233
Professional study			34			501
2.year student			85			1255
5.year student			15			215
Field of Study:						
Art			6			87
Natural sciences			27			403
Education			10			150
Humanities			19			277
Law			7			99
Medicine			8			119
Social sciences			21			306
Other			2			32
Parents' education	2.9	0.80		1	4	1442
Paid labor (> 3 hours per week)	7.6	8.42	62	0	50	1336
Entry level (character 2.school exam)	45.5	6.99		23	60	1031
Motivation	3.9	0.76		1	5	1473
Study time organized activities	17.5	11.23		0	80	1399



Study time self-study	20.5	13.18		0	80	1410
Total study time	38.0	14.65		0	130	1412
Learning activities	3.7	0.65		1	5	1469
Demands_expectations	3.5	0.77		1	5	1471
Clarity of demands	3.3	1.11		1	5	1381
Aspiration level	3.3	0.80		1	5	1431

Table 2. Multilevel regression analyses dependent variables hours total studytime, hours organized learning activities, hours self-study and average number of learning activities (standardized): zero-models

	total study time		org learning act		self-study		# learning activities	
	B	sd	B	sd	B	sd	B	sd
intercept	-0.017	0.063	0.146	0.083	-0.102	0.056	0.087	0.046
institutional level (N=51)	<b>0.086</b>	0.034	<b>0.198</b>	0.064	<i>0.048</i>	0.025	0.029	0.017
program level (N=510)	<b>0.138</b>	0.033	<b>0.319</b>	0.041	<b>0.257</b>	0.040	<b>0.118</b>	0.029
student level (N=1473)	<b>0.844</b>	0.037	<b>0.566</b>	0.026	<b>0.713</b>	0.032	<b>0.814</b>	0.036
-2*loglikelihood		3970.021		3627.585		3846.784		4086.600

Table 3. Multilevel regression analyses dependent variables hours total study time, hours organized learning activities, hours self-study and average number of learning activities (standardized)

	total study time		org learning act		self-study		# learning activities	
	B	sd	B	sd	B	sd	B	sd
teacher demands	<b>0.102</b>	0.047	<i>0.084</i>	0.043	0.035	0.045	<b>0.434</b>	0.040
teacher aspiration level	<b>0.170</b>	0.041	0.053	0.037	<b>0.138</b>	0.039	-0.058	0.034
men (ref)	-		-		-		-	
women	-0.097	0.070	-0.074	0.063	-0.038	0.067	-0.050	0.059
age	-0.003	0.007	-0.006	0.006	0.002	0.006	0.007	0.006
parents' education	-0.040	0.040	-0.058	0.036	0.005	0.038	0.047	0.034
bachelor (ref)	-		-		-		-	

master	<b>0.296</b>	0.105	<b>-0.327</b>	0.100	<b>0.625</b>	0.101	0.147	0.091
professional studies	-0.077	0.162	-0.150	0.155	0.049	0.156	0.080	0.140
2.year	<b>-0.281</b>	0.097	0.106	0.087	<b>-0.427</b>	0.092	-0.103	0.082
5.year (ref)	-		-		-		-	
entry level	-0.002	0.006	-0.001	0.005	-0.004	0.006	-0.005	0.005
motivation	<b>0.256</b>	0.041	0.033	0.037	<b>0.257</b>	0.039	<b>0.580</b>	0.035
paid labor (dummy)	0.015	0.064	0.035	0.058	-0.022	0.061	0.067	0.054
type of study	∞		∞		∞		∞	
intercept	<b>-1.518</b>	0.432	-0.761	0.395	<b>-0.952</b>	0.416	<b>-3.534</b>	0.371
institutional level (N=51)	0.001	0.005	0.000	0.000	0.006	0.007	0.003	0.005
program level (N=510)	0.000	0.000	<b>0.044</b>	0.021	0.000	0.000	0.013	0.015
student level (N=1473)	<b>0.742</b>	0.036	<b>0.567</b>	0.032	<b>0.675</b>	0.033	<b>0.539</b>	0.029
-2*loglikelihood		2207.984		2009.287		2128.350		2021.789

∞ Results not reported because of space, results available on request.

Table 4. Average hours study time per category clarity of demands and expectations

	total study time	org learning act	self-study	# learning activities	N
Very little clear demands	38.8	16.3	22.7	3.5	89
Little clear demands	36.2	17.3	19.0	3.5	204
Somewhat clear demands	37.4	17.8	19.9	3.6	422
Clear demands	37.3	17.1	20.3	3.8	419
Very clear demands	41.5	19.0	22.8	4.0	192

