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TO BE A STUDENT WITHIN THE BOLOGNA PROCESS

New insights in process and studies outcomes

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Pascarella, E. & Terenzini, P. (2005). *How College Affects Students: A Third Decade of Research*. Hoboken, New Jersey: Wiley.

Pike, G. R. & Kuh, G.D. (2005). First- And Second-Generation College Students: A Comparison of Their Engagement and Intellectual Development. *Journal of Higher Education, 76,* 276-300.

Riehl, R. J. (1994). The Academic Preparation, Aspirations, and First-Year Performance of First-Generation Students. *College and University, 70,* 14-19.

Terenzini, P. T., Rendon, L. I., Upcraft, M. L., Millar, S. B., Allisson, K. W., Gregg, P. L. & Jalomo, R. (1994). The Transition to College: Diverse Students, Diverse Stories. *Research in Higher Education, 35,* 57-73.

Terenzini, P. T., Springer, L., Yaeger, P. M., Pascarella, E. T. & Nora, A. (1996). First-Generation College Students: Characteristics, Experiences, and Cognitive Development. *Research in Higher Education, 37,* 1-22.

Thayer, P. (2000). Retaining first generation and low income students. *Opportunity Outlook,* 2-8. (ERIC No. ED446633)

Tym, C., McMillion, R., Barone, S. & Webster, J. (2004). *First generation college students: A literature review.* Austin, TX: Research and Analytical Services.

Vezeau, C. & Bouffard, T. (2007). *Facteurs individuels et sociaux de l'adaptation réussie à la transition secondaire – collégial.* Rapport de recherche PAREA, 2007 http://www.cdc.qc.ca/parea/786683_vezeau_transition_lanaudiere_joliette_PAREA_2007.pdf

Warburton, E. C., Bugarin, R. & Nunez, A.-M. (2001). *Bridging the Gap: Academic Preparation and Postsecondary Success of First-Generation Students. Statistical Analysis Report. Postsecondary Education Descriptive Analysis Reports* (Research No. NCES-2001-153)

York-Anderson, D. C. & Bowman, S. L. (1991). Assessing the college knowledge of first-generation and second-generation college students. *Journal of College Student Development, 32,* 116-122.

INDIVIDUAL AND INSTITUTIONAL CONDITIONS OF STUDY-OUTCOME

Werner Georg & Tino Bargel

STUDY-YIELD AS A NEW RESEARCH FOCUS IN HIGHER EDUCATION

The research about the 'drop-out' of universities, *i.e.* leaving of the institution before completing a first course of study, has some tradition in the social sciences. Since the 1970s models have been developed showing the dimensions and factors involved (Tinto 1975), extensive data and time-series have been gathered (Heublein *et al.* 2008), and complex analysis with multilevel methods have been conducted (Georg 2009). These efforts have led to some useful insights about the decision making process of whether to drop out or the students' tendency to give up their studies. Additionally, it reveals the importance of social and cultural integration or the relevance of individual and institutional factors.

The question about the 'study-success', and its conditions was picked up rather late. Astonishingly, it was dealt rather detached from the inquiries about study drop-out (s. Merker 2009). It seemed as if there has been no research and models about the drop-out at universities, which can be seen as the reverse of study success. Study success is specified and empirical investigated in a rather plain manner. It is composed by three components: the certificate, the result and the duration of studying. The formula is simple: The study success is significantly higher, since the study was concluded swiftly and with better marks in the exam (Krempkow 2008).

The concept of 'study-yield' challenges the broader and very diverse field of investigation of study outcome. It focuses more on the cultural dimension of universities, because the interesting entities are educational aims targeting professionalism or employability and citizenship or general education. Furthermore, it allows using the theoretical proposals of Bourdieu, *i.e.,* the accumulation

of 'cultural capital', its interrelation with economic or social capital and the incorporation into the self-image about competencies and qualifications as a possible distinction against others (Bourdieu 1983).

Without doubt, the interest in the learning outcomes of studying as criteria of study quality has grown immensely during the last years. It is interpreted as a change from the input-factors, such as study conditions or teaching styles, to the output-factors, such as subject knowledge, problem solving, practical abilities, critical thinking, teamwork-capabilities or sense of social responsibility. In the consequence, significantly more attention is given to the educational aims of studying, the acquirement of competencies and the relevance for teaching as the main topic of orientation and evaluation (Schaeper/Wildt 2010).

As a definition of competencies, the wording of Blij *et al.* is often used, also with the connotation that it is a matter of competence-profiles: 'ability, to act in a given context adequately and responsible, and to integrate complex knowledge, capacities and attitudes' (Blij *et al.* 2002). These competencies can lead to long lists of broader abilities as team-capacities or of special aspects as rhetorical fitness. In general, three domains are discerned: subject competencies (as factual knowledge or methodological thinking), personal abilities (as engagement, autonomy and curiosity) and social capacities (as communication, teamwork, internationality or responsibility).

Not clear seems the demarcation of competencies from other concepts as 'soft-skills' or 'key qualifications', which are also widely used. It may be helpful to see the 'competencies' as a mere educational outcome (as a result of university socialization), and the 'qualifications' as the demand of the labor-market and industry (professional employability). Common is to all these concepts that they imply some sort of action and that they go beyond mere information or knowledge to further, more complex activities as mastery and applying, attitude and evaluation, appropriateness and capacity, professionalism and responsibility (Schaeper/Wildt 2010, 67).

The question about the acquisition of such competencies or qualifications during university study and in the different field of studies became more urgent during the discussions of the Bologna-process and the outcome of the new Bachelor-studies as the first degree. However, there remains a lack of profound empirical research about the conditions to gain higher benefits of studying and the possible contribution of the students to enhance the cultural profit. In the last years, different studies about the graduates (Schomburg/Teichler 2006; Briedis 2007; Heijke/Meng 2010) and about the students give more attention to this topic and present some interesting results (Bargel *et al.* 2009, Braun *et al.* 2008, Schaeper 2009).

As 'competencies' or 'qualifications' are a complex construct, it is necessary to look not only at the different elements but to analyze also the possible dimensions and interrelations beside the mere distributions or descriptive profiles. It needs a complex methodology to discern the effect of different conditions on the outcome and the competence-profile, be it the subject knowledge and practical benefits or general skills and social competencies. A crucial split-up is the one between institutional and individual elements, which might influence the outcome: which conditions of the field of study or which personal prerequisites of the students are more important for a better study-yield, and which mix or composition of factors can be observed. The answer is not only of scientific interest, because it gives additionally some hints about the consequences for the development of subjects, courses and teaching as well as about the definition of the role of students and the expected activities.

DATA AND MEASUREMENTS OF THE GERMAN STUDENT SURVEY

The following analysis and results are based on the Student Survey in Germany (Konstanzer Studierendensurvey), which was first conducted in winter semester 1982/83. It collected data representative for all German universities and institutes of applied technology. Since then eleven further surveys have been made at intervals of two to three years, so that the last survey was conducted in winter semester 2009/10. Thereby the aim was to collect a representative sample of the experiences of university students and students' orientations toward study, profession and politics for the whole of Germany, designed as part of an ongoing observation of society.

Because of the lack of a data set on students, a simple random sample of students was not possible – and this alone can make a sample statistically representative. To be sure, a representative selection in this sense is not always suitable and useful for research interests. The selection procedure for the student survey of the AG University Research was, because of the fundamental importance of long-term observation, debated by a scientific advisory committee, discussed with experts from the Center for Surveys, Methods and Analyses (Zentrum für Umfragen, Methoden und Analysen – ZUMA) in Mannheim and coordinated with other institutions for university research, as e.g. HIS.

As with other student surveys, a two-step selection had to be made: First, there was a structured selection of institutions on higher education (universities and institutes of applied technology, and formerly comprehensive universities)[1]

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1. Until 2003, the German university system consisted of universities, institutes of applied technology and comprehensive universities, which integrated both types; in 2003, the latter were converted into universities.

according to the German federal states, traditional and respectively newly founded institutions, as well as subject offerings (e.g., at institutes for applied technology). The study did not collect data from a large number of institutions of higher education, but rather for each institution of higher education an adequate number of students was to be represented for differentiated, comparative analyses according to subject affiliation, gender, level of achievement or other factors. The group to be contacted was selected in each case by random sampling from the German students of these higher educational institutions. They received, in the same form and with the same procedure, a cover letter with the rather long questionnaire (*cf.* on the concept Peisert/Bargel/Framhein 1984, Multrus/Ramm/Bargel 2011). The Federal Ministry for Education and Research (Bundesministerium für Bildung und Forschung) provided the main source of support, supplemented by funds from the state of Baden-Württemberg and the University of Konstanz.

The selection of institutions of higher education and students was guided more by the possibility of replicating analyses and comparisons of actual situations and relationships and less by the simple representative character of marginal distributions. The consequences of such aim setting and data collection procedures for the interpretation of the analytical results should definitely be taken into account.

The substantive focus of the survey is the cultural dimension of living and learning at universities. The questionnaire consists of twelve topical areas:

1.	Access to institutions of higher education
2.	Choice of training and expectations from higher education
3.	Teaching situation and quality of study program
4.	Learning and work behavior
5.	Life situation, financing and gainful employment
6.	Contacts and communication, counseling
7.	Difficulties, problems and stress of studying
8.	Computer and internet use, new media in teaching
9.	Wishes and demands for development of higher education institutions
10.	Choice of profession and conceptions of professions
11.	Societal and political demands
12.	Social background data and biographical situation

The concept of this study aims at a continuing observation of German students and their perception of the university system with the goal of recognizing undesirable developments at an early stage, and hence to be able to take suitable educational-policy countermeasures. The student population survey represents all German students at universities and institutes for applied technology, as well as the earlier comprehensive universities (in all 279 higher educational institutions). In the ninth survey, used here, a total of 26 higher education institutions (17 universities and 9 colleges of higher education or institutes for applied technology) were selected. While in the earlier surveys survey material were sent to about 20,000 students (with a response rate of ca. 40%), the number of participants was, after a slump in the response rate in winter semester 1997/98 (37%), increased to 28,000 at the last point in time of the data collection. Overall, 80,000 students have participated up to now, of whom 63,000 came from universities and 17,000 from institutes of applied technology.

The cumulated data set across all surveys can be accessed in the Central Archive for Empirical Social Science Research (Zentralarchiv für Empirische Sozialforschung). It is also available in several social scientific program systems: in SPSS, in SAS and in KOSTAS. It is widely applicable for a variety of secondary analyses, as well as for final and examination papers and theses (MA and Ph.D.). Examination of the data pool according to type of higher educational institution, gender and subject groups with an overview of the respective time sequence is made possible by the 'Data Almanac on the University Student Survey 1993-2010' (Simeaner/Ramm/Kolbert-Ramm 2010); it can also be viewed on the Internet, see: http//www.uni-konstanz.de/studierendesurvey).

RECORDING THE STUDY-YIELD: SUBJECT BENEFITS AND GENERAL COMPETENCIES

From the beginning of the German Student Survey, in the early 1980s, a central focus has been the study quality, the teaching styles and the outcome for the students. This study-yield was conceptualized as the result of the advancement at the university and in the visited subject field. The students estimated how much they cultivated different aspects of competencies as subject knowledge, autonomy, practical abilities or sense of social responsibility. The assessment of the students means a subjective measurement, however, it constituted an important social belief: the 'awareness of qualification' and the 'self-confidence of abilities', both are central for their social identity and self-presentation, for example at the labor-market when looking for a job.

Constructing the question and the items for measuring, the study-yield as estimated by the students' two theoretical sources, has been used: on the one hand in the discussion about socialization and qualification at the universities (Bargel/Framhein 1976), and on the other hand the clarification about meaning

and elements of the key-qualifications or soft-skills (Mertens 1974). The used items should be representative indicators of different competencies or elements of these. In the first enquiry, ten such competencies were presented to the students. In the meantime, the items have increased to sixteen competencies. This contribution reflects thirteen competencies, which have been used in all eleven inquiries until 2009/10.

The general academic competence is composed by the following seven theoretical dimensions, whereby every dimension is represented by at least two items:

1.	Subject special competence		
	(1) subject knowledge	(2) methodological knowledge	
2.	Scientific competence		
	(1) capability to do own research	(2) interdisciplinary knowledge	
3.	Intellectual competence		
	(1) logical thinking	(2) problem solving	
4.	Working competence		
	(1) working techniques	(2) planning and organization	
5.	Personal competence		
	(1) autonomy	(2) general education	(3) critical faculty
6.	Social competence		
	(1) team-work	(2) rhetoric ability	(3) social responsibility
7.	Practical competence		
	(1) practical abilities	(2) professional preparation/ employability	

The empirical check-up of the sixteen items about competencies, as used in the student survey, shows by factor-analyses that all elements have a positive correlation. Some correlations are high, such as between intellectual, logical thinking and problem solving or between working-techniques and planning ability (both +0.63). Capability for research and knowledge of scientific methods (+0.61) or practical ability and professional preparation (+0.52) also show a rather narrow correlation. Other correlations are not as high, but all these positive intercorrelations mean that we can suppose a general enhancement of all competencies more or less, if there is an effect of studying.

If we want a more differentiated spectrum of dimensions, we can use five factors (56.3% of variability together, eigenvalue 1.0). First the ability of planning in conjunction with working techniques and autonomy (13.7%); second the practical ability and employability (11.0%); third the educational and soft skills as general education, critical thinking and responsibility (14.0); fourth the scientific competencies as ability to research and methodological knowledge (9.0%); and fifth the cognitive and subject specialist competencies (8.6%).

It is possible to reduce these five dimensions to three more general domains as (1) competencies for intellectual problem-solving, (2) competencies for profession and science (incorporated are the subjective benefits), and (3) competencies of education, critics and responsibility. This means that we may interpret the study outcome, following the evaluation of the students, more or less as a gain of intellectuality, professionalism and academic culture.

Because the professional preparations such as the capability to conduct scientific research, are complex constructs, it is worthwhile to have a look at with what other elements of the qualification-profile they are connected. Scientific research correlates firstly with the knowledge of scientific methods (0.61) and secondly with the capability of problem analyzing and solving (0.41); some other elements are also connected, however, not that intensively: critical faculty (0.38), working techniques (0.35), intellectual abilities as logical thinking (0.33), general knowledge (0.32) and to some extent also subject knowledge (0.30).

In the case of the professional preparation (employability), there is only one output that seems important and shows a higher correlation: the practical abilities (0.52). All other correlations are below 0.30 with only two exceptions: the general knowledge (0.32) and social responsibility (0.30). That means: the different outcomes of university training are not significantly connected with the professional preparation; lower or more enhancement of the intellectual or academic qualities say nearly nothing about the enhancement of employability. Following the evaluation of the students, this enhancement depends almost solely from their experience of practice and the development of practical abilities, as they may be learned in internship or exercise.

STUDY-YIELD IN GENERAL AND BY FIELD OF SUBJECT

The evaluation of the students about the gain in the different competencies during study leads to a clear ranking if we follow the numbers of positive assessments. The students could confirm for each competency how much they have been enhanced by studying, the scale going from 'really nothing' to 'very much' in seven steps. Because the experiences of the students in their field of study differ a greatly, every competency shows a different dispersion.

Most of the students confirm, that they have learned quite a lot concerning the subject specific benefits: 55% say 'very much', and another 42% say 'rather much'; only a very small group of 4% belief not to have any profit in this central aspect of studying.

Next, two outcomes follow, which are characteristic for the academic and intellectual profile: the autonomy of the self in his/her thinking or acting, and the ability to analyze and solve problems. More than four fifth of the students claim that they have gained very or rather much autonomy (85%), problem-solving (83%) and intellectual abilities (79%).

Rather many students affirm good enhancement concerning their working techniques (74%, very and rather much together), their capacity for teamwork (73%), their critical faculties (70%), their ability to organize (69%), and then their knowledge of methods (68%). More than two thirds of the students confirm that they learned very or rather much in this fields of activities during their studies.

Table 1. Evaluation of study outcome by students at German universities (2009/10). Figures in %.

Study outcome	Very much	Rather much	Together
1. subject-specific benefits	55	41	96
2. autonomy	49	36	85
3. ability to analyze problems	35	47	82
4. intellectual abilities	33	46	79
5. work techniques	25	49	74
6. capacity for teamwork	31	42	73
7. critical faculties	29	41	70
8. ability to organize	26	43	69
9. knowledge of methods	23	45	68
10. interdisciplinary knowledge	14	49	63
11. practical abilities	20	41	61
12. general knowledge	17	38	55
13. sense of responsibility	20	34	54
14. rhetorical abilities	15	36	51
15. professional employability	10	38	48
16. ability to do research	14	33	47

Source: Student Survey in Germany, AG Hochschulforschung, Universität Konstanz, 11. Enquiry 2009/10

Not many students are convinced that they are cultivated in their general knowledge (55%) or their sense of responsibility (54%). Only half of them admit some or much development, but nearly the same proportion denies it. This level of enhancement in such high valued academic competencies and educational aims of the universities, as general education and responsibility, seems below the study outcome, which could be expected.

Astonishingly low evaluated are preparation to later profession as well as ability to conduct research; they are placed at the two last positions in the ranking of competencies. Only about one third of the students think that they learned very much in these two fields. At a fist glance, this is a poor result, because both qualifications are central to the educational aims of higher education. Professional preparation is basic for the later profession and the ability to conduct research provides more opportunities for research and development. However, we have to consider, that both aims are very broad and complex, incorporating rather different abilities and capacities.

Each of the different field of studies produces a special profile of study-outcome. The students of these fields of study demonstrate a quite different image of their abilities and capacities, which seems quite typical for their disciplines. The differences between the subjects are statistically significant at a high level (0.01) for all sixteen outcomes or competencies. That means every outcome shows rather great differences. This is true especially in the case of critical faculties, practical abilities and general education (all show a difference of 1.6 in the scale from 0 to 6), and even very high for rhetoric abilities (1.9) and capacity for teamwork (2.5). Only in two cases, the difference is not so great concerning the subject specific benefits and the autonomy (both 0.6).

Each faculty has their own merits and outcomes that are especially high. For the subject of culture and language these are autonomy, general education and rhetoric abilities with outstanding results compared to other subject fields. For the social sciences, these are the critical faculties and social sense of responsibility; for economics, it is the ability to organize and manage. For medicine these are the subject specific benefits and the professional preparation. The natural sciences have five especially high outcomes: intellectual abilities (logical thinking), knowledge of scientific methods, work techniques, practical abilities and the ability to do research. Engineering has also four outstanding outcomes: ability to analyze and solve problems, capacity for teamwork, work techniques, and general, interdisciplinary knowledge.

Table 2. Evaluation of study outcome by students at German universities by field of subject (2009/10). Figures in averages.

Study outcome	Language	Social	Law	Economy	Medicine	Science	Engineering
1. subject-specific benefits	4.4	4.4	4.5	4.5	5.0	4.8	4.8
2. autonomy	4.5	4.3	4.2	4.4	3.8	4.1	4.2
3. ability to analyze problems	3.7	3.7	4.2	3.9	3.3	4.2	4.4
4. intellectual abilities	3.7	3.7	3.9	4.0	2.8	4.2	4.1
5. work techniques	3.4	3.2	3.5	3.4	2.9	3.7	3.7
6. capacity for teamwork	3.5	3.7	1.4	3.1	2.7	3.8	3.9
7. critical faculties	3.9	4.0	3.6	3.3	2.4	3.4	3.3
8. ability to organize	3.4	3.4	3.0	3.6	2.7	3.3	3.5
9. knowledge of methods	3.4	3.6	2.6	3.1	3.0	3.8	3.5
10. interdisciplinary knowledge	3.0	2.9	2.0	2.9	2.7	2.9	3.1
11. practical abilities	2.8	2.6	2.0	2.2	3.4	3.6	2.9
12. general knowledge	3.5	3.1	3.0	2.8	1.9	2.3	2.6
13. sense of responsibility	3.1	3.6	2.1	2.1	3.2	2.2	2.2
14. rhetorical abilities	3.4	3.2	2.7	2.3	1.5	2.1	1.9
15. professional employability	2.1	2.2	1.7	1.9	3.2	2.2	2.5
16. ability to do research	2.8	2.8	2.0	1.9	2.4	3.1	2.6

Source: Student Survey in Germany, AG Hochschulforschung, Universität Konstanz, 11. enquiry 2009/10

Only law students estimate in no case an outcome as a top result compared to the other subject fields. The students of law see more often only small and poor results, such as capacity for teamwork, professional preparation, practical abilities, general knowledge, and also of social responsibility. Next are the students of medicine who rather often declare deficiencies compared to other fields of study such as in rhetorical abilities and general education, critical abilities and autonomy, intellectual abilities and working techniques. Based on the evaluations of their students, the two traditional professions at universities, law and medicine, have the lowest outcome. The outcomes were best evaluated by the students of natural science and engineering whereas languages, social sciences and economics have advantages as well as some disadvantages.

MODELS OF INDIVIDUAL AND INSTITUTIONAL FACTORS

An important difference consists between individual prerequisites and institutional conditions, which influence or determine the amount of study-yield. This differentiation of factors was already developed in analyzing the connectivity with leaving university before having completed a first study course, that means study drop-out (Georg 2009). This analysis leads to quite interesting results, therefore this contribution about study-yield joints the former attempt about study drop-out. In this way we might find answers to a further central question: Are for drop-out as for study-yield the same conditions accountable or will there be different combinations of factors; in other words: will we also find a different relevance of individual and institutional factors, with a greater impact on the individual prerequisites?

In the following analysis, different benefits of the course of studies are surveyed: firstly subject-specific outcomes, secondly social skills, and finally a scale that comprises thirteen different benefits (which has been used in all eleven inquiries of the German Student Survey). As the focus of this study refers to the individual level as well as to the aggregate level of the study fields, a multilevel analysis was conducted (Snijders&Bosker 1999).

The following twelve scales were constructed factor-analytically for further analysis, which might influence the study-outcome:

Eight individual factors of the students

1.	intrinsic motivation for choosing a program of study (sample item: 'special subject interest'): 3 items
2.	extrinsic motivation for the choice of subject area (sample item: 'income potential in later profession'): 3 items
3.	achievement motivation and ambition (sample item: 'I work intensively in order to get good examination results'): 5 items
4.	examination stress (sample item: 'before examinations I usually feel stress'): 2 items
5.	difficulties with achievement requirements (sample item: 'I find it hard to prepare efficiently for examinations'): 3 items
6.	communicative difficulties (sample item: 'I find it hard to relate to teachers'): 3 items

| 7. | stress due to the overall situation (sample item: 'I feel under pressure due to the anonymity of the university'): 3 items, |
| 8. | future-related stress (sample item: 'uncertain professional prospects'): 2 items |

Four institutional factors of the field of study

1.	transparency and practicality of the course of study (sample item: 'well-organized plan of studies'): 3 items
2.	performance demands and competition in the course of study (sample item: 'high performance norms'): 2 items
3.	counseling and support by teachers (sample item: 'can you obtain personal counseling from college teachers if this is necessary for the course of study?'): 6 items
4.	teaching quality (sample item: 'the learning aim of the course is clearly defined'): 7 items

In addition to these scales, the analyses include other social factors and conditions such as gender, the gymnasium grade average, father's educational attainment, certainty of being able to study at the university, consideration of a change of subject, financial situation, amount of time devoted per week to classes and private study, employment while the university is in session, and secondary school and intermediate examination grades. In this contribution, such indicators are not used for the institution, meaning the field of subject, the number of students (overcrowded), students-docents-ratio, drop-out-rate, success quota in exams, amount of study regulation, compulsory internship, participation in research projects or other offers in organization, and curricula or teaching.

MODEL 1: SUBJECT-SPECIFIC BENEFITS

In the first step, we investigate as the outcome only the subject-specific-benefits (Fachwissen) that means the amount of learned subject knowledge as estimated by the students. In the first step, we take only one item – in comparison to Schaeper/Wildt (2010), who added the knowledge of scientific methods to this dimension (but the factor analysis did not support such a combination).

Dividing the different factors, which might be accountable for the amount of gain concerning subject benefit, in those of the 'individual level' and those of the 'subject level' (institutional level) we obtain the following result, which shows that individual factors and motives are of more relevance than institutional

conditions. Subject-specific benefits are influenced negatively by an extrinsic motivation (-.018), a considered change of the subject (-.106) and general stress (-.035), whereas a certainty of being able to study (.080), a higher time-budget for instruction (.009), a motivation to succeed (.036) and financial stress (.039) have a positive impact on it.

Table 3. Predictors of subject-specific benefits on the individual and subject level (one-tailed p-value; variance of the unconditional model within: 1.447, between: .084).

Predictors	Estimate	Standard Error	P-Value
Individual Level			
Intrinsic motivation	.002	.011	.878
Extrinsic motivation	-.018	.009	.035
Gender	-.063	.057	.264
Grade of gymnasium	-.006	.006	.311
Certainty of being able to study	.080	.036	.026
Considered change of subject	-.106	.022	<.001
Time budget for instruction	.009	.004	.022
Time budget for private study	.003	.003	.362
Gainful employment during semester	-.051	.035	.146
Motivation to succeed	.036	.008	<.001
Grade on intermediate examination	.002	.005	.736
Examination stress	-.002	.008	.830
Performance difficulty	-.005	.021	.816
Communication difficulty	.021	.017	.217
Father's educational attainment	.022	.014	.126
General stress	-.035	.008	<.001
Future related stress	-.020	.013	.119
Financial stress	.039	.014	.006
Subject level			
Transparency	.079	.041	.089
Achievement norm	.047	.043	.268
Quality of counseling	-.070	.037	.059
Teaching quality	.079	.055	.153
Social Sciences	-.005	.098	.956

Predictor	Estimate	Standard Error	P-value
Law	-.050	.209	.810
Economics	-.266	.162	.100
Medicine	-.099	.182	.589
Natural sciences	.009	.111	.938
Engineering	-.051	.133	.703
Other subjects	-.051	.155	.743
Intercept	3.046	.699	<.001
Residual variance individual level	1.152	.054	<.001
Residual variance subject level	.008	.007	.246
Intra class correlation	.032		
N	1765		

With exception of the positive effect of financial stress, for which we are not able to offer an explanation, the picture is quite clear: a low identification with the subject (extrinsic motivation and a considered change of the subject) also leads to lower perceived subject-specific benefits. In contrast, a high commitment to the field of study (time budget for instruction and motivation to succeed) can be converted into better outcomes in subject-specific knowledge.

However, the major finding of this analysis is the missing influence of the structure of subjects. Only 3.2% of the variance (intra-class correlation) can be ascribed to the aggregate level of subjects and no single variable is significant on this level. Reversely it can be argued as a matter of fact that subject-specific benefits are connected with the student's commitment to his/her field of study, while there is nearly no possibility on the institutional level to influence the subject-specific outcomes.

This finding questions the growing influence of quality management on the level of subjects or universities and supports initiatives of counseling before students choose a field of study with which they are not able to identify. These measures could be supplemented by institutional programs that help to develop a commitment to the chosen field of study.

MODEL 2: SOCIAL SENSE OF RESPONSIBILITY

It would be possible to look for the shape of the model concerning different dimensions such as intellectual capacities, social skills or autonomy as study-outcome. For this contribution, we selected the social responsibility as an important 'general competence'. In fact, a social sense of responsibility does not reach a high position in the ranking by students about the possible study-outcomes: Only few students evaluated that they gained much social responsibility by studying – it has one of the lowest measures of enhancement. Obviously social skills are significantly stronger for each field of study than subject-specific benefits (model 1) or general outcomes (model 3), as the intra-class correlation of the actual model is.106, *i.e.* twice as high as in the other cases. On the individual level, women developed more social skills than men did, and gymnasium students with worse grades do engage more in the social field. Additionally, more investment in instruction, a stronger motivation to succeed and the origin from lower social strata have a positive impact on benefits according social skills.

Table 4. Predictors of a sense of social responsibility on the individual and subject level (one-tailed p-value; variance of unconditional model within: 7.25, between: 1.02).

Predictor	Estimate	Standard Error	P-Value
Individual Level			
Intrinsic motivation	.023	.016	.151
Extrinsic motivation	.020	.011	.071
Gender	.247	.084	.003
Grade of gymnasium	.017	.007	.019
Certainty of being able to study	-.003	.042	.937
Considered change of subject	-.133	.031	<.001
Time budget for instruction	.012	.005	.017
Time budget for private study	-.007	.005	.128
Gainful employment during semester	.039	.050	.438
Motivation to succeed	.025	.012	.031
Grade on intermediate examination	.001	.007	.917
Examination stress	.001	.012	.911
Performance difficulty	.034	.026	.193
Communication difficulty	-.094	.020	<.001

Predictor	Estimate	Standard Error	P-Value
Father's educational attainment	-.045	.021	.031
General stress	-.024	.011	.027
Future related stress	.035	.016	.026
Financial stress	-.009	.023	.687
Subject level			
Transparency	.010	.067	.884
Achievement norm	-.105	.077	.177
Quality of counseling	.050	.053	.348
Teaching quality	.056	.084	.503
Social Sciences	.635	.143	<.001
Law	-.417	.313	.183
Economics	-.581	.200	.004
Medicine	.160	.267	.548
Natural sciences	-.801	.157	<.001
Engineering	-.850	.198	<.001
Other subjects	-.392	.354	.269
Intercept	1.717	1.101	.119
Residual variance individual level	2.496	.072	<.001
Residual variance subject level	.008	.022	.719
Intra class correlation null model/model	.106		
N	1758		

On the negative side, a considered change of the subject and general stress reduce the development of social abilities during the course of studies. None of the four structural indicators on the subject level has a significant influence on social skills, while the fields of study display differences in this respect: students in social sciences have in comparison to students in cultural sciences, experienced more benefits related to social skills from their studies than do students of Engineering, Economics and Natural Sciences.

MODEL 3: GENERAL SCALE FOR BENEFITS OR STUDY-YIELD

This time a general scale with 13 different benefits of the course of studies was used as dependent variable; these are the items, which are used in all enquiries:

Subject-specific benefits
practical abilities
intellectual abilities
abilities according work techniques
general knowledge
autonomy
critical faculties
Social sense of responsibility
personal development in general
interdisciplinary knowledge
rhetorical abilities
capacity for teamwork
ability to organize
ability to analyze and solve problems

The scale has a reliability coefficient (Cronbach's alpha) of .87 and allows therefore a quite good measurement of the study-yield or of the general benefits.

Once again, indicators that on the individual level display commitment and integration according to the field of study (intrinsic motivation, motivation to succeed) increase the perceived over all benefits, while disintegration (considered change of study, communication difficulty, and general stress) diminishes it.

Table 5. Predictors of general benefits on the individual and subject level (Bayesian Estimator, one-tailed p-value; variance of unconditional model within: 150.41, between: 3.58).

Predictor	Estimate	Standard Error	P-Value
Individual Level			
Intrinsic motivation	.213	.103	.022
Extrinsic motivation	.051	.075	.239
Gender	-.288	.608	.918
Grade of gymnasium	.053	.051	.147
Certainty of being able to study	.476	.356	.091

Predictor	Estimate	Standard Error	P-Value
Considered change of subject	-.931	.222	<.001
Time budget for instruction	.054	.038	.071
Time budget for private study	-.024	.032	.325
Gainful employment during semester	.646	.417	.060
Motivation to succeed	.614	.077	<.001
Grade on intermediate examination	-.046	.051	.192
Examination stress	-.024	.091	.398
Performance difficulty	.062	.201	.381
Communication difficulty	-.781	.167	<.001
Father's educational attainment	-.187	.155	.115
General stress	-.421	.081	<.001
Future related stress	.168	.105	.052
Financial stress	.125	.158	.209
Subject level			
Transparency	.213	.448	.338
Achievement norm	-.048	.503	.456
Quality of counseling	.482	.415	.149
Teaching quality	1.201	.569	.107
Social Sciences	1.850	1.078	.030
Law	-.1.644	2.242	.243
Economics	-1.265	1.560	.221
Medicine	-7.796	2.034	<.001
Natural sciences	-2.508	1.092	.015
Engineering	-3.362	1.378	.007
Other subjects	-2.672	2.366	.155
Intercept	13.382	7.264	.028
Residual variance individual level	124.218	4.233	<.001
Residual variance subject level	.620	.964	<.001
Intra class correlation null model/model	.052		
N	1743		

However, in this model we do find some significant effects on the subject level. Firstly, the teaching quality of a department has a clear effect on the benefit scale: after controlling of all individual differences, one unit of the teaching-quality scale increases the benefit-scale by 1.20 units. Secondly, there are differences between the single subjects in relation to the outcome of the course of studies: compared to the cultural sciences (which is the reference group), in the social sciences the benefits are experienced as being greater (1.85 scale units), whereas in medicine (-7.8 units), engineering (-3.4 units) and in natural sciences (-2.5 units) they are perceived as smaller.

Discussion and Consequences

These results about the factors of study-yield underline that the positive outcomes of studies are dominantly influenced (around 95% of explained variance) of individual factors compared to subject-specific institutional factors (around 5% variance). The findings are nearly the same as in the case of study dropout (Georg 2009), we obtain the same dependencies for negative as well as for positive outcomes. These effects are consistent with the theoretical framework of Tinto (1975) and focus on the question of social and academic integration or disintegration into the university system and the specific subject culture.

The methodological and substantial consequences of our results are as follows:

Before the structure and indicators of quality management and institutional evaluation are developed, there should be an empirical analysis on the individual as well as on the institutional level in order to define what the possible scope of institution-specific means in order to diminish drop out and enforce positive outcomes of studies.

It should be defined clearly based on these analyses, for which parts of the specific outcomes the institution is responsible and with which measures they can be influenced on this level. Up to now, the result of our analyses suggests that it is above all an improvement of the teaching quality that is targeted at the reduction of drop-out as well as for the perception of a positive outcome of the course of studies.

Our findings are not in line with the dominant discourse in Germany's university policy. The idea of students as 'customers' who decide between different competing 'university-suppliers' focuses above all on the quality of the universities. Quality is to be developed mutually by 'quality management' in order to be successful in the competition with other universities. Our results suggest that the student is much stronger involved into his own success and failure and that the picture as 'customer' drawn above displays him/her to much in a passive social role.

The lower impact of the institutional conditions in the field of subject has also practical consequences concerning the regulations, the demands

or the mentoring. Not all these factors lead directly to a higher study-yield and to a better study-quality. It is rather necessary to advance the interest and the motivation of the students and to enhance their study strategies and learning styles. This result proves again, that studying is successful with much gain, if it is practiced autonomously and active. It means also a warning against too much standardization or teaching specifications, because they slow down motivation, self-reliance and originality. This seems to be an important conclusion for the quality management at our universities and the further designing of the academic studies.

REFERENCES

Bargel, T., Framhein, G. (1976). Zur Diskussion von Bildungszielen und zur Leistungsmessung im Hochschulbereich. In W. Tapf (ed.), *Gesellschaftspolitische Zielsysteme – Soziale Indikatoren IV* (pp. 126-161). Frankfurt/New York.

Bargel, T., Multrus, F., Ramm, M. & Bargel, H. (2009). *Bachelor-Studierende – Erfahrungen in Studium und Lehre*. Ed. Bundesministerium für Bildung und Forschung. Berlin: Bonn.

Blij, M. van der, Boom, J., Liehout, H. van, Schafer, H. & Schrijen, H. (2002). *Competentie-profielen: over schillen en knoppen*. Utrecht.

Bourdieu, P. (1983). Ökonomisches Kapital, kulturelles Kapital, soziales Kapital. In R. Kreckel (ed.), *Soziale Ungleichheiten. Sonderheft Soziale Welt* (pp. 163-198). Göttingen.

Braun, E., Gusy, B., Leidner, B., Hannover, B. (2008). Kompetenzorientierte Lehrevaluation – Das Berliner Evaluationsinstrument für selbsteingeschätzte studentische Kompetenzen (BEva-Komp). *Diagnostica, 54* (1), 30-42.

Briedis, K. (2007). *Übergänge und Erfahrungen nach dem Hochschulabschluss. Ergebnise der HIS-Absolventenbefragung des Jahrgangs 2005*. Hannover: HIS: Forum Hochschule 13.

Heijke, H. & Meng. C. (2010). Discipline-specific an Academic Competencies of the Higher Educated: Their Value in the Labour Market and their Acquisition in Education. In Hochschul-Informations-System HIS (ed.), *Perspektive Studienqualität* (pp. 263-277). Bielefeld.

Georg, W. (2008). Individuelle und institutionelle Faktoren der Bereitschaft zum Studienabbruch. *ZSE, 28*. Jg., Heft 2, 191-206.i

Georg, W. (2009). Individual and institutional factors in the tendency to drop-out of higher education: a multilevel analysis using data from the Konstanz Student Survey. *Studies in Higher Education, 34* (6), 647-661.

Heublein, U., Schmelzer, R. & Sommer, D. (2008). *Die Entwicklung der Studienabbruchquote an deutschen Hochschulen*. HIS: Projektbericht. http://.his.de/publikation/bericht (accessed 30 Oct. 2008).

Krempkow, R. (2008). Studienerfolg, Studienqualität und Studierfähigkeit. *Die hochschule, Heft, 1*, 91-107.

Mertens, D. (1974). Schlüsselqualifikationen – Überlegungen zu ihrer Identifizierung und Vermittlung im Erst- und Weiterbildungssystem. In G. Faltin & O. Herz (eds.), *Berufsforschung und Hochschuldidaktik, 32* (pp. 204-230). Hamburg.

Merker, L. (2009). *Engagement, Studienerfolg und Berufserfolg*. Dissertation. Universität Bayreuth.

Multrus, F., Ramm, M. & Bargel, T. (2011). *Studiensituation und studentische Orientierungen. 11. Studierendensurvey an Universitäten und Fachhochschulen (Kurzbericht)*. Ed. Bundesministerium für Bildung und Wissenschaft. Berlin: Bonn.

Peisert, H., Framhein, G. & Bargel, T. (1984): Studiensituation und studentische Orientierungen. *Schriftenreihe Studien zur Bildung und Wissenschaft, 15*. Bad Honnef.

Schaeper, H. (2009). Development of Competencies and Teaching-Learning Arrangements in Higher Education: Findings from Germany. *Studies in Higher Education, 34*.

Schaeper, H., Wildt, J. (2010). Kompetenzziele des Studiums, Kompetenzerwerb von Studierenden, Kompetenzorientierung der Lehre. In Hochschul-Informations-System HIS (ed.), *Perspektive Studienqualität*, 64-83. Bielefeld.

Schomburg, H., &Teichler, U. (2006). *Higher Education and Graduate Employment in Europe*. Results from Graduate Surveys from Twelve Countries. Dordrecht.

Snijders, T & Bosker, R (1999). *Multilevel analysis. An introduction to basic and advanced multilevel modelling*. London: Sage

Simeaner, H., Ramm, M., Kolbert-Ramm (2010). *Datenalmanach Studierendensurvey 1993-2010. Studiensituation und Studierende an Universitäten und Fachhochschulen*. Arbeitsgruppe Hochschulforschung, Universität Konstanz.

Tinto, V. (1975). Dropout from higher education: A theoretical synthesis of recent research. *Review of Educational Research 45* (1), 89-125.

Universität Halle (2000). *Studienertrag oder Was hat es gebracht?*

Retrieved from http://www.erzwiss.uni-halle.de/gliederung/...(EW 2000 MLU Halle-Wittenberg).