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*Natalie Fischer & Eckhard Klieme*

*German Institute of Educational Research*

## **Quality and effectiveness of German all-day schools: Results of the “Study on the Development of All-day Schools”**

In Germany, the number of schools offering extracurricular activities and extended daily hours (referred to as “all-day schools”) is increasing. Between 2003 and 2009, converting and equipping schools to the all-day format has been financially supported by the investment program “Zukunft Bildung und Betreuung” (IZBB) – [Future of Education and Care]. The “Study on the Development of All-day Schools” (Studie zur Entwicklung von Ganztagschulen, StEG) was designed to evaluate the effects of the all-day school program. In this paper, StEG is described and an overview of its important results (II., III.) is provided. The political and societal motives leading to the introduction of all-day schools in Germany are considered, as well as scientific evidence regarding the effects of all-day schools (I.). It is assumed that the introduction of all-day schools promotes development in at least three areas: family-life, school effectiveness and student learning. In this paper, data to support these assumptions is presented.

### ***I. Introducing “all-day schools” in Germany***

#### **I.1 Political motives and definition**

In Germany, “schooling” is traditionally associated with an academic curriculum taught between about eight o’clock in the morning and – at least in primary school – noon or one in the afternoon. Hobbies, games and other extracurricular activities are not generally offered and lunch is not provided.

The introduction of “all-day schools” has been a major topic in recent educational debates. Introducing “all-day schooling” is based on a number of rationales and changes in society. According to the Twelfth Report on Children and Youth (BMFSFJ, 2005), arguments in favor of expanding the provision of all-day schooling in Germany fall into four main categories:

- *education policy arguments* regarding the development of skills and abilities of all students;
- *youth policy arguments* concerning the psychosocial development of children and youth;
- *family policy arguments* including the issue of work-life balance as well as social support for families; and
- *employment policy arguments* concentrating on providing adequate child care to allow educated woman who are also mothers to offer their skills to the workforce.

In pragmatic and political terms, one of the main arguments for all-day school programs is based on demographic developments and changes in the structure of the labor market. Given that all-day schools should make it easier for parents to balance work and family life, proponents argue that all-day schools may improve the efficiency of the labor marketplace by allowing qualified mothers to offer it their skills (BMFSFJ, 2005). With respect to families,

having both parents gainfully employed causes changes in family structures and, thus, in the nature of childhood (e.g., Baumert, Cortina & Leschinsky, 2003 or Holtappels, 2005). As support networks comprised of relatives and neighbors erode or break down altogether (Holtappels, 2005) there is a growing demand for institutional child care – in all-day schools, for example. This demand is particularly acute among single parents and relates to the employment policy arguments in favor of all-day schools (Klieme, Kühnbach, Radisch & Stecher, 2005).

Consequently, youth policy arguments assume that the changing environments of children and adolescents are leading to decreased social experiences and contacts. It is argued that young people’s psychosocial development and their integration in the adult world would be enhanced by attendance at all-day-schools. Thus, another important argument in its favor is the hypothesis that all-day schooling responds to the “need for social integration” (Holtappels, 2005).

In the past decade the focus of academic and political debate concerning all-day schools has shifted to the educational benefits of all-day schools, mainly because of Germany’s poor performance in the Programme for International Student Assessment (PISA) studies (Tillmann, 2004). It is anticipated that the extracurricular activities offered at all-day schools will boost academic achievement. In particular, benefits are expected to accrue for those students who are in need of special support, for example, children and adolescents from immigrant families (Holtappels, 2005). As all-day schools offer support for weaker students (e.g., help with homework; remedial lessons in specific subjects), it is argued that all-day education will provide “at-risk” groups with necessary support. Thus the link between academic achievement and social background could be weakened.

All in all, these assumptions imply that all-day learning shifts the balance between schools on one hand, and the family and peer groups on the other, thus weakening distinctions between the education system and other societal systems (Luhmann, 2002). Learning in all-day schools is not limited to academic curricula but includes social, motivational and cross-curricular competencies. Consequently, organizational and institutional changes are required and expected with the introduction of all-day schools.

Currently, federal states and governments are investing in two areas: increasing the availability of all-day schooling for children and youths; and improving pedagogical work and teaching quality at those all-day schools. Due to increased funding and the changed political climate, the number of all-day schools in Germany has risen greatly (see figure 1). In 2009, 47% of German schools were considered to be all-day schools.

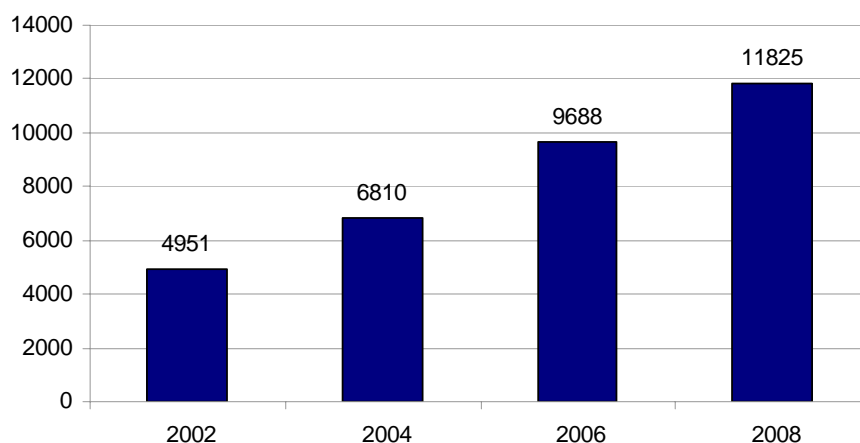


Fig. 1: Development of all-day schooling in Germany: number of schools characterized as all-day schools from 2002 to 2008. Source of data: Autorengruppe Bildungsberichterstattung, Bildungsbericht 2010

The criteria for classification as an all-day school are defined by the Standing Conference of the Ministers of Education and Cultural Affairs of the Laender in the Federal Republic of Germany. All-day schools are “*primary and secondary schools which, in addition to timetabled lessons in the morning, offer an all-day programme comprising at least seven hours per day on at least three days per week. Activities offered in the afternoon are to be organised under the supervision and responsibility of the head staff and to be carried out in cooperation with the head staff. The activities are to have a conceptual relationship with the lessons in the morning. All-day schools, which are far less common in Germany than the traditional “Halbtagschule”, provide a midday meal on the days on which they offer all-day supervision*” (Secretariat of the Standing Conference of the Ministers of Education and Cultural Affairs of the Laender in the Federal Republic of Germany, 2008, p. 356).

In addition, different forms of all-day schools are distinguished based on student level of obligation. In schools with “open-all-day” programs, participation is voluntary and students choose to participate individually. In “compulsory” all-day programs students are required to stay in school for extended hours at least three days a week<sup>1</sup> (Secretariat of the Standing Conference of the Ministers of Education and Cultural Affairs of the Laender in the Federal Republic of Germany, 2005). Consequently, even though more than 45% of schools offered all-day programs in 2009, only about 25% of students participated.

## **I.2 Scientific evidence**

As political reasons for funding and supporting all-day schools rely heavily on expected academic and educational improvements, it is necessary to summarize briefly the scientific basis for these expectations.

Before StEG, research on the educational effects of all-day schools in Germany was limited with respect to sample size, representativeness, and methodology (see Ludwig, 1993 or Radisch, 2009 for an overview). All in all, results of the very few studies comparing all-day schools to half-day schools (e.g., Witting, 1997; Baldischwiler, 1985; Balluseck, 1996; Köller & Trautwein, 2003) were inconsistent. In several case studies researchers failed to find any significant differences in the academic performance of students attending all-day schools and their counterparts at half-day schools; in some cases the performance of students at all-day schools was in fact slightly poorer (e.g., Witting, 1997; Eigler, et al., 1977; Fendel, 1967). Nevertheless, when controlling for the social backgrounds of the respective student populations, all-day schools appear to show evidence of better outcomes than would otherwise be expected. However, all-day schools seem to compare rather more favorably with half-day schools where their effects on aspects of social integration and on school climate are concerned (e.g., Witting, 1997; Joppich, 1979; Köller & Trautwein, 2003).

Recently, German researchers started using data from large scale studies such as PISA and PIRLS (Progress in International Reading Literacy Study) to analyze the educational effects of all-day schools. Unfortunately, because of the cross-sectional design of those studies the educational and selection effects cannot be differentiated (Hertel et al., 2008; Radisch, Klieme & Bos, 2006). Because of this issue, international results have to be considered as well.

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<sup>1</sup> Note that there are differences between the German States (Laender)

Although German all-day schools differ considerably with respect to organisation and conceptual base, extracurricular activities are provided at every German all-day school. Accordingly, results of United States studies and reviews and meta-analyses about the effects of school-based and out-of-school extracurricular activity participation on several cognitive and non-cognitive outcomes are useful (see, for example, Eccles et al., 2003; Feldman and Matjasko 2005). Recent overview articles, meta-analyses and reviews support the assumption of positive correlations between extracurricular participation and academic performance measured by grades (Eccles, Barber, Stone & Hunt, 2003; Feldman & Matjasko, 2005) as well as influences of participation on the development of social, physical and intellectual skills (Durlak, Weissberg & Pachan, 2010; Eccles & Barber, 1999). Although mostly grades and college completion were investigated as dependent variables, there are hints that academic competencies can be influenced as well (Lauer et al., 2006).

However, recently this rather product-oriented approach has widened. Either process-quality (as Miller & Truong, 2009) or quantity of participation, also referred to as “dosage” (as Vandell, Reisner & Pierce, 2007), are included in models of after-school program effectiveness. It is assumed that these factors are crucial to the achievement of positive effects from extracurricular participation.

As to quality, the following features have been shown to be important: structure (Mahoney & Stattin, 2000), adult supervision (Vandell et al., 2007), supportive relationships and opportunities for skill-building (Miller, 2003; Miller & Truong, 2009). In accordance with self-determination theory (Deci & Ryan, 1985; Ryan and Deci, 2000), it can be assumed that extracurricular activities have a high potential to address students’ basic needs (see also Fischer, Radisch & Stecher, 2009). Barber et al. (2005), for example, consider extracurricular activities to be settings that provide opportunities to enhance identification with the values and goals of the school. They assume that participating in organized leisure activities is a way for adolescents to meet their need for social relatedness. In his approach called “Positive Youth Development”, Larson (2000) argues that the effects of structured activities are triggered by social processes in peer groups (cf. Eccles & Barber, 1999) where adolescents can experience more autonomy than in classrooms.

Concerning dosage of the activities, Fiester, Simpkins and Bouffard (2005) describe “absolute attendance” as signing up to participate in an activity as compared to not participating at all, “attendance intensity” as the amount of time per week/month, etc., spent participating in an activity, and “attendance duration” as the length of the period of time during which participation in the activity took place (one year, a semester, etc.). Fiester et al. (2005) emphasize the importance of these variables in the evaluation of the effects of extracurricular activities. In particular, reviews and evaluations of after-school programs emphasize positive correlations between attendance duration and school motivation and grades (Simpkins, Little & Weiss, 2004; Welsh et al., 2002). Vandell et al. (2007) focus on the importance of dosage and link regular participation in extracurricular activities to positive academic, social and motivational development.

The analytical framework of StEG includes dosage and quality of extracurricular activities and also focuses on context variables outside school (e.g., community context) as powerful prerequisites for student change (figure 2, .cf. Stecher, Radisch, Fischer & Klieme, 2007).

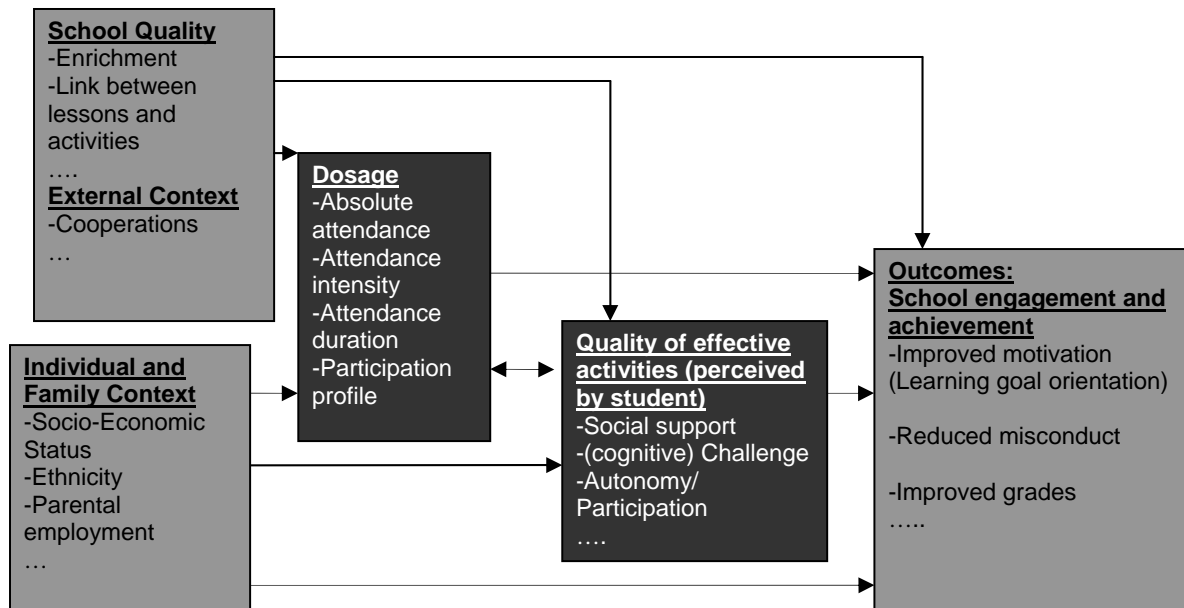


Fig. 2: Model of individual effects of extracurricular activities in the school (based on Stecher et al., 2007; Miller & Truong, 2009; Vandell et al., 2007)

In this approach, it is assumed that the effects of extracurricular activities on academic and non-academic student outcomes can be mediated by the students' perceptions of the process quality of the activity as well as by their attendance duration and attendance intensity. Moreover, the effects are dependent on individual variables such as ethnicity, cognitive abilities, and social background as well as on school quality and external context variables.

## II. The study of the development of all-day schools (StEG)

StEG is a multi-perspective and multi-criterial longitudinal study<sup>2</sup> funded by the German Federal Ministry on Education and Research and the European Social Fund. Four institutions cooperated to conduct the study<sup>3</sup> and 371 schools were included in the sample. Members of the target groups (i.e., the schools' principals, teachers, other pedagogical staff, parents and students) filled in questionnaires at three measurement points (=waves) in the years 2005, 2007 and 2009. For sample size information see table 1.

Table 1: Nationwide Sample

	2005	2007	2009
<b>Students</b>	30.562	26.357	26.985
<b>Parents</b>	20.950	17.523	16.349
<b>Teachers</b>	8.837	6.772	6.311
<b>Pedagogical Staff</b>	1.750	1.690	1.584
<b>Cooperation Partners</b>	676	812	729
<b>Principals</b>	357	316	300

<sup>2</sup> Further information [www.projekt-steg.de](http://www.projekt-steg.de)

<sup>3</sup> German Institute for International Educational Research (Klieme/Fischer); German Youth Institute (Rauschenbach), Institute for School Development Research (Holtappels), Justus-Liebig-University (Stecher)

Characteristics of schools and activities were analysed based on the data collected. The effects participating in extracurricular activities had on student development and on the families of the participants were also analysed. An overview of some important results based on complex statistical analyses including growth-curve and multi-level modelling<sup>4</sup> is provided in this paper. Control variables such as school track (highest track vs. all other tracks), organization type (open vs. compulsory), socioeconomic status (SES) and immigration background (of students and families), and the sex and age of the students were included in the models.

A longitudinal three-wave design was administered to a subsample of more than 10000 fifth-graders (in 2005). More than 9000 of them filled in at least one questionnaire, and more than 6000 responded at two waves (Furthmüller et al., in press). Many of the results reported here are based on this longitudinal subsample (see figure 3).

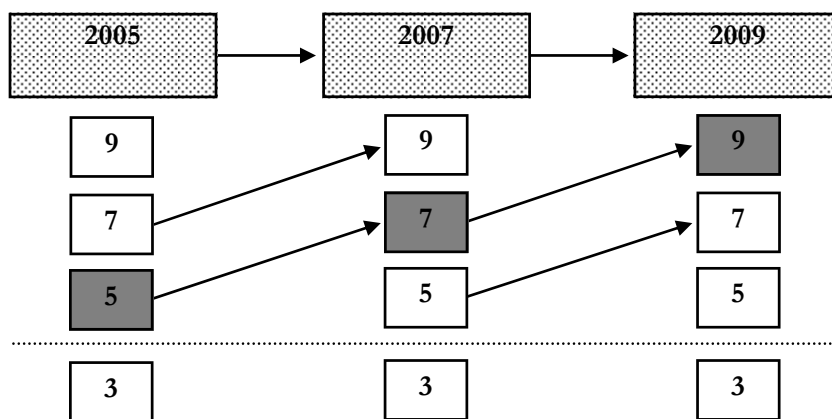


Fig. 3: Student sample and longitudinal three-wave-subsample of StEG (grey boxes)

### III. StEG results

#### III.1 Families

Family-related arguments in favor of all-day schooling include the likelihood of improvement in the work-life balance and the provision of additional educational support for parents. The Federal Department for Family, Senior Citizens, Women and Youth expects “... the introduction of all-day school to strengthen families and support parents in finding for themselves an optimal balance between being active in the family and active in the form of occupational employment” (BMFSFJ, 2006, p. 6). Thus potential benefit of all-day schools lies in the additional adult supervision provided for children whose parents both work outside the home. Results of StEG support this notion. More than 80% of primary school children whose mothers are employed full time participate in the additional activities available at all-day schools. There is a linear decline in the number of participating students dependent on the mother’s employment status (mother half-time employed: 66,5%; mother not employed: 48,5%).

Yet some argue that over and above this supervisory function, all-day schooling is needed to substitute for the ongoing decline in the quality of the upbringing children currently receive

<sup>4</sup> Full Information Maximum Likelihood (FIML) was applied to deal with missing values on the parameter level. The MLR estimator was chosen to meet non-normality and non-independence of observations. Standard errors are corrected using TYPE = COMPLEX, which is a function of Mplus that takes the clustered data structure into account.

from their parents (Appel, 2004). In particular, it is assumed that all-day schools will help raise successful adults by supporting families of low SES, children at risk, and immigrant children. StEG results confirm this assumption. By and large, parents report that all-day schools are supportive in connection with academic learning as well as with broader educational problems. Figure 4 demonstrates that parents of low SES especially, report relief concerning homework and disciplinary problems.

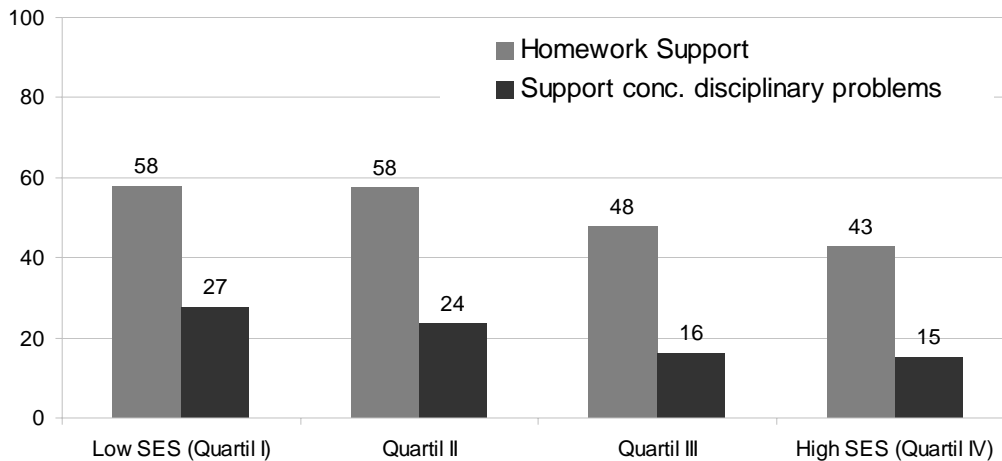


Fig. 4: Parent support (%) and SES (measured by HISEI).  
Source: StEG Parent Questionnaire 2009 (cross-sectional analysis)

If all-day schools are to provide support and promote integration of children at risk, it is crucial that at risk children and those with diverse family backgrounds are reached. StEG results indicate that this is the case in secondary schools. Concerning participation rates in all-day secondary schools, no differences were found based on SES or immigration background. Still, at all measurement points of StEG, primary school children of low SES showed considerably lower participation rates when compared to their peers of higher SES. This relates to the fact that full-time employment of both parents predicts participation in primary school.

On the whole StEG results show that all-day schools can be beneficial for all families. Partly based on experienced support, family-relationships of children who regularly participated in the afternoon activities improved. This is reported by secondary school students and their parents. At the same time, StEG data reveals that all-day-students do not differ from half-day students concerning frequency of family activities such as discussions, games or trips.

Summing up, StEG demonstrated that all-day schools can support parents and families if students participate on a regular basis. Currently, in open all-day secondary schools this is not the typical pattern. Figure 5 shows that even in grade 5 the majority of students participate in extracurricular activities only once or twice per week.

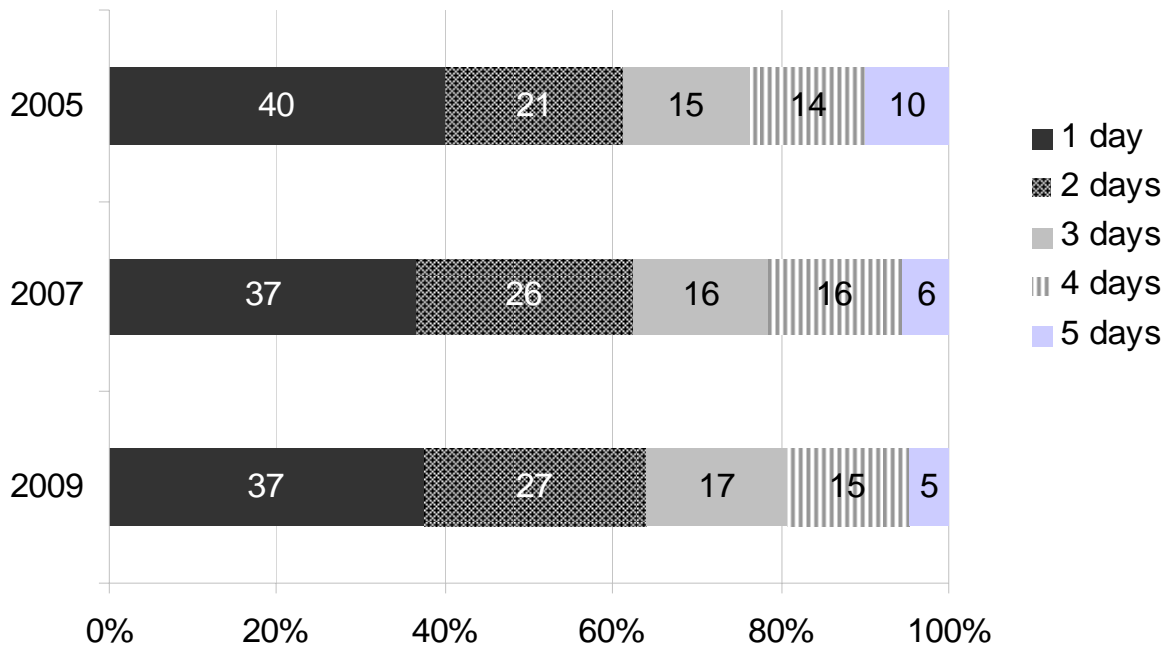


Fig. 5: Participation intensity (days per week) in grade 5  
 Source: StEG Student Quest. 2005 - 2009 (Panel-Schools, cross-sectional analyses)

Participation intensity per week is considerably higher in primary schools. As the day-care aspect diminishes, students tend to participate less frequently. This constrains the probable effectiveness of all-day schools in Germany.

### III.2 Schools

Klieme et al. (2005) argue that all-day schools are defined by organizational features such as an extended timeframe, provision of lunch, recruitment of additional staff (besides teachers), and regulations governing the choice of academic and non-academic activities provided (which may or may not be voluntary). Besides a more flexible organization and disposition of time, all-day schools differ from half-day schools in the following aspects:

- academic and non-academic enrichment (extracurricular activities linked to lessons);
- integration of educational personnel (besides teaching staff); and
- cooperation with partners from outside the school system.

The results of StEG add to a better understanding of these developments.

#### III.2.1 Academic and non-academic enrichment

Extracurricular activities are provided by every all-day school in Germany, although their pedagogical concepts are very heterogeneous (Holtappels et al., 2007; Hertel et al., 2008). Table 2 contains the StEG categories of activities and examples.

Table 2: Variety of Activities

Category	Examples
Homework support	Homework support, rehearsal time
Academic enrichment	Mathematics, science
Remedial courses	For immigrant children, for low-level learners
Non-academic enrichment	Sports, theatre, gardening
Supervision (daycare – in primary schools)	Leisure time

StEG results show that most schools provide a large variety of activities and that becoming an all-day school leads to a considerable increase in the diversity of activities provided. By 2009 more than 90% of primary and secondary schools offered homework support. Although academic and non-academic enrichment programs have been initiated, most students participate in non-academic activities during the extended school hours in all-day primary and secondary schools (see figure 6).

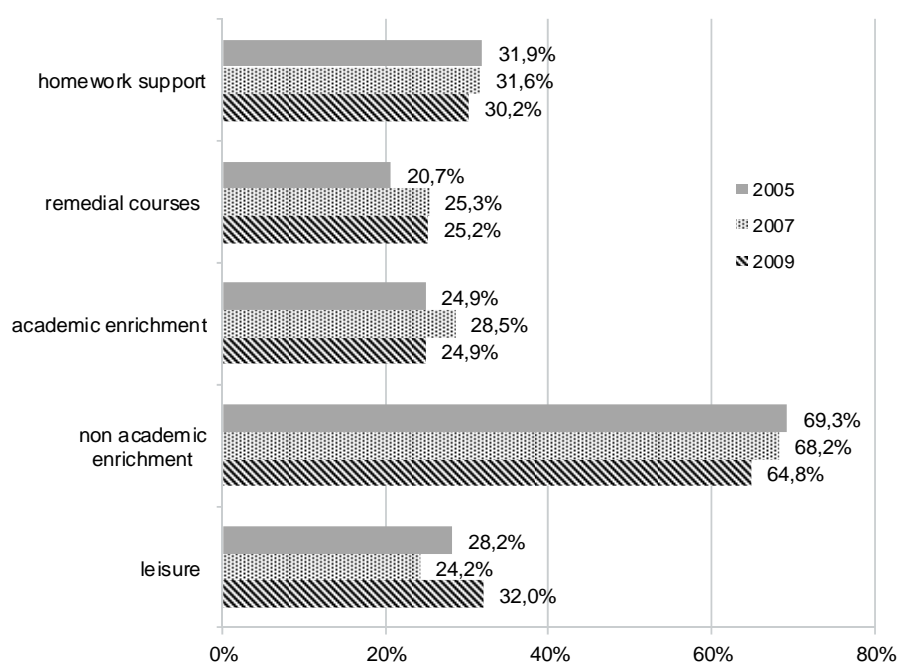


Fig. 6: Participation rates in all-day secondary schools dependent on type of activity  
 Source: StEG Student Questionnaire 2005 - 2009 (Sek- I; aggr.(school-level), Panel-schools, cross-sectional analyses, participants)

As mentioned above, the non-academic activities conducted in the afternoon are developed to have a conceptual relationship to the academic lessons of the morning. In this way it is assumed that the non-academic activities will have a greater impact on student learning. Moreover, Klieme et al. (2005) suppose that there is a risk of declining school quality if a school's core activity, instruction, is only loosely connected to its afternoon programs. Data collected from the StEG principal questionnaire reveals that this conceptual link is often missing. Although in primary schools conceptual relationships between lessons and activities<sup>5</sup> increased during the study, in secondary schools no development at all was reported. This could be associated to a deficiency in the level of cooperation of teachers and adult supervisors in the activities.

<sup>5</sup> Measured by items such as "There is usually a connection between the topics of the projects / working groups and the topics of the subjects dealt with in class or they usually result or are derived from them"

However, changes at the organizational level are expected to affect non-cognitive outcomes rather than academic achievement. Effects on achievement are only to be expected if an all-day school makes deliberate changes to the culture of teaching and learning in the lessons as well as in the activities. This concerns the quality of learning processes in the afternoon activities.

### III.2.2 Process quality of extracurricular activities

As stated above (I.2), all-day learning can be assumed to have positive effects on individual developmental trajectories – provided that certain quality criteria are fulfilled. For example, by addressing the needs of competence, autonomy and social relatedness, the activities are expected to enhance social learning, motivation, school commitment and academic learning. In this way, attendance at all-day schools can be expected to contribute to the integration of immigrant and low SES children and youth.

In StEG, students were asked to report the process quality of the afternoon activities with respect to three categories considering the basic needs introduced by Deci and Ryan (1985). As an indicator of autonomy experience, participation in the activities was rated. The feeling of competence was measured by items concerning activation and challenge in the activities. Confirmatory factor analyses showed that these aspects were based on one factor, “process quality”, in StEG (which also includes other motivational aspects). Another factor, “student-staff relationship”, illustrates the relationship between students and adults (i.e., teachers or additional staff) during the activities as an indicator of social relatedness. Table 3 contains item examples.

Table 3: Indicators of activity quality

Scale	Process quality		Student-staff relationship
<b>Content</b>	Participation	Activation and Challenge	
<b>Example</b>			
<b>Item</b>	Often we can decide about	Every student has to work	Students and staff get on well
<b>Example</b>	topics in the activity.	actively on a task.	with each other.

Cross-sectional results of StEG indicated that student-perceived process quality of activities was at a medium level and did not change during the study. However, student estimation was based on a number of conditions. Figure 7 illustrates two of them. First, as the figure is based on the longitudinal student sample it can be seen that perceived process-quality declined with age. In fact, this is a rather normal development. School attachment and evaluation as well as motivation tend to decline with age (Eder, 2010; Jacobs et al., 2002). Second, although process-quality and student-staff relationship resulted in two factors in confirmatory factor analyses, they are related to each other. The better student-staff relationship is judged, the higher the perceived process-quality<sup>6</sup>.

<sup>6</sup> As stated above, this and all other results rely on complex growth curve modeling, although figures show simple relationships (just for illustration)

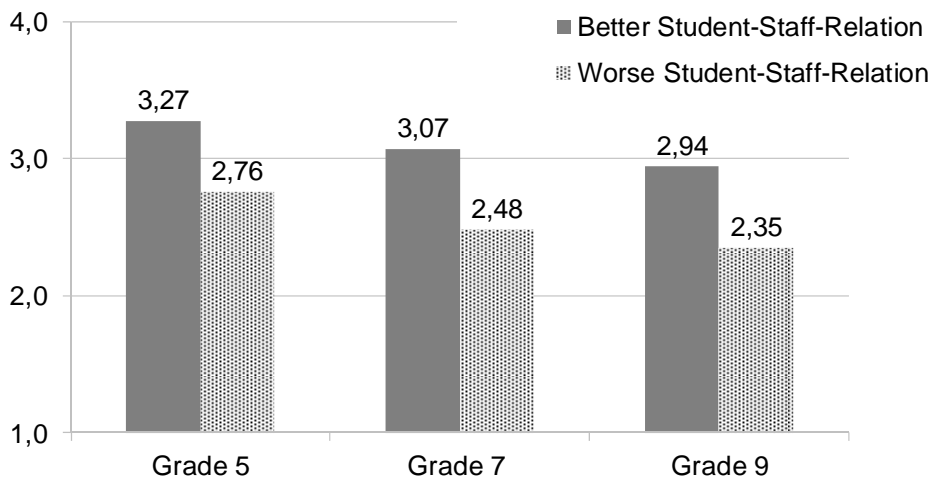


Fig. 7: Relationship between student-perceived student-staff relationship and process-quality of activities (Y-Axis), Range of both variables: 1-4, students were grouped (better or worse student-staff relationship) by median-split to create this figure  
 Source: StEG Student Questionnaire 2005 - 2009 (Sek. I, longitudinal sample, Activity participants)

As StEG-data indicates, there is also a connection between school climate (i.e., teacher-student relationship, teacher-staff relationship, teacher strain, student deviance on the school level) and student perceived process-quality. At the individual level, it was found that besides age and perceived student-staff relationship, students' ratings of process quality were influenced by another variable: if students were given the opportunity to decide about extracurricular participation for themselves they tended to give higher ratings to process-quality than their peers who were assigned to activities by their parents or teachers.

### III.2.3 Integration of educational personnel (in addition to teaching staff)

StEG results indicate that in primary all-day schools more than 60% of the additional activities offered are supervised by staff recruited especially for this purpose. In secondary schools most activities are directed by teachers. An important prerequisite to the linking of extracurricular activities to academic lessons is the cooperation of teachers and other educational staff (Klieme et al., 2005). As Klieme et al. (2005) argue, a half-day school cannot be converted into an all-day school without broad consensus on educational goals. The processes of planning and agreeing to extended hours and additional staff increase the necessity for coordination and cooperation. StEG results indicate that satisfaction with cooperation among teachers and additional staff is stable and at a high level but there are differences concerning the topics that require cooperation: More discussion of educational problems concerning individual students tend to take place at all-day schools, however, joint development of integrated projects and activities is rare. This corresponds to the lack of conceptual relationship between morning lessons and afternoon activities.

### III.2.4 Cooperation with partners from outside school

Becoming an all-day school is associated with opening the school facilities to community associations. Cooperative partners often send staff to the schools to conduct activities. Table 4 provides information about the most important cooperative partners.

Table 4: Important Partners

% of schools cooperating with		
Primary School	2007	2009
Sports	76,6	85,1
Youth welfare service	54,4	65,8
Cultural education	55,7	64,8

% of schools cooperating with		
Secondary School	2007	2009
Sports	69,3	70,5
Youth welfare service	54,1	58,7
Cultural education	50,5	53,6

Source: StEG Principal Questionnaire 2005 - 2009 (Panel-Schools)

StEG results indicate that an increasing number of schools cooperate with external partners (see table 5). Moreover, the number of cooperative partners per school increased steadily from 4.5 in 2005 to 6.2 in 2009. All in all, cooperative partners report satisfaction with the relationships although their organization and structures (i.e., regulatory framework, contracts) vary widely.

Table 5: Number of Schools with Cooperative Partners (%)

2005	2007	2009
70.9 %	85.1 %	86.9 %

Source: StEG Principal Questionnaire 2005 - 2009 (Panel-Schools)

### III.3 Student development

As stated above, the educational results achieved by all-day schools have become an important political issue recently. The few empirical results from Germany suggest greater effects on social learning than on academic achievement. However, international studies indicate that participation in extracurricular activities affects several aspects of student learning. The analytical framework of StEG (figure 2) assumes that participation in all-day schools can affect student learning directly or indirectly. The latter implies that quality and attendance variables are influential. Results of StEG indicate that effects were based on *long-term* participation in the activities, that is to say, students who reported participating in the all-day activities at no less than two measurement points of StEG showed considerable advantages in development. Independent of the process-quality of activities, this could be tracked for social (mis)behaviour and for grade retention risk (i.e. the risk of having to repeat a school year).

As figure 8 indicates, grade retention risk in compulsory all-day schools is considerably lower than in open all-day schools. However, if students participate (no less than 2 waves of StEG) in extracurricular activities in open all-day schools, retention risk decreases considerably and approaches the level of risk in compulsory all-day schools. This effect is very stable, even when controlling for many possible predictors such as school track, SES, etc. Although StEG

results do not indicate whether retention policies in compulsory all-day schools differ from those in open all-day schools, the reduction of the risk of having to repeat a school year in open all-day schools indicates that extracurricular participation can be linked to a lower risk for individual students.

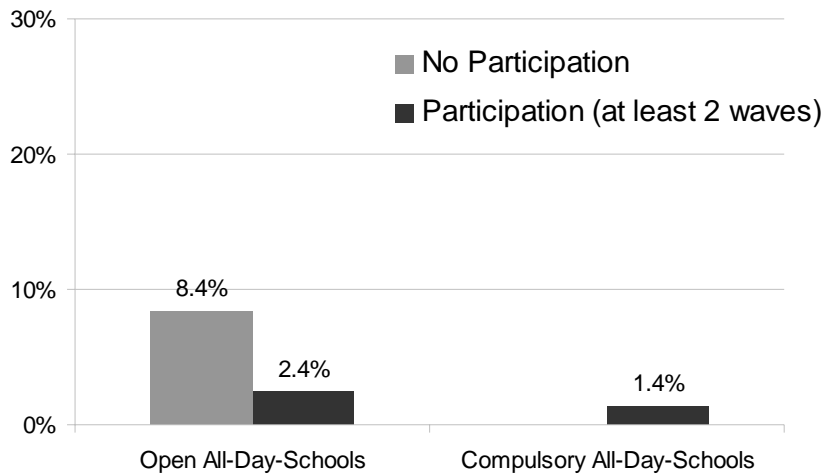


Fig. 8: Student risk of having to repeat a school year based on all-day school type (open vs. compulsory) and extracurricular participation (note that in compulsory schools all students are required to participate)

Source: StEG Student Questionnaire 2005 - 2009 (Sek. I, Panel-schools)

This result suggests that the development of school grades should also be influenced by participation in extracurricular activities. However the data only imply this when the long-term extracurricular participation took place intensively (i.e. at least 3 days per week) respectively. Considering the results regarding participation intensity in secondary school (figure 5), only a few students took advantage of this potential benefit.

Similar to former German studies, StEG results showed extracurricular participation to have a positive effect with respect to social misbehavior in school: students who participated in the activities reported a more positive development (namely, a decline in behavior such as teasing other students, disturbing lessons, vandalising property, violence and absenteeism) than their peers not participating in the activities. However effects on positive aspects of social behavior (prosocial behavior) can only be found if process-quality is taken into account as well.

StEG results show that individual effects of extracurricular participation in all-day schools depend mostly on the quality of the activities. This holds true for school grades, school attachment, social engagement and learning goal orientation. If students participate for a certain period of time (i.e., at least two waves of StEG) in activities that they rate to be high in process-quality (and student-staff relationship) they show more positive development in these areas than their non-participating peers. This is shown at the individual level as well as at the school level.

Considering that schools differ in the process-quality of their extracurricular activities and in student-staff relationships, StEG aggregates student judgements provided in the cross-sectional samples to predict the probability of individual achievement in the longitudinal sample. These analyses show that school quality influences the individual development of students' skills. This is emphasized by a result concerning process-quality of morning lessons: in schools where teachers reported more individualization in the lessons, extracurricular participation had a positive effect on mathematics grades and school attachment.

Figure 9 gives a broad overview of the reported results.

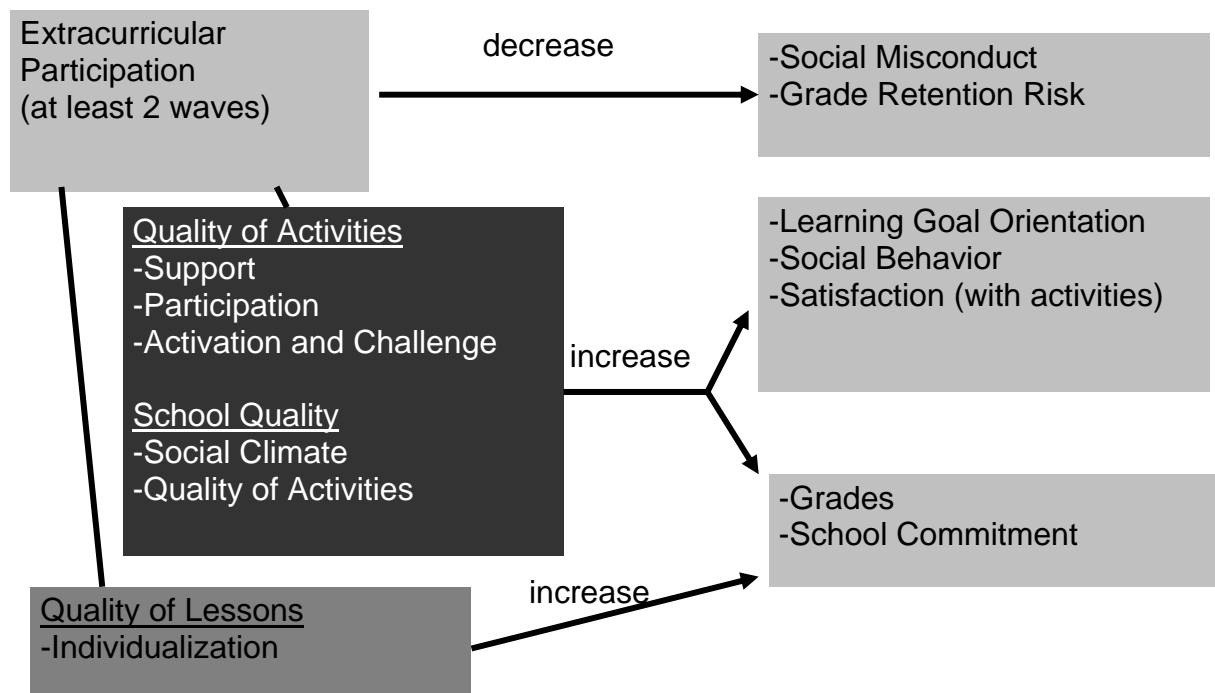


Fig. 9: Broad overview of the StEG results with respect to student development

On the whole, StEG results indicate that all-day schools can contribute to improved academic and non-academic achievement, given that students regularly make use of the additional activities and dependent on activity and on school quality.

#### IV. Summary and future prospects

Political motives for introducing all-day schools and extending their availability were based on suggestions from the fields of education, youth, family, and employment. International empirical results confirm the assumption that extracurricular participation in schools has positive effects on a number of aspects of student development. Becoming an all-day school in Germany requires many changes at the school level in order to provide academic education, childcare and extracurricular activities for at least seven hours per day three days a week.

StEG assessed school and student development at three measurement points (2005, 2007, 2009). Results show evidence of an improvement in family-work balance for parents. Moreover, parents feel supported by all-day schools. This is especially true for families of low SES. Unfortunately, their primary school children tend to participate in the all-day programs slightly less than children from higher SES families. No such differences were found at the secondary school level. All-day schools can enhance family climate if students participate regularly. Nonetheless, StEG results indicate a declining intensity of extracurricular participation per week with age. As schools become all-day institutions, they provide more and more academic and non-academic enrichment opportunities. Although extracurricular activities should be conceptually related to academic lessons in the morning, this is not always the case.

StEG also elicited responses from students regarding their perceptions of the quality of the learning processes during the extracurricular activities. All in all, quality of extracurricular

activities is rated rather positively. Student ratings are based on student-staff relationship, student age, and other characteristics of students and their schools.

Concerning student development, StEG results show that developmental advantages to some extent are related to process-quality of the extracurricular activities and duration and intensity of participation. Given this, all-day schools can enhance motivational and social development of students as well as their grades. However, as StEG focuses on school development, it can only provide initial insights in these areas.

As students often participate in activities for half a year, future research should be conducted with shorter intervals between measurement points. Moreover, academic achievement should be measured by objective tests in addition to grades. Further research is needed to identify additional quality features, especially for non-academic activities, and to consider the content of specific activities (i.e., remedial course vs. social learning) in relation to different student outcomes.

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