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How Youths' Profiles of Extracurricular and Leisure Activity Affect Their Social Development and Academic Achievement

Markus Sauerwein, Désirée Theis & Natalie Fischer

Abstract: Research has shown that participation in extracurricular activities has a positive effect on adolescents' social behaviour and academic performance; however, the reciprocal influence of extracurricular activities and leisure on the development of adolescents' academic performance and social behaviour is unclear. In our study, we investigate the effect of school based and out-of-school leisure activities on adolescent's social and scholastic development. We also explore how students' gender, socioeconomic status and ethnicity influence their choice of, and engagement in activities. A sample of 5278 students (females 50%; migrant background 26%) filled in questionnaires in grade 5 and 7 and provided personal background information as well as evidence of their engagement in extracurricular and leisure activities, their social behaviour and academic performance. Using latent class analysis, we distinguished five identity-related patterns of engagement in extracurricular and leisure activities among 5th-graders. We found a connection between adolescents' gender, socioeconomic status, and ethnicity and their choice of, and engagement in, extracurricular and leisure activities, social behaviour and grades. We also identified a link between adolescents' patterns of engagement in extracurricular and leisure activities and developmental tendencies in their social behaviour and scholastic achievement between grades 5 and 7.

Keywords: extracurricular activity, leisure, adolescent development, academic achievement, social behaviour

Introduction

One objective of schooling is to prepare young people to cope in an adult world that is typically disordered (Larson, 2011); however, classroom instruction usually takes place in a highly structured environment. Extracurricular activities provide adolescents with learning environments that resemble real-world settings and therefore have become a significant topic of empirical research in the field of education (Larson, 2011; Mahoney, Vandell, Simpkins, & Zarrett, 2009). Findings suggest that how adolescents spend their free time affects the development of their social behaviour, their academic achievement as well as their abilities to cope with real-life challenges (Shernoff, 2010; Eccles & Barber, 1999). Also, by participating in extracurricular activities, adolescents have the opportunity to experiment with social roles, behav-

iours, and identities without getting involved in risky activities (Barber, Stone, Hunt, & Eccles, 2005; Larson, 2000, 2006, 2011, Eccles & Roeser, 2011). It is assumed that the positive influence of extracurricular activities on adolescents' development is due partly to young peoples' positive experiences during participation. Students for example reported high levels of concentration and intrinsic motivation during extracurricular activities (Larson, 2000; Hansen, Larson, & Dworkin, 2003).

There are some apparent weaknesses in existing research on extracurricular activities. In most of the studies, adolescents' (self-)selection of extracurricular activities is not randomized, limiting the possibility of drawing causal conclusions on the effects of participation (Fauth, Roth, & Brooks-Gunn, 2007; Mahoney et al., 2009). Moreover, the influence of participation in extracurricular activities cannot be separated from personality characteristics, peer influence, and effects of participating in other activities (Eccles & Barber, 1999; Barber, Eccles, & Stone, 2001).

In this article, we focus on the last issue and explore effects of participation in diverse extracurricular activities. As a first step, we perform latent class analyses (LCA) to investigate patterns of adolescents' participation in school-based and out-of-school extracurricular activities. After that, we explore whether adolescents' activity patterns differ according to their social behaviour and academic achievement (grades) in 5th grade and how the activity patterns influence the development of social behaviour and academic achievement between in 7th grade.

The influence of type and breadth of activity

Most studies in the field of extracurricular and leisure activities have been conducted on the influence of one specific kind of extracurricular activity – mostly sports – on social behaviour and/or academic outcomes (Broh, 2002; Gano-Overway, Newton, Magyar, Fry, Kim, & Guivernau, 2009; Gardner, Roth, & Brooks-Gunn, 2011; for an overview see Feldman & Matjasko, 2005; Mahoney et al., 2009). But there are also studies that investigate the effects of participating in several extracurricular activities on adolescents' development (Eccles & Barber, 1999; Fredricks & Eccles, 2006, 2005; Marsh & Kleitman, 2002; Darling, 2005; Shernoff, 2010; McGee, Williams, Howden-Chapman, Martin, & Kawachi, 2006). Although in most cases small but positive effects of extracurricular activities have been identified, some negative results also have been found. For example, participation in sports has often been related to a higher likelihood of substance abuse (Barber et al., 2001; Fauth et al., 2007); however, this link vanished when peer influence was taken into account (Blomfield & Barber, 2010).

While most studies have neglected that approximately 70% of adolescents report participation in more than one out-of-school activity (Larson et al., 2006; Bartko & Eccles, 2003; Feldman & Matjasko, 2007), some scholars have taken the breadth of extracurricular activities into account (Simpkins et al., 2008; Fredricks & Eccles, 2006, 2010; Fauth et al., 2007; Larson et al., 2006). Hence, participation itself as well as the number of activities that adolescents are regularly involved in should affect their development in a positive way. This has been supported by empirical research. For example, Fredricks and Eccles (2010) found that the breadth of partic-

icipation in extracurricular activities was associated with positive academic outcomes and less risky behaviour. Some authors argue that participation in several activities exposes adolescents to a wider variety of peers and supportive adults (Feldman & Matjasko 2007; Larson, Hanson, & Moneta 2006). Furthermore, adolescents spending a significant amount of time in different organized activities have less time to engage in delinquent acts (Eccles & Roeser, 2011). Also, differences based on the type of activity have to be considered. It can be assumed that participation, for example, in sports and community-oriented activities differs from participation in drama and academic activities. In a cross-sectional study, Feldman and Matjasko (2007) distinguished between various "portfolios" of extracurricular engagement. The authors grouped more than 30 activities into conceptually homogenous groups (sports, academia, school based, performance) and created a multiple activities category for students participating in at least two activities belonging to different categories. They compared students who participated in activities in only one category (e.g., sports) to those who participated in multiple activities. Participation in multiple activities was more common for students with a high socioeconomic status (SES) and a higher GPA. Feldman and Matjasko (2007) underlined the need for more research taking various activities in to account.

Bartko and Eccles (2003) included extracurricular activities taking place at school as well as unstructured leisure activities (e.g., hanging out with friends and watching television) in their research. In a cross-sectional analysis, they identified six clusters of adolescents. While the first cluster comprised of students participating in sports and spending substantial time with friends, the second cluster consisted of students spending time in school-based clubs, doing homework, and reading. The third cluster included uninvolved students reporting low rates of involvement in all activities and the fourth cluster involved students with high participation rates in volunteer activities. Moreover, the fifth cluster comprised students who were actively involved in all activities. Finally, the sixth cluster consisted of students working after school who were underrepresented in the other activities (Bartko & Eccles, 2003). The authors linked the clusters to psychological and socio-ecological indicators. Students in the second and sixth clusters had the highest GPA, while those in the third cluster had the lowest GPA. Problematic behaviour (e.g., substance abuse, fighting, cheating on tests) was reported mainly by students in the clusters related to sports, those who were uninvolved in activities, and working adolescents. In general, participation in structured activities was linked to adaptive behaviour (less problematic behaviour and higher self-esteem); participation in few activities was connected with poor psychological functioning (e.g., depression). Peck, Roeser, Zarrett, and Eccles (2008) performed a cluster analysis as well and reported similar participation patterns. Also, participating in a sports-oriented, volunteer, or school-based activity was related to higher rates of college attendance.

Overall, participation in various types of activities may lead to even more positive effects than involvement in only one kind of activity. Furthermore, some scholars have taken the participation of students in several extracurricular activities into account, which can be displayed in participation profiles. In summary, there are three recurring profiles of adolescent engagement in extracurricular and leisure activities: sports-oriented, highly-engaged, and minimally-engaged. Disadvantaged adoles-

cents are overrepresented in the minimally-engaged activity pattern (e.g., Zarrett et al., 2009).

Research objectives and hypothesis

Many studies have revealed a positive impact of engagement in extracurricular activities on students' academic performance and social behaviour. However, as most adolescents spend their time participating in more than one extracurricular activity and have leisure time to read, meet friends and so forth, it is nearly impossible to determine the effects of one specific activity on adolescents' development. Some studies have addressed this issue by including the breadth of activities or by focusing on patterns of activities. All studies at hand have been conducted in the United States, but German culture differs from North America's. Traditionally in Germany school ends at 13/14 p.m. Lunch and extracurricular activities are not generally offered at school. This fact led to a long tradition of adolescent activities organized by club and institutions outside of school (Fischer, Theis, & Züchner, 2014). However, since 2003 in Germany the number of schools offering extracurricular activities, lunch and additional learning time (so-called all-day schools) is increasing (Fischer & Klieme, 2013). In 2011 more than half of the schools were registered as all-day schools (Secretariat of the Standing Conference of the Ministers of Education and Cultural Affairs of the Laender in the Federal Republic of Germany, 2013). Students of these schools have the opportunity to participate in extracurricular activities (at school) as well as in leisure activities (outside school). In both cases attendance is mostly optional.

Based on a sample of students in all-day schools one purpose of this study is to explore participation patterns and their predictors in a German sample and to compare the results and to the American studies. However, these studies seldom analyse effects on students' social behaviour and/or academic achievement (e.g., Bartko & Eccles, 2003; Peck et al., 2008; Zarrett et al., 2009). Therefore, the second purpose of this study is to explore how adolescents' participation profiles are related to the development of social behaviour and academic achievement.

Taking into account the variety of activities that adolescents are involved in at school and during their leisure time, we identify different adolescents' profiles based on engagement in school-based and out-of school extracurricular activities and leisure time behaviour. Based on earlier research findings we suppose that variables such as gender, SES and school track relate to these profiles (Bartko & Eccles, 2003; Peck et al., 2008). Therefore, we included these variables as control variables.

Method

Design and sample

Analyses are based on data from the “Study on the development of all-day schools” (StEG, [Studie zur Entwicklung von Ganztagschulen]), a longitudinal study. Students completed questionnaires at three assessment points (waves), one each in 2005, 2007, and 2009. The StEG design included a combination of longitudinal (panel-) and cross-sectional (trend-) data. In this paper a subsample of StEG was used. Analyses were conducted using data gathered first in 2007 and second in 2009 from 5278 students in grades 5 and 7. Females comprised approximately 50% of the sample (n=2610). Approximately 26% of the sample (n=1387) had a migration background. Thus, at least one parent or the student himself/herself had been born outside of Germany. The secondary school system in Germany is multi-layered and regulated according to state legislation. It consists of either a two- or a three-tiered structure. Tracking begins in 5th grade and is based on students' performance in primary school. Passing final examinations in the highest track entitles students to attend university. In this study nearly 27% (n=1415) of the students are in “Gymnasium”, the highest track of secondary school in Germany.

Measures

Participation in school-based extracurricular activities

Students indicated on a list of 14 school-based extracurricular activities the ones they were involved in in 5th grade (2007). To reduce the variables for the LCA the individual activities were combined content related and the following categories of activities were formed: academic-related, which consisted of activities covering the subjects of mathematics, German and foreign languages (e.g., English, French, Latin); cultural activities, which subsumed music (e.g., singing, playing in the orchestra) and cultural activities (e.g., drama, dancing); sports; and computer/media. Table 1 shows the percentage of students participating in the different types of extracurricular activities.

Participation in out-of-school activities and spending leisure-time

Students reported on which out-of-school activities they joined regularly and how they spent their leisure time. They indicated on a five-point ordinal scale (1=never; 2=less than once a month; 3=once a month; 4=weekly; 5=every day) how often they were engaged in each of the six common activities displayed in Table 1. These variables were dichotomized for methodological reasons (see Analytic strategy). Values of 4 and 5 were recoded to 1, while responses with values of 3 or lower were set to 0.

Table 1. Frequency of Engagement in Leisure Activities

School-based extracurricular Activities	Frequencies (n Students)
Sports	37,3% (1967)
Culturally orientated	24.9% (1316)
Subject related	22,2% (1174)
Computer/ media courses	16.8% (885)
Out- of-school and leisure-time Activities	
Meeting Friends	68,5% (3618)
Sports (in a club)	56,2% (2968)
Reading	53.0% (2797)
Computer	51.7% (2730)
Music	32,5% (1715)
Private lesson	14.2% (752)

Academic achievement/grade

Academic achievement was assessed according to students' self-reported grades in mathematics, German and a foreign language (usually English) as indicated on their latest report card. Note that in Germany grades range from 1 (best) to 6 (worst). For analyses of data in this study we built a latent factor of grades. Analyses showed an acceptable Cronbach's α for both assessment points (5th grade .743 | 7th grade .730). Strong measurement invariance of the factor grade is given (RMSEA: .058 | CFI .981). In 5th grade the mean of this indicator was 2.73 (SD .73) and in 7th grade it was 2.99 (SD .76). This means that students' grades decreased between grades 5 and 7, a result which has been reported in other studies (e.g., Urdan & Midgley, 2003).

Deviant behaviour in school

To assess deviant behaviour, students indicated on a five-point Likert scale (1=never - 5=every day) how often they had done the following over the previous 12 months in school or on their way to school: made fun of someone, provoked a teacher, cheated on a test, disturbed lessons. The internal consistency of the scale was good at both assessment points (Cronbach's α 5th grade .805 | 7th grade .791) and strong measurement invariance was obtained (RMSEA: .036 | CFI .980). Like many other deviant behaviour scales, the scale used in this study was skewed. The mean in 5th grade was 1.45 (SD .78) and in 7th grade it was 1.76 (SD .88). Although students tended to describe their behaviour in a favourable way, deviant behaviour seemed to increase between the 5th and 7th grades (Fischer, Kuhn, & Züchner 2011).

Prosocial behaviour in school

To assess prosocial behaviour students indicated on a five-point Likert scale (1=never - 5=every day) how often during the previous 12 months at school they had helped other students solve a conflict without using violence, helped other students with their homework, helped new students find their way at school, helped tidy the classroom, tried to intervene if lessons were disturbed. Cronbach's α in 5th grade (.723) and 7th (.727) grade was acceptable and strong measurement invariance was given (RMSEA: .042 | CFI: .952). Students had an average of 2.55 (SD .96) in 5th grade and 2.28 (SD .82) in 7th grade. Analogous to the increase in deviant behaviour, a decrease in prosocial behaviour can be seen between the 5th and 7th grades.

Cooperative behaviour

The students' cooperative behaviour was measured on a four-point Likert scale (1=don't agree - 4=completely agree) and based on their responses to the following statements: I enjoy working together with others, I feel good when I am working together with others, and generally I manage working together with others. Cronbach's α in the 5th (.835) and 7th (.858) grades was good. Strong measurement invariance (RMSEA: .019 | CFI: .998) was given. On average, students reported values of 3.41 (SD .68) in the 5th grade and 3.20 in the 7th grade (SD .71).

Control variables

All regression analyses were controlled for sex (girls vs. boys), migration background, school track and SES. For the binary-coded migration background variable students were considered to have a migration background. For school track, a dichotomous variable consisting of the highest school track vs. other tracks was employed. For SES, the international socioeconomic index of occupational status (ISEI) was used. The ISEI is based on the assumption that jobs can be classified in a hierarchical system. The lowest level job (i.e., agricultural non-skilled worker) is given a value of 16 while the highest (i.e., judge) is given a value of 90. Each parent is assigned to a SES value of between 16 and 90 (see description of the control variables above). To determine the participants' SES we used the highest ISEI value in the family, the HISEI. On average, the students' families had a value of 47 (SD=17).

Analytic strategy

Latent Class Analyses (LCA) were conducted to identify the different groups of adolescent according to engagement in extracurricular activities in and out of school. Latent classes or groups were identified according to the patterns of participation in school-based and out of school extracurricular activities and leisure time behaviour. Individuals could then be classified into distinct groups based on their response patterns (Finch & Bronk 2011; Magidson & Vermunt, 2004; Jung & Wickrama, 2008).

Typically, neither the number of groups nor their characteristics are known prior to conducting an LCA (Kaufman & Rousseeuw, 1990); thus, LCA is an exploratory method.

To determine the correct number of latent classes, we adhered to suggestions from Nylund, Asparouhov, and Muthen (2007) regarding the advantages and disadvantages of several suitable indices based on a simulation study. Nylund et al. (2007) found strong evidence that the BIC is the most reliable when a sample size is large enough. In addition to the BIC, there are likelihood ratio-based tests to determine the correct numbers of classes. We used the Lo-Mendell-Rubin (LMR) test that compares the improvement in fit between neighbouring class models. In addition to the BIC and LMR test, the bootstrap likelihood ratio test (BLRT) was considered in the decision for the right number of classes. Similar to the LMR test, the BLRT compares the improvement of fit in the current model with a model with one fewer class. The p value means that the fit improves significantly given a solution with one more class (Nylund et al., 2007). In summary, results from the simulation study by Nylund et al. (2007) suggest that the BLRT performed better than the LMR test (Nylund et al., 2007). For the LCA we used MPlus Version 6.

Latent structural equation models (SEM) were applied to investigate the influence of the classes on GPA, deviant behaviour, prosocial behaviour, and cooperative behaviour. To investigate longitudinal effects, GPA, deviant behaviour, prosocial behaviour and cooperative behaviour in 7th grade was regressed on latent class membership in 5th grade, in four separate analyses, and the corresponding 5th grade variables were controlled. The clustered data structure was taken into account using the `type = complex` function in Mplus. We used the full information maximum likelihood estimator (FIML), which is implemented in Mplus to deal with missing values.

Results

We computed several LCA with solutions including four to six classes. Table 2 indicates that the best solution consisted of five or six groups according to the BIC. Results of the LMR test and the BLRT suggest that the five-group solution was better than the four-group solution. As results of the LMR test indicate the five-group solution would be best while results of the BLRT are in favour of a six-group option, we compared the five-group and six-group solutions based on their content. Due to boundary estimates and difficulties interpreting six different groups, we chose the five-group solution. In line with Magidson and Vermunt (2004), we thus chose the model with the smallest numbers of latent groups, which fit the data and could be sufficiently explained.

Table 2. Comparison of Fit Indices for Four-, Five- and Six-Group Solutions

	BIC	Adjusted BIC	LMR For k-1 (H0) vs. k classes	BLRT For k-1 (H0) vs. k classes
Four Classes	49838	49702	p<.05	p<.001
Five Classes	49789	49617	p<.01	p<.001
Six Classes	49806	49599	p=.13	p<.001

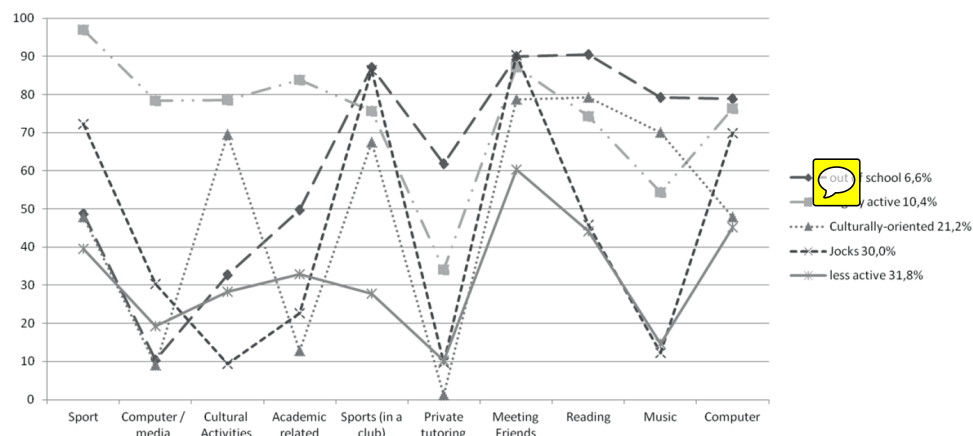
Note: k = number of latent classes; BIC = Bayesian Information Criterion; LMR = Lo-Mendell-Rubin; BLRT = bootstrap likelihood ratio test.

Types of adolescents

In the following, we describe five types of adolescents as determined by their participation in extracurricular and leisure activities (Figure 1).

The first type of adolescent engaged in several activities out of school and did sports in a club, met friends, read, partook in musical activities (organized privately or in a music school) and received private tutoring. Students belonging to this group were named out-of-school adolescents (Figure 1). The probability that adolescents in this group also engaged in activities organized by the school was less than 50%. This group was the smallest: less than 7% of all adolescents belonged to this group. No specific demographic pattern was associated with this group (see Table 3).

Figure 1. Five types of adolescents based on their participation in extracurricular and leisure activities



Note: The Y axis shows the probability of members of a certain group participating in specific activities.

The second type of adolescent reported participating in several (9/10 listed) activities in and out of school and was referred to as highly active. The only type of activity highly active adolescents did not participate in was private tutoring (Figure 1). These students generally had a below-average SES, were more likely to have a migration

background, and often were in lower school tracks (see Table 3). Altogether, 10% of the adolescents investigated belonged to this group.

The third type of adolescent was referred to as culturally-oriented and tended to engage in cultural activities in and out of school (i.e., reading and music), do sports in a club and meet friends. These adolescents tended to play computer games less frequently than their peers (Figure 1). More than 20% of the students involved in the study belonged to the culturally-oriented group, which comprised more girls, students with a higher SES and students in the highest school track (see Table 3).

The fourth type was called adolescent jock, and typically engaged in sports in and out of school and met friends. Jocks frequently played computer games (Figure 1) but did not participate in culturally-oriented activities or activities related to school (private tutoring, academic-related clubs). Two-thirds of the jocks were boys, and 30% of all the adolescents in our sample belonged to this group (Table 3).

The fifth type of adolescent was specified as less active due to low rates of participation in the listed activities. Students in this group participated in no specific activity and even the probability of them meeting friends out of school was quite low (60%) compared to adolescents in the other groups (Figure 1). There were no specific demographic patterns for the less active students. Nearly one-third of the students from our sample belonged to this group.

As they could not be described by specific demographic characteristics or engagement in specific activities, the less active adolescents were included as a reference group in the regression analyses.

Table 3. Demographic Characteristics of the Identified Groups

Characteristics	Out-of- school	Highly active	Culturally orientated	Jocks	Less active
Girls	49.0%	51.7%	63.7%	33.3%	55.6%
HISEI: low	24.9%	30.0%	17.6%	23.8%	25.6%
HISEI: middle	28.2%	28.5%	19.7%	28.2%	28.2%
HISEI: upper	20.9%	19.1%	23.7%	25.7%	23.4%
HISEI: highest	25.9%	22.4%	39.0%	22.3%	22.8%
Gymnasium	20.1%	14.8%	43.2%	23.9%	23.9%
Migration	31.7%	39.7%	20.4%	26.4%	25.4%

The impact of adolescents' activity profiles on their social and academic development

To facilitate analyses and interpretation of results, an overview of the means and standard deviations of all five profiles on each outcome is shown in Table 4. This table shows an overall decrease in all dependent variables between 5th grade and 7th grade, independent from the activity pattern. Nevertheless, there were differences between activity patterns: The culturally-oriented adolescents had the best GPA in 5th grade and 7th grade while the out-of-school and highly active adolescents had the lowest GPA. The out-of-school and highly active adolescents had the highest

mean of deviant behaviour. The jocks showed an increase in deviant behaviour between 5th grade and 7th grade. Prosocial behaviour decreased between 5th grade and 7th grade across all activity patterns. The out-of-school, highly active and culturally-oriented adolescents reported the highest level of prosocial behaviour in 5th grade and 7th grade. Even for cooperative behaviour culturally-oriented adolescents showed the most developed skills.

The next section focuses on how group identity influenced students' development over time or protected adolescents from a negative development in adolescence. More specifically, how activity profiles in the 5th grade influenced GPA, prosocial behaviour, deviant behaviour, and cooperative behaviour in 5th grade and 7th grade was analysed using regression models. All dependent variables were included as latent variables in the models. The reference group was the less active class. We controlled for SES, sex, migration background, school track in 5th grade. The cross-sectional analyses explained how the students' profiles differed in 5th grade but did not allow any conclusions to be drawn about the students' development. To look at this we regressed GPA, prosocial behaviour, deviant behaviour, and cooperative behaviour in 7th grade on the students' 5th-grade profiles, additionally controlling for the corresponding 5th-grade variables.

Table 4. Descriptions for all Dependent Variables According to Activity Profiles

Type of students' based extracurricular and leisure- time activity participation					Type of students' based extracurricular and leisure- time activity participation				
		M	SD	N			M	SD	N
GPA 5 th Grade	Out of sch.	3.05	0.71	293	GPA 7th Grade	Out of sch.	3.17	0.70	293
	Highly act.	2.93	0.75	408		Highly act.	3.15	0.72	408
	Cult.-ori.	2.43	0.69	933		Cult.-ori.	2.71	0.75	933
	Jocks	2.70	0.68	1300		Jocks	3.02	0.74	1300
	Less activ.	2.66	0.71	1324		Less activ.	2.95	0.74	1324
Deviant Behavior 5 th Grade	Out of sch.	1.77	1.16	293	Deviant Behavior 7th Grade	Out of sch.	1.80	0.91	293
	Highly act.	1.78	1.06	408		Highly act.	1.92	0.96	408
	Cult.-ori.	1.24	0.49	933		Cult.-ori.	1.61	0.77	933
	Jocks	1.45	0.70	1300		Jocks	1.88	0.91	1300
	Less activ.	1.38	0.70	1324		Less activ.	1.70	0.84	1324
Prosocial Behavior 5 th Grade	Out of sch.	2.93	1.14	293	Prosocial Behavior 7th Grade	Out of sch.	2.49	0.99	293
	Highly act.	2.85	1.03	408		Highly act.	2.44	0.89	408
	Cult.-ori.	2.72	0.88	933		Cult.-ori.	2.41	0.75	933
	Jocks	2.51	0.93	1300		Jocks	2.19	0.80	1300
	Less activ.	2.31	0.90	1324		Less activ.	2.17	0.78	1324
Cooperative abilities 5 th Grade	Out of sch.	3.44	0.71	293	Cooperative abilities 7th Grade	Out of sch.	3.21	0.72	293
	Highly act.	3.42	0.68	408		Highly act.	3.17	0.78	408
	Cult.-ori.	3.55	0.56	933		Cult.-ori.	3.34	0.66	933
	Jocks	3.45	0.64	1300		Jocks	3.23	0.69	1300
	Less activ.	3.30	0.75	1324		Less activ.	3.15	0.73	1324

Note: Test results of the differences between the means was significant ($p < .001$) for all variables.

No covariates were considered. Out of sch.=Out of school; Highly act.=Highly active; Cult.-ori.=Culturally-oriented; Jocks=Jocks; Less activ.=Less active.

Academic achievement/grades

Out-of-school and highly active students reported poorer grades in the 5th grade than the less active group of students. The culturally-oriented students showed significantly better academic achievement in the 5th grade. The jocks profile did not have a significant influence on learning outcomes in mathematics, German or a foreign language (Table 5). Students with a migration background had the poorest grades whereas female students, students in a higher school track, and those having a high SES had better grades. Longitudinal data analysis revealed that activity profiles did not influence academic achievement.

Table 5. Regression of Activity Profiles on GPA, the Reference Group Being the Less Active Adolescents

	GPA (5 th Grade) <i>b</i> (SE)	GPA (7 th Grade) <i>b</i> (SE)
Intercept	1.868 (.033)***	.651 (.050)***
Variance	.265 (.015)***	.139 (.011)***
Out-of- school	.278 (.041)***	-.058 (.032)
Highly active	.199 (.034)***	.006 (.030)
Culturally-oriented	-.109 (.028)***	-.034 (.022)
Jocks	.019 (.020)	.025 (.021)
Migration background	.154 (.028)***	.014 (.022)
Girls	-.174 (.020)***	-.065 (.017)***
Track (highest vs. other)	-.253 (.040)***	.038 (.034)
HISEI (centered)	-.006 (.001)***	-.022 (.001)***
GPA (5 th Grade)		.768 (.026)***
Chi ²		683.867***
CFI		.926
RMSEA		.055

Note: Data are unstandardized estimates with standard error (SE) in parentheses. GPA = grade point average a high gpa means low academic achievement.; CFI = comparative fit index; RMSEA = root mean square error of approximation. $n_{(students)}=5278$; $n_{(schools)}=211$; *** $p<.001$, ** $p<.01$, * $p<.05$.

Deviant behavior in school

Table 6 shows that students with an out-of-school or a high activity profile as well as those with a migration background reported more deviant behavior. Females, students with a high SES, and students in the highest school track reported significantly less deviant behavior (Table 6). Longitudinal analysis revealed that a jock profile in 5th grade was associated with deviant behavior in 7th grade. The other profiles were not related to any changes in deviant behavior in 7th grade compared to the less active students. Immigrant students' deviant behavior also increased between the

5th and 7th grades whereas girls and students with high HISEI values showed less deviant behavior.

Table 6. Regression of Activity Profiles on Deviant Behavior, the Reference Group Being the Less Active Adolescents

	Deviant Behavior in school (5 th Grade) <i>b</i> (SE)	Deviant Behavior in school (7 th Grade) <i>b</i> (SE)
Intercept	.726 (.031)***	.740 (.034)***
Variance	.433 (.033)***	.525 (.030)***
Out-of-school	.452 (.072)***	-.032 (.052)
Highly active	.342 (.047)***	.022 (.045)
Culturally-oriented	-.036 (.025)	.008 (.030)
Jocks	-.001 (.027)	.115 (.028)***
Migration background	.115 (.033)***	.107 (.035)**
Girls	-.280 (.024)***	-.213 (.028)***
Track (highest vs. other)	-.194 (.024)***	-.022 (.038)
HISEI (centered)	-.003 (.001)***	-.002 (.001)*
Deviant behavior (5 th Grade)		.0374 (.033)***
Chi ²		400.985***
CFI		.968
RMSEA		.030

Note: Data are unstandardized estimates with standard error (SE) in parentheses. CFI = comparative fit index; RMSEA = root mean square error of approximation. $n_{\text{(students)}} = 5278$; $n_{\text{(schools)}} = 211$; *** $p < .001$, ** $p < .01$, * $p < .05$.

Prosocial behaviour in school

Next, we analysed the prosocial behaviour of students in school (Table 7). First it can be seen that the students in each activity profile exhibited more prosocial behaviour in 5th grade than those in the reference group (the less active students). Furthermore, students with a migration background and girls reported more prosocial behaviour whereas students from the highest school track showed less. With reference to long-term development, culturally-oriented adolescents showed an increase in social behaviour, as did females and students with a migration background (Table 7).

Table 7. Regression of Activity Profiles on Prosocial Behavior, the Reference Group Being the Less Active Adolescents

	Prosocial Behavior (5 th Grade) <i>b</i> (<i>SE</i>)	Prosocial Behavior (7 th Grade) <i>b</i> (<i>SE</i>)
Intercept	1.251 (.031)***	.728 (.034)***
Variance	.359 (.026)***	.252 (.019)***
Out-of- school	.511 (.054)***	.063 (.044)
Highly active	.395 (.036)***	.044 (.033)
Culturally-oriented	.304 (.029)***	.068 (.025)**
Jocks	.183 (.024)***	-.009 (.020)
Migration background	.082 (.025)***	.113 (.022)***
Girls	.133 (.025)***	.071 (.019)***
Track (highest vs. other)	-.070 (.029)*	-.011 (.028)
HISEI (centered)	.000 (.001)	.001 (.001)
Prosocial behavior (5 th Grade)		.318 (.022)***
Chi ²		760.948***
CFI		.923
RMSEA		.035

Note: Data are unstandardized estimates with standard error (SE) in parentheses. CFI = comparative fit index; RMSEA = root mean square error of approximation. $n_{(students)}=5278$; $n_{(schools)}=211$, *** $p<.001$, ** $p<.01$, * $p<.05$.

Cooperative behavior

The impact of the activity profile on cooperative behaviour is reported in Table 8. Similar to prosocial behavior, all activity profile groups of students had greater cooperative behavior than the reference group. Being a girl was related positively to cooperative behavior. The development of cooperative behavior from the 5th grade to the 7th grade was influenced positively by the culturally-orientated and jock profiles. Also, females and students in the highest school track showed an increase in their cooperative behavior.

Table 8. Regression of Activity Profiles on Cooperative Behavior, the Reference Group Being the Less Active Adolescents

	Teamwork (5 th Grade) <i>b</i> (SE)	Teamwork (7 th Grade) <i>b</i> (SE)
Intercept	2.197 (.029)***	1.282 (.059)***
Variance	.397 (.017)***	.407 (.016)***
Out-of-school	.120 (.049)**	.057 (.044)
Highly active	.125 (.040)**	.002 (.039)
Culturally-oriented	.215 (.028)***	.069 (.026)**
Jocks	.173 (.029) ***	.082 (.025)***
Migration background	-.053 (.025)*	-.035 (.027)
Girls	.131 (.021)***	.198 (.021)***
Track (highest vs. other)	.059 (.027)*	.127 (.031)***
HISEI (centered)	.000 (.001)	.000 (.001)
Teamwork (5 th Grade)		.304 (.021)
Chi ²		70.976***
CFI		.997
RMSEA		.012

Note: Data are unstandardized estimates with standard error (SE) in parentheses. CFI= comparative fit index; RMSEA= route mean square error of approximation. $n_{\text{(students)}}=5278$; $n_{\text{(schools)}}=211$;

*** $p<.001$, ** $p<.01$, * $p<.05$.

Discussion

This paper adds to earlier research on the effects of extracurricular involvement on students' development by taking into account various extracurricular and leisure activities in and out of school. Results of our LCA showed that participation in one activity was related to participation in other activities or it reduced the probability of engagement in other activities. Five different activity engagement profiles were identified in our sample: out-of-school, highly active, culturally-oriented, jocks and less active. These patterns strongly resemble those found by Bartko and Eccles (2003). Thus, we assume that patterns of activity participation in Germany resemble the ones found in American studies. The same is true for predictors of participation patterns: Gender effects were identified in connection with activity patterns, a finding which is in line with earlier research (e.g., Eccles & Barber, 1999; Barber et al., 2005; Simpkins et al., 2005). Males were overrepresented in the jock pattern while females tended to participate more in culturally-oriented activities. Second, we found a connection between SES and activity patterns: culturally-oriented adolescents were mostly from high SES families as were those in the highest school track (Gymnasium). Out-of-school and highly active students were represented less in the highest school track and had a lower SES (Table 4).

Compared to findings from other studies (e.g., Bartko & Eccles, 2003; Peck et al., 2008; Zarrett et al., 2009) these results were surprising. In studies conducted in the United States high levels of engagement in extracurricular activities were associated with a higher SES and greater enrolment in college while disadvantaged students were overrepresented in patterns of little activity (Zarrett, 2007; Zarrett et al., 2009). Our results showed that students in the highest school track and with high SES were overrepresented in a culturally-oriented activity pattern and underrepresented in profiles of high levels of engagement in activities (out-of-school and highly active adolescents). One explanation for this could be that students in a German Gymnasium have more lessons at school, spend more time on learning and therefore probably have limited spare time to participate in many extracurricular activities. Furthermore, being in the highest school track and having a high SES are linked. However, adolescents from low income families participate more in community centres and adolescent service organizations (Simpkins, Ripke, Huston, & Eccles, 2005; Posner & Vandell, 1999). In Germany, many out of school activities are offered in adolescent centres. For example, adolescents can join music sessions for free in an adolescent centre or they can attend a music school, which is often quite expensive. Unfortunately, our data does not allow us to differentiate between such students as they were merely categorized as participating in a musical activity or not. This also holds true for students participating in sporting activities.

Generally students in our sample developed negatively between the 5th grade and the 7th grade (Table 4). But regression analysis show that this negative development could decrease or increase in its amount with regard to the activity patterns of students. Therefore our results suggest that extracurricular activities have the potential to protect adolescents against a negative development in adolescence which is in line with the assumptions of American researchers (Barber, Stone, Hunt, & Eccles, 2005; Larson, 2000, 2011; Eccles & Roeser, 2011; Larson, 2000, 2006, 2011; Larson, Hansen, & Moneta, 2006; Hansen, Larson, & Dworkin, 2003; Larson, Perry, Kang, & Walker, 2011) as well as German results on school-based extracurricular activities in all-day schools (Fischer, Kuhn & Züchner, 2011).

In summary, the results of the regression analyses showed that in contrast to less active students, those in the out-of-school and the highly active groups obtained rather low grades and reported more deviant behaviour but more prosocial and more cooperative behaviour in the 5th grade. Here, our results contradict findings from Feldman and Matjasko (2007), who reported a positive connection between participation in multiple activities and good grades. A possible explanation could be that highly active students in our sample were not focused on academic success. Most of them were not in the highest school track and therefore would not be attending university after school. Our data indicated that the out-of-school and highly active adolescents had higher levels of social competencies in the 5th grade. The decision to participate in extracurricular activities depends on several factors at the personal and the environmental levels (Mahoney et al., 2009; Barber et al., 2005). Informal educational settings require students to be able to cooperate, listen to other's opinions and speak for themselves (Sturzenhecker, 2004). Considering this, our finding that cooperative behaviour and prosocial behaviour are two important factors for participating in diverse extracurricular settings can be clearly explained. Not only

cooperative behaviour and prosocial behaviour are more common among adolescents in the highly active and the out-of-school groups, but deviant behaviour (in school) is also more frequent in these groups. At first glance, these results seem to contradict earlier research (e.g., Eccles & Roeser, 2011). However, in this study the items used to measure deviant behaviour only assessed the deviant behaviour of students at school, for example making fun of someone in the classroom. Other questionnaires employed to gather data on this subject have assessed dangerous and violent deviant behaviour out of school (Eccles & Barber, 1999).

The highly active group was not the only group associated with better social competencies. Culturally-oriented adolescents had better grades and reported a high level of prosocial and cooperative behaviour in the 5th grade. Being culturally-oriented also was associated positively with the development of prosocial behaviour and cooperative behaviour up to grade 7. The culturally-oriented students developed these skills more than the less active students. While both groups reported a decrease in prosocial behaviour (Table 5), the results imply that being culturally-oriented only had a protective effect against a decrease in prosocial behaviour. Thus, culturally-oriented adolescents did not decrease in their prosocial and cooperative behaviour in a way that the less active students did.

The findings mentioned above also apply to the jocks, which showed more prosocial and cooperative behaviour in grade 5 and a more favourable development of cooperative behaviour than the less active adolescents. However, the jocks also showed an increase in deviant behaviour. Considering the fact that in sports and cultural activities adolescents have more opportunities to meet other students and that success in these activities often depends on the abilities and teamwork of the whole group, it is not surprising that the cooperative behaviour of the jocks decreased less between the 5th and 7th grades. The tendency for adolescents participating in sports to exhibit more deviant behaviour also has been described in previous research and this effect is mediated by peers in sports activities (e.g., Eccles & Barber, 1999; Bartko & Eccles, 2003; Blomfield & Barber, 2010). The less active students showed lower rates of prosocial behaviour and cooperative behaviour in the 5th grade only. Regarding their development, they did not differ from students in the out-of-school or highly active groups. These results indicate the importance of gathering information on how students spend their leisure time. Less active adolescents were not necessarily inactive; rather their participation rates were lower than those of adolescents in other groups. Above the knowledge that some met friends in their free time, we had no further information. These students might have had a job after school, had to take care of younger siblings, had to help their parents, or had to do additional homework with or without peers, or they might simply have watched television. All these activities can influence a student's social behaviour, thus the lack of information is a limitation of this study. On the one hand the development of the less active students is critical only in comparison to the culturally-oriented students and the jocks. The development of less active adolescents seemed to be similar to the out-of-school and the highly active adolescents but on a lower level. On the other hand they obtained better grades; therefore, they cannot be considered "at risk students".

Limitations and future research

There are a few limitations to this study which could be managed in future research. As stated above, there was a lack of knowledge about how the less active students used their free time. Future research should investigate in greater detail the extracurricular activity patterns of such students. Moreover, it would be worth knowing why students participate in certain extracurricular activities and avoid doing others. Also, all of our dependent variables except cooperative behaviour referred explicitly to a school context. This is true for prosocial behaviour and deviant behaviour. Thus, it is possible that the students' behaviour out of school differs from their behaviour in school. Hence, further studies should inquire about students' behaviour out of school. Finally, all of these variables underlie confounding factors such as social desirability and acquiescence, and are not comparable to objective tests used to assess knowledge of and skills in mathematics, science and reading. Therefore, future research could take into account different points of view on students' social behaviour by interviewing teachers, pedagogues, and parents, and/or using ratings by external observers.

Conclusion

The results presented in this paper indicate that five profiles of adolescents can be distinguished based on their extracurricular engagement, which is in line with previous research. Our data enabled us not only to describe patterns of students' extracurricular engagement but also to link them to the students' development in social behaviour and academic achievement. Our findings underline how participating in several extracurricular activities and combining various activities has an important influence on this development. Furthermore, our results confirm that participation in extracurricular activities, SES and gender are interlinked, which has also been shown in previous studies. Although the students in this sample were younger than those in samples of previous research, the resulting activity patterns and most of their predictors are comparable (Bartko & Eccles, 2003; Eccles & Barber, 1999; Peck et al., 2008; Zarrett et al., 2009).

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