

# **Classical Music at a German Inner-City School: The German Philharmonic Chamber Orchestra Bremen at Comprehensive School Bremen East<sup>1</sup>**

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## **ARTICLE INFO**

**Available Online December 2013**

**Key words:**  
classical music;  
school;  
inner-city school;  
art education;  
evaluation;  
boys.

## **ABSTRACT**

The *German Philharmonic Chamber Orchestra Bremen*, a world famous orchestra for classical music, and the Comprehensive School Bremen East, a school in a deprived area, in North American terms an inner-city school, are cooperating since 2007. A three-year follow-up evaluation study was conducted to find out, if projects facilitated by the presence of the orchestra have a positive impact on the self-reported well-being and the grades of students. Results showed that involvement in the projects distinctly benefited boys: They experience a better class climate and a higher satisfaction with school as well as improved German grades.

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## **Introduction**

In 2007, the German Philharmonic Chamber Orchestra Bremen (German abbreviation: DKB for Deutsche Kammerphilharmonie Bremen<sup>3</sup>) moved to the Comprehensive School Bremen East (German abbreviation: GSO for Gesamtschule Bremen-Ost). The school is located in the East of the German city of Bremen. Bremen has well over half a million inhabitants and is the 10th largest city of Germany. The school district would be characterized as an inner-city district in North American terms, although geographically it is not situated in the center of the city, but rather on its Eastern outskirts. Its population is highly deprived in socio-economic terms (Farwick, 2003). Since 2007, the world famous orchestra has its only rehearsal and concert hall at the school. The orchestra and the school use this unique collocation, to conduct multiple pedagogical projects. Students, for instance, can visit the rehearsals of the famous orchestra, where they are even allowed to take a seat amongst the musicians, getting in closer contact with their play and the details of a rehearsal. A music show, which takes place twice a year, is also organized. In this show, called Melodie des Lebens (Melody of Life), students and musicians perform together on stage. Furthermore, an annual theater play takes place in the district. It is planned and performed by some hundred participants: students, teachers, musicians, external cultural experts, and local citizens. To accommodate for the large proportion of students with a migration background, the play has its focus on a different country or culture every time: In 2009 the topic was Faust II, reflecting German culture, in 2010 it was Africa is Coming (Africa, with an emphasis on Ghana), in 2011 Polski Blues (Poland), and in 2012 Iolanta ("A neighborhood opera").

## **Aims of the Study**

We wanted to find out, if involvement in these projects had transfer effects. More precisely: Do students report a more positive class climate as a result of their involvement in the projects? And, do they also report a higher satisfaction with the school? Additionally we wanted to analyze, if students engaged in fewer (violent) fights as a result of the projects, and, last but not least, whether the pedagogical projects positively impacted grades in German. For all questions, we also checked effects of gender and socioeconomic background.

Teachers (in 2007) and parents (in 2010) were also included in the study, but these data are omitted from the current report, in their own right. Parent data are only utilized in analyses of student data as a proxy for parent interest in DKB activities by using their participation in the parent survey (yes/no) as a variable.

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<sup>1</sup> Funding for the study was provided by Jacobs University Bremen and by Robert Bosch Foundation. The material presented in the current paper has been presented at the Second Conference on Creative Education in Shanghai, May 2012. The first author conducted the research under the supervision of the second author. The first author is now affiliated to the German Association for Psychodynamic Psychotherapy, Training Center Psychotherapy (ZAP), Bad Salzuflen, Germany.

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<sup>3</sup> <http://www.kammerphilharmonie.com/en/Portrait.html>

### Samples

In 2007 and 2010 we conducted a questionnaire-based evaluation study at the school, which then resembled a junior high school in North American terms, encompassing Grades 5 through 10. We interviewed 772 students in 2007, some 90 percent of the students, who attended the school in that year. In 2010, we interviewed 767 students. This were some 60 percent of the students, who attended the school at that time (the school had been expanded to a regular high school in 2008, from then on also encompassing Grades 11 through 13; some 1300 students attend the school every year since then). The follow-up core sample of study participants who were interviewed twice (in 2007 and 2010) comprised of N=359 students. We were able to interview 81 percent of the students for a second time, who attended the school in both in 2007 and 2010.

The results we are presenting here are the findings for the core follow-up sample; 56 percent of these students were girls (n=201) and 44 percent were boys (n=158). In 2007, the students were between 9 and 17 years old; 44 percent of them had a migration background. As for the parents of the core sample, for 45 percent of the students at least one parent participated in the 2010 survey, for 55 percent no parent participated.

### Indicators and Methods

For the sake of brevity and practical conclusiveness, we omit most technical details concerned with scale construction and analytic strategies. A voluminous German language research report is available from the authors for readers interested in details (Boehnke, Musiol, & Dragolov, 2011).

Our involvement indicator expressed the degree of participation in the projects and how much students liked them. We constructed it by z-standardizing and summing up items that indicated in which projects the students had taken part and if they had liked the projects.

Social status was assessed by asking the students how many cars and computers their family owned, how often they had taken a holiday trip in the year prior to the survey, and if the respondent had a room of his/her own in the family residence. Again, after an appropriate standardization of the replies, we divided students into three status groups, the upper quarter, the middle 50 percent, and the lower quarter. Readers should be reminded that we are dealing with a relative assessment of the socioeconomic background of the participants. If somebody is categorized, for example, as belonging to the high status group, this means that he or she belongs to the relatively well-to-do in a poor district of the city of Bremen. Compared to the "normal" population of Bremen, students in that status group are by no means rich. Conversely, we can say, though, that if a student is categorized as coming from the low status group, he or she is poor in objective terms, though in a society (Germany) that is, of course, quite rich in global terms.

The indicator class climate was constructed on the grounds of items, which indicate the subjectively experienced frequency of conflicts, like "There is a conflict in my class at least once a week" (reversed) or "We get along in our class," and items indicating the subjective well-being in the class, like "Most of the students in my class are nice and helpful."

The satisfaction with school indicator was constructed on the grounds of items like "I like going to school" and "I like my teachers."

Participation in fights was only measured by one item "Have you participated in a fight since the beginning of the new school year?"

As for grades, we asked students to report their most recent grades in German, math, music, and PE, but for further analyses we only used the German grade on empirical grounds: No impact could be corroborated for math, music, and PE.

Of course, gender and age, were also obtained from study participants. Both these variable play an important role in our analyses: Gender serves as an important moderator variable, i.e., we check for differential effects of involvement in DKB projects between girls and boys. Age serves as a decisive covariate. The junior high school years are often seen as the years of "storm and stress" (Molloy, Ram, & Gest, 2011). It is hotly debated to what extent they are. We do not take sides in this debate, but acknowledge the importance of age as a concomitant variable of change. As age surely plays a role with regard to school satisfaction, class climate evaluations, participation in fights, and grades, but as—at the same time—age-related change is not at the core of our interest, we partial it out in all our subsequent analyses. Just to show that such a step is indeed necessary, we briefly document the curvilinear cross-sectional variation of school satisfaction with age in our core sample in 2007 (Fig. 1).

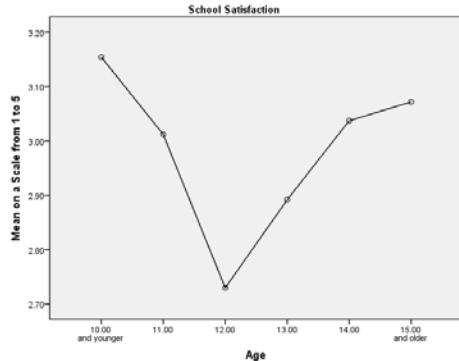


Figure 1: School Satisfaction 2007 by Age

For our analyses we used structural equation modeling (SEM) with manifest variables. Using AMOS19 (Arbuckle, 2010) we attempted to carve out causal relationships to the degree possible in non-experimental follow-up studies. The model depicted in Fig. 2 documents the approach our analyses have taken: Our ultimate dependent variable is the degree of positivity in the appraisal of the class climate in 2010, taking into account the positivity of this appraisal in 2007, the DKB involvement in 2007 and 2010, and the student's age (acknowledging that age, involvement, and the appraisal of the class climate are correlated already in 2007).

By testing this model, we can detect how the involvement and the change therein affects change in the subjective appraisal of the class climate. We only report statistically significant results. All results reported are taken from analyses that exhibited a good to excellent goodness-of-fit, but as mentioned above, we refrain from reporting these data here in order not to blur the substantive picture with technical detail. Interested readers can obtain index scores from the authors.

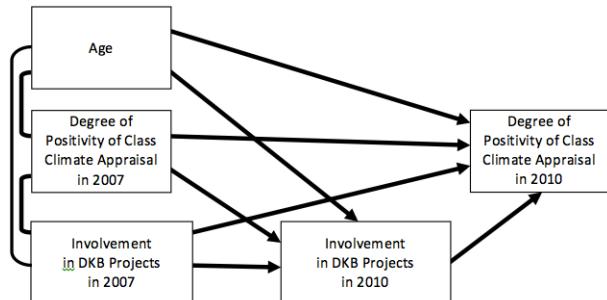


Figure 2: Model Tested in the Study of Consequences of Involvement in DKB Projects for the Appraisal of Class Climate

## Results

Before we go into details of reporting our results, we should give a short reading aid. In the subsequent figures we report results from our SEM analyses. Coefficients in the figures are so-called standardized  $\beta$ -coefficients, which can be interpreted in their sizes like correlation coefficients. They vary from -1 for a perfect negative relationship (high scores of one variable predict low scores on the other variable) to +1 for a perfect positive relationship (high scores on one variable predict high scores on the other variable). Unlike correlation coefficients,  $\beta$ -coefficients reflect pure relationships, i.e., they are statistically partialled for possible interrelations with further variables. In addition to documenting  $\beta$ -coefficients, we also plausibilize strengths of effects by adjusting the breadth of the paths between variables to their strength. This means that broader strokes of the paths reflect stronger relationships, proportional to the size of the  $\beta$ -coefficients also reported. If there is no path between two variables this expresses that there was no significant relationship.

### The DKB and the Change of Class Climate at the GSO

Without further ado, a striking result first: The interviewed girls did not take any class-climate-related advantage of the projects, with girls and boys not differing significantly in the positivity of their appraisal of their class' climate. Girls liked the projects in general, even more than did boys, but they did not experience a more positive class climate as a result of their involvement of the projects (Fig. 3).

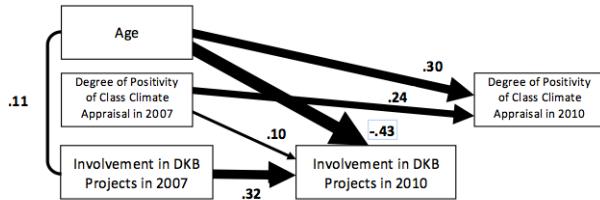


Figure 3: Consequences of Involvement in DKB Projects on Class Climate among Girls

In contrast to the result for girls, we found that boys did benefit from the projects. When they were involved in the projects, they reported an improved subjective class climate (Fig. 4).

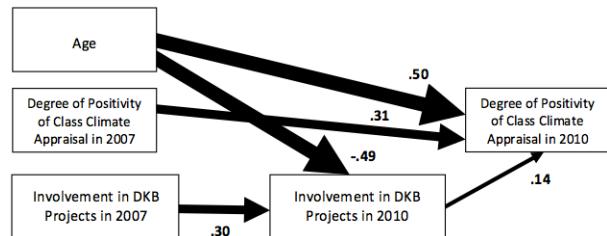


Figure 4: Consequences of Involvement in DKB Projects on Class Climate among Boys

The gender puzzle in our results motivated us to further analyze the boys' data by including the socioeconomic status (SES) variable as a moderator: Does the positive impact of DKB involvement among boys vary according to SES?<sup>4</sup>

Compared to the other students, boys from the highest SES group<sup>5</sup> did not report a change of their perception of the class climate when involved in the projects (Fig. 5). This result is similar to that of girls.

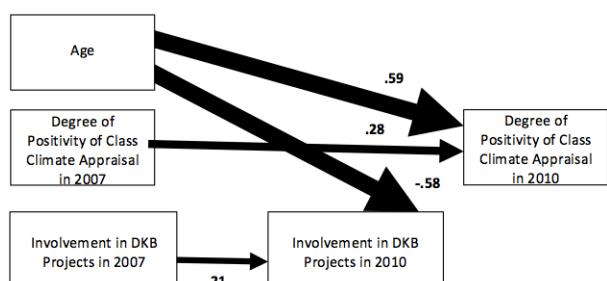


Figure 5: Consequences of Involvement in DKB Projects on Class Climate among Boys from the Highest SES Group

However, compared to the other students, boys from the middle SES group did benefit strongly from involvement in DKB projects: When they were involved in the projects, they experienced a much improved class climate (Fig. 6).

<sup>4</sup> For girls it does not!

<sup>5</sup> Always note that SES categorization is *within* the sample and that *all* participants are from a relatively poor inner-city district.

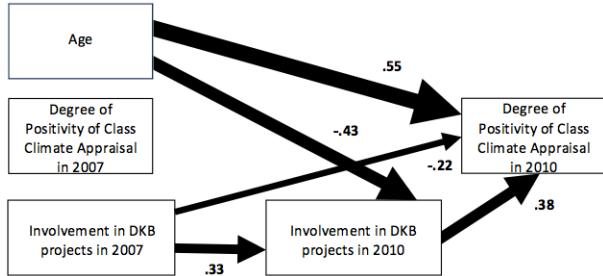


Figure 6: Consequences of Involvement in DKB Projects on Class Climate among Boys from the Middle SES Group

However, involvement in DKB projects does not uniformly seem to be beneficial even for these boys. If we split the group of average SES boys into those whose parents did not participate in the parent survey (and thus seem to be less interested in what their children do at school), it is exactly those boys who benefit (Fig. 7), whereas there is no particular benefit among those middle SES boys, whose parents did participate (Fig. 8).

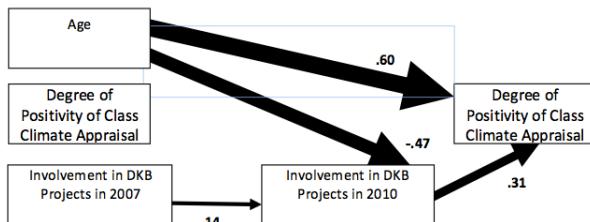


Figure 7: Consequences of Involvement in DKB Projects on Class Climate among Boys from the Middle SES Group (no parent participation)

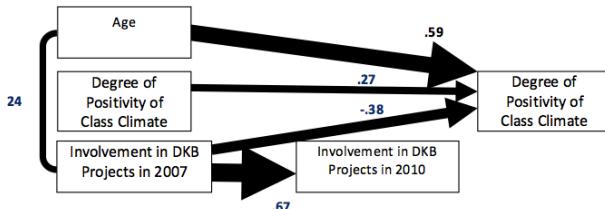


Figure 8: Consequences of Involvement in DKB Projects on Class Climate among Boys from the Middle SES Group (with parent participation)

Contrary to findings for the middle SES group, we found that boys in the lowest SES group, i.e., boys with a 'real' poverty background, did not benefit from participation in DKB projects (Fig. 9). When they were involved in the projects, the positivity of their appraisal of the class climate went down. The appraisal of class climate among these youth stayed extraordinarily stable ( $\beta=.65$ ).

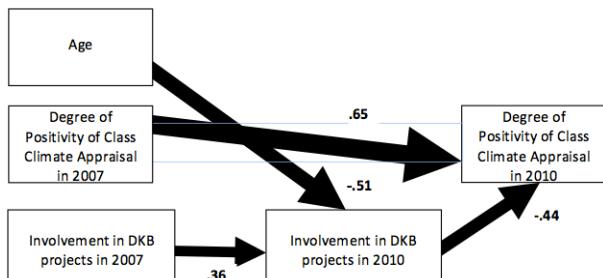


Figure 9: Consequences of Involvement in DKB Projects on Class Climate among Boys from the Lowest SES Group

When we attempt an interim conclusion and put our looking glass at different distances, so-to-speak, we can summarize that, in general, boys benefit, but not girls. This may at first glance look as an appalling genderedness of the project's success, but after second thoughts one may even be happy about the finding: Boys from inner-city schools typically are a more-at-risk group than are girls (Strand, & Winston, 2008). If they (but not girls) benefit, the better!

A closer look at boys makes further qualifications necessary: It is not all boys who benefit. The main profiting group are those boys who come from the middle SES group of the inner-city district of Bremen, where the school is situated, mostly so if their parents have little interest in what goes on at school. So, for these boys the DKB projects seem to have a dual remedial function: A more-at-risk group (boys) from less favorable family contexts (Wilkerson & Kim, 2010) benefits most. However, there also is a highly vulnerable group for whom involvement in DKB projects is detrimental: Boys from particularly poor families. We will come back to this group later.

### **DKB Projects and Other Success Indicators**

The following section sets out to cross-validate the findings presented so far by using other success indicators, namely school satisfaction in general, satisfaction with peers, involvement in violent fights, and grades (in German). We refrain from reiterating findings of non-significance that corroborate non-significant findings of the analyses reported above, but highlight findings that support our interim conclusion as far as concerned with statistically significant findings about the impact of involvement in DKB projects.

Table 1 documents  $\beta$  coefficients from analyses that were conducted exactly as the ones documented in the previous section. This time, however, we only report the 'decisive' coefficient, namely the one that addresses the predictability of the dependent variable on the grounds of involvement in DKB projects in 2010. Readers should recall that the tested structural equation model is not one where this coefficient stands for a correlation, but a significant coefficient suggests that the change in the dependent variable was brought about by the change in involvement. In more simple terms it suggests that increased involvement 'did the trick.'

Table 1. The Impact of Involvement in DKB Projects on Several Success Indicators among Boys

Dependent Variable	Upper SES Group	Middle SES Group	Low SES Group
General School Satisfaction	$\beta=.17$ $p=.115$	$\beta=.38$ $p=.004$	$\beta=-.43$ $p=.004$
Satisfaction with Peers	$\beta=.34$ $p=.052$	$\beta=.46$ $p<.001$	$\beta=.06$ $p=.793$
Involvement in Violent Fights	$\beta=-.35$ $p=.043$	$\beta=-.16$ $p=.184$	$\beta=-.05$ $p=.763$
German Grade <sup>a</sup>	$\beta=.16$ $p=.362$	$\beta=-.30$ $p=.016$	$\beta=-.26$ $p=.179$

Notes   <sup>a</sup> Grades given at German school vary between 1 (outstanding) to 6 (failing beyond hope), so numerically the relationship must be negative to signal a positive involvement impact

The table documents that with regard to other success indicators (beyond class climate), boys from the upper SES segment in the inner-city district of the school benefited with regard to involvement in violent fights: Involvement in DKB project significantly predicted a reduced involvement in violent fights ( $\beta=-.35$ ). A marginally significant increase in satisfaction with peers was also found in this group of boys as a consequence of DKB involvement. For the middle SES group of boys, three out of four tests were significant. Involvement in DKB projects positively impacted general school satisfaction, satisfaction with peers (most strongly so), and grades in the subject 'German'. For involvement in violent fights no effect was found. For the low SES group, the 'really' poor students, one effect was significant: Their general school satisfaction went down considerably ( $\beta=-.43$ ).

<sup>6</sup> It may be worth noting that for girls from the same SES group who were highly involved in 2007 but decreased their involvement later, German grades worsened between 2007 and 2010.

All in all, our validation analyses corroborated the finding that boys from the middle SES group benefitted from involvement in the DKB projects in particular. Boys from the relatively (!) most well-to-do group also benefitted occasionally; their physical aggressiveness obviously went down. Boys from the lowest SES group, however, never benefitted (on whichever indicator). On the contrary, for general school satisfaction involvement in DKB projects once again proved detrimental.

### **Discussion**

When we subsequently discuss our findings, certain provisos are in place. Although our study was highly ambitious and successful with regard to participation rates and attrition rates, we must remind readers that it is not an experimental study (no randomized assignment to groups, no control group). Our findings, thus, can at best show that change did take place and that the involvement in DKB project covaries with positive change for certain groups of students; it cannot offer proof that the success of the intervention can causally be attributed to classical music being brought to an inner-city school. Readers should take this cautioning remark into account at all times.

Let the discussion turn to ‘non-results’ first: Girls did not benefit from participation in DKB projects with regard to any of the chosen success indicators. Readers will ask why this was the case. We have to resort to speculations here. Stereotypically one might presume that non-pop music in and by itself is a more ‘feminine’ domain in an inner-city district and that it is something more ‘out of the ordinary’ for boys. Thus, if girls get involved, the involvement may resonate less deeply than it does for boys, who engage in something utterly unusual for them. But—as said—we have to remain purely speculative here.

Turning to boys one can get the impression that those boys who stereotypically might be the least “masculine” boys, namely those from relatively well-to-do families (Wolfgang & Ferracuti, 1967) benefit little from involvement (almost as little as girls). They increasingly refrain from participating in violent fights (like girls do anyway), but beyond this finding, no further positive effects could be corroborated.

Boys from average SES families from the inner-city district of the school clearly benefit most. Predictable on the grounds of their degree of involvement in DKB projects their appraisal of the climate in their class improves, they report increasing general school satisfaction, they become more satisfied with their peer relations, and their grades in German improve. This clearly is all but a trivial finding: Inner-city school boys from families typical for the district seemingly get their kicks from becoming involved with classical music!

There also is a necessity to pour water into the wine, however: Boys from the most disadvantaged families not only do not benefit, but for them a detrimental effect emerges. The more they get involved in DKB projects, the more negatively they evaluate the climate in their class and their general satisfaction with school. Once again, we only can speculate as to the reasons for this finding. We presume that a contrast effect is at work here. Boys from the lowest SES group like DKB projects no less than other boys, so, the projects not being geared towards their needs obviously is not a valid interpretation. What seems more plausible to us is that in light of a positive experience in extracurricular activities with the DKB, they experience every-day life, so-to-speak, in class yet more dreadful than they do anyway. But, once again, this is admittedly a speculation.

Now that positive effects of bringing classical music to an inner-city school could be corroborated at least for important subgroups of the student body, new attention needs to be focused on—psychosocial—processes that bring about the positive effects (and of course the negative effects for the most disadvantaged boys). From the parent survey that we have omitted in its substance from the present report, it became obvious that ‘home’ variables seemingly are not at the core of the effects found. Multi-level analyses that take into account properties of school classes as an aggregate are planned. Another entry point into a better understanding of the processes that make the success of the project possible for a larger group of students might be social network analyses. However, such data are not available yet. This lack speaks for another wave of data gathering.

In an overall summary, we can ascertain that we know from the present study that bringing world class classical music to an inner-city school does have positive repercussions, but why this is the case and how involvement finds its way into the well-being of students still remains largely a black box.

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