

# Is gender role self-concept a predictor for music class attendance? Findings from secondary schools in Lower Saxony (Germany)

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## Abstract

Although there is an increasing number of studies investigating the effects of attending music programs and classes, research on the impact of gender role self-concept on the decision to attend music classes is limited. Current research highlights the significance of gender role self-concept in decision-making processes. Accordingly, we conducted path analysis on a sample of  $n = 353$  fifth-graders to identify interrelations and mediation effects of students' gender role self-concept on the attendance of a specific music class through the self-concept in music, intrinsic value of music, and other relevant aspects. The results showed that only gender role self-concept of femininity revealed direct effects on attending a music class. Students describing themselves as feminine had a more positive self-concept in music and value music more. No mediation effects could be detected. However, a negative direct path from gender role self-concept of femininity on music class attendance was observed. No effect was found for gender role self-concept of masculinity and music class attendance. The intrinsic value for music showed the highest impact on music class attendance. After discussing the main results, recommendations for researchers, teachers, and school administrators are made with regard to an accessible music education, which is independent of gender role orientations.

## Keywords

*gender, instrumental learning and teaching, gender role self-concept, school education, stereotypes*

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In the past 20 years, the number of classes with a special emphasis on music (e.g., brass, string, or orchestra) has been increasing steadily in many European countries (Göllner, 2017; Koivuhovi et al., 2017; Nonte, 2013). In Germany, these classes are part of the school program and can be chosen on a voluntary basis for at least 1 year. In these classes, students usually attend at least one extra music lesson per week. They receive instrumental tuition in small groups and experience musical performance within the entire class. These classes are popular with students as well as parents, and the level of participation is generally high (Eder, 2011; Göllner, 2017; Nonte, 2013). Even though there is an increasing number of publications and research about the effects of attending music programs (e.g., McKeage, 2004) and music classes (Abeles, 2004; Costa-Giomi, 2004; Hallam & Rogers, 2016; Hodges & O'Connell, 2005), there is only a little research on the reasons for these choices. In particular, information on the interplay between students' gender role identity, and the decision to attend a brass, string, or orchestra class is limited. The aim of the article is to contribute to filling this research gap. Moreover, this type of research enables us to identify indicators that can minimize gender differences in access to musical offers in the school context. After giving a brief overview on theoretical assumptions and research literature available, we conduct manifest path analysis to examine the relationship between gender, the gender role identity, and the choice to attend a class with a special emphasis on music tuition.

### *Theoretical background on task and class choice*

Many studies investigate school choice behavior (e.g., Wilson, 2016). However, little is known about how specific classes, such as music classes, are chosen. Research on school choice behavior suggests the decision-making process of parents, students, and teachers is influential (Wohlking & Ditton, 2012).

It can be assumed that the decision to attend a class with a specific music profile also depends on personal preferences, attitudes of significant others, and the individual self-concept and interest in music. In general, the self-concept describes a person's perception of himself or herself. Moreover, it is defined as hierarchical and multifaceted (Shavelson et al., 1976). Various facets like the physical self-concept, academic self-concept, or self-concept in music form a person's overall self-concept. Eccles and Wigfield (2002) investigated the influence of task values on course choices pointing out that the anticipated consequences must be considered important enough to increase the likelihood of undertaking it.

In international music educational research, Expectancy-Value (EV) theory is the most popular and established theory (Lowe & Coy, 2016) to investigate students' motivation in the context of learning and music performance (e.g., Bernabé-Valero et al., 2019; Cogdill, 2015; McCormick & McPherson, 2007), their enjoyment and perception of the importance of the subject as well students' interest and self-competence in music (e.g., Tossavainen & Juvonen, 2015). Wigfield and Eccles' (2000) EV theory comprises expectancy and task value as separate but related factors which can be regarded as predictors for students' task choices, their attainment, and their persistence. Expectancies and values are positively related to each other and are influenced by the perception of competence, individual goals, interest, and self-schema (Eccles & Wigfield, 2002). However, there are empirical findings indicating that the value component is more closely related to choices in academic domains than the expectancy component (Eccles & Wigfield, 2002). Nagy et al. (2006) summarize that in line with the EV model, both subject-specific self-concept (expectancy of success) and subject-specific interest (intrinsic value) affect course choice. Regarding this, gender-specific differences have been observed.

### *Gender differences and stereotyped behavior—current state of research*

According to Wigfield et al. (1997), gender differences in children's competence beliefs and subjective task values occur "particularly in gender-role-stereotyped domains" (p. 453). When it comes to a comparison of the value of music as a school subject and competence beliefs in music between boys and girls in secondary schools, girls tend to report higher values in both aspects (McPherson et al., 2015; McPherson & O'Neill, 2010). Apart from a binary perspective on gender differences, more and more researchers highlight the relevance of considering gender as the more differentiated and adequate construct to describe differences in attitudes and actions in stereotyped domains (e.g., Heyder & Kessels, 2013; Wolter & Hannover, 2016). Lindsey (2015) states that "gender refers to those social, cultural, and psychological traits linked to males and females through particular social contexts" (p. 4). Both gender role identity and gender role self-concept are often used interchangeably and can be understood as a self-perceived similarity to gender stereotypes (Egan & Perry, 2001). It is noteworthy that gender role identity and biological sex are not necessarily identical.

Eccles et al. (1993) found that boys feel more confident in mathematics and sports whereas girls feel more confident in instrumental music. Girls also appreciate instrumental music more than boys do (Eccles et al., 1993). Generally, boys perceive "softer" music activities—like singing, playing an orchestral instrument, or engaging in classical music—as feminine and many of them feel that these music activities cannot be incorporated into their masculine role repertoire (Green, 2002; Hall, 2005; Harrison, 2007; McGregor & Mills, 2006; Warzecha, 2013). In contrast, girls who describe themselves as feminine are more likely to name music as their favorite subject (Kessels, 2005). They also tend to feel uncomfortable with louder or electronic instruments, which are associated with popular music, whereas boys (often in non-formal contexts) are interested in popular music that is characterized as loud or upbeat (Abramo, 2011; Green, 2002; Harrison, 2005). These gender differences can be found in various countries and contexts (e.g., Hanley, 1998; McPherson et al., 2015; McPherson & O'Neill, 2010). In this context, researchers and practitioners observed a lack of boys' participation in music programs, particularly in singing and instrumental tuition, evident from an early age (Bennetts, 2013; Hall, 2005; McGregor & Mills, 2006). Therefore Koza (1993) refers to "the missing males problem" (p. 219).

In this regard, Wills (2005) states that there has been very little change in gendered attitudes toward music or in breaking down stereotypical attitudes. Green (2002) thus notes that schools contribute to reproducing definitions of femininity and masculinity as connotations of various musical practices and musical styles practices. Research on instrument choice also shows the effect of gender stereotypes, with females liking to play the flute, violin, and clarinet best, whereas male students like to play the drums, trombone, and trumpet best (Abeles & Porter, 1978; Delzell & Leppla, 1992; Harrison, 2005; O'Neill & Boulton, 1996). More recent findings indicate that instrument gender stereotypes persist and continue to pose major challenges to music educators (Wrape et al., 2014; Wych, 2012). Nevertheless, girls are more likely to choose gender-atypical instruments in the band-context than boys are (Abeles, 2009) and young inexperienced musicians are more open in their choice of instruments than older musicians are (Wrape et al., 2014). Therefore, more systematic interventions by music educators and accompanying research are needed in order to reduce gender bias (Abeles, 2009; Wych, 2012). Hoffman (2008) points out the lack of knowledge regarding instrument choice behavior in school contexts. She acknowledges that there are currently more questions than answers like "why do some students aim to conform to assumed

gender roles within the music classroom while others view the learning space as an invitation to explore or ‘discover?’” (p. 10).

In general, pressure from peers of the same sex can be tremendous when it comes to decision-making, especially in stereotyped domains. Here, boys seem to be more easily influenced by others because they perceive a stronger pressure for gender conformity (Bos & Sandfort, 2010; Egan & Perry, 2001; Hartmann & Trautner, 2009). The fact that music is considered a feminine subject leads us to the assumption that boys who ascribe masculine-typed attributes to themselves have significantly lower enrolment rates in music activities than boys who have a less stereotyped image of themselves. However, the few boys starting music practice in childhood are more likely to continue playing their instruments in adulthood than girls are in general (Theorell et al., 2015).

The home environment is the primary location for participation in cultural contexts, and parents play a major role in enrolling their child in musical activities. Students playing an instrument in a school ensemble are more likely to continue to play their instrument after high school when they are supported and encouraged by their families (Kuntz, 2011). Therefore, it is not only the parental socio-economic status which predicts who participates in musical activities (Albert, 2006; Corrigall & Schellenberg, 2015), but also the value parents place on musical activities (Theorell et al., 2015; Young, 2012). Parents who value music education are more likely to raise the financial means to enable and support their child to participate in musical activities (Busch et al., 2014; Sichivitsa, 2007). Based on an Australian sample of 2,727 students across grades 5–12, McPherson et al. (2015) found within lower secondary grades that the highest number of music learners was from schools in the middle socio-economic band followed by schools in the upper band, while the lowest rate was to be found in schools in the lower socio-economic band. In the context of the school-based German program “An instrument for every child” ([Jedem Kind ein Instrument] JeKi), Busch et al. (2014) analyzed factors affecting (non-)participation in the program JeKi and private instrumental tuition. Regardless of the child’s gender, parents’ cultural capital (measured by the number of books at home, and whether one or both parents play an instrument) was identified to be a predominant factor in students’ engagement in the program JeKi and in private instrumental tuition. The authors also found out that the socio-economic background is rarely linked to the attendance of the school-based program JeKi, but rather to private instrumental lessons outside of school. Nonte and Naacke (2010) come to a similar conclusion in the context of a study on musical-cultural activities at German all-day schools. In total, 1,670 students in grade 6 and 7 were asked about their activities in music, arts, and theater within and outside school. The findings suggest that the cultural capital of the families (possession of wealth goods, number of books at home) and the employment of parents are significant predictors for participation in instrumental tuition outside school but not for participation in extracurricular activities at school.

McGregor and Mills (2006) describe music as an integral part of many teenagers’ lives and emphasize the importance of music as a school subject “through which dominant forms of masculinity can be problematized” (p. 222). Nevertheless, boys value the subject of music less than girls do and describe it as feminine. The authors point out these contradictions and suggest changes in curriculum and teacher behavior. They argue that the curriculum should not simply be changed to make it more attractive for boys because this may cause a reinforcement of traditional gender roles. Instead, they suggest that teachers should be encouraged to implement critical thinking and critical perspectives on music and gender roles into their music lessons. Based on findings from a qualitative survey, Bennetts (2013) emphasizes the importance of the value and place of music each school displays as a message to increase the enrolment of

middle-school boys in musical activities. Based on data from 3,820 Swedish adults, Theorell et al. (2015) found that students attending music classes at school are more likely to continue playing an instrument in adulthood. Based on this finding, it can be assumed that in addition to the home environment, schools play a vital role in engaging children in musical activities.

Different strands of research highlight music education as a gender-stereotyped domain, but there appears to be a research gap regarding the interplay of gender stereotypes, intrinsic values, and the role of peers and parents when it comes to decision-making processes in terms of attending a class with a specific music profile.

## *Aim*

Based on theoretical assumptions from the EV model (Eccles & Wigfield, 2002) and the current state of research, we try to identify the role of students' gender identity in the decision-making process concerning attending a class with a specific music profile. Before we concentrate on interrelations of music class attendance with gender role self-concept, intrinsic values, self-concept, and the relevance of parental attitudes and peer pressure for gender conformal behavior, a description of the distribution of these determinants as well as a description of the distribution for girls and boys attending classes with or without a specific profile in music is needed. Our main goal is to test the following hypotheses.

Following EV theory, it can be assumed that (1) students who value music a lot are more likely to attend a class with a specific profile in music; (2) the same can be assumed for students with high values with regard to their self-concept of music; (3) moreover, the parental attitude toward music is a positive significant predictor of students' intrinsic value of music; and (4) parental attitude toward music is also a predictor of the attendance of a class with a specific profile in music.

Additionally, the formulation of hypotheses concerning students' gender identity is one of the most important questions of this article.

With regard to the "missing males problem" (Koza, 1993) and in line with observed stereotype gender preferences about the subject music (e.g., McPherson et al., 2015), it can be argued that indirect, so called mediation effects occur.

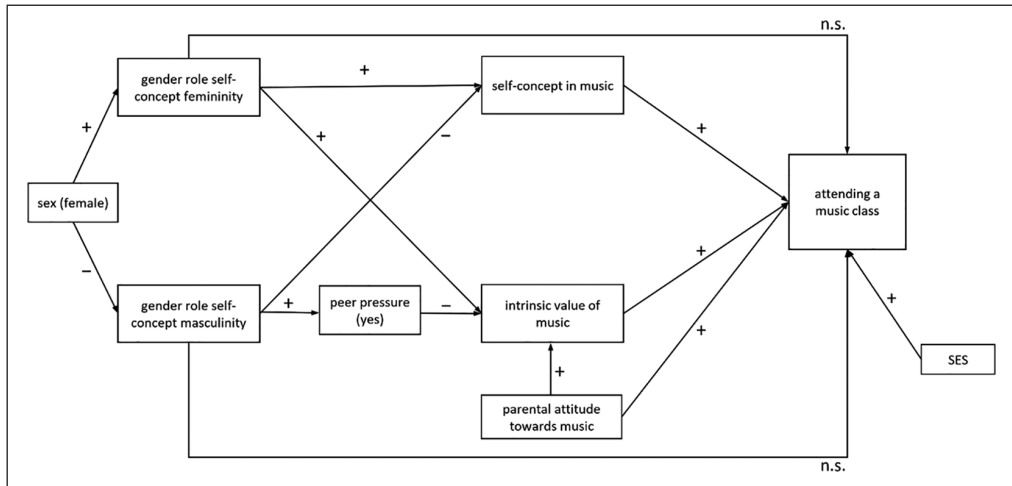
Accordingly, it can be hypothesized that (5) students with high values for the gender role self-concept of masculinity have lower self-concepts in music and are therefore less likely to attend a class with a special musical profile.

Moreover, (6) students with high values for gender role self-concept of masculinity feel more pressure from peers for gender conform behavior, value music less, and are therefore less likely to attend a class with a specific profile in music.

Apart from these assumptions, which consider specific direct and indirect effects, total indirect effects might also occur. Accordingly, it can be assumed that (7) sex (female) has a positive indirect effect on music class attendance through the gender role self-concept of femininity and the intrinsic value of music.

The same hypothesis applies to the self-concept in music. (8) For boys, the opposite effect can be assumed. After considering all these direct and indirect relations for music class attendance, direct paths from gender role self-concept of femininity and masculinity should no longer appear significant.

Moreover, the relevance of students' socio-economic status (SES) for the enrolment in musical activities is documented in various publications. Thus, SES was integrated as a control variable for music class attendance. The hypothesized model is documented in Figure 1.



**Figure 1.** Hypothesized Path Model.

+ = A significant positive path is expected;  
 - = A significant negative path is expected;  
 n.s. = A non-significant path is expected.

## Method

### Sample and procedures

Data were obtained from the longitudinal survey *School- and Class-profiles in Upper Secondary Schools and Comprehensive Schools in the German Federal State of Lower Saxony*<sup>1</sup> (ProBiNi). The study was funded by the *German Research Foundation* (project number 312968144). Focusing the research questions addressed in this article, data were gathered from students and parents at the beginning of fifth grade, immediately after the transition from elementary school to secondary school (Stubbe et al., 2021). Students were asked to answer standardized questionnaires, concentrating chiefly on their interests, motivational aspects, self-concepts, and sociodemographic information. The school sample consisted of 12 comprehensive schools and upper secondary schools in the federal state of Lower Saxony (central Germany). In terms of our research aim, we made use of the subsample of schools with at least one class having a special emphasis on music. In each of these seven schools, one class with a specific music profile and one without a specific profile were selected ( $n = 14$  classes).  $N = 353$  students ( $n = 144$  males and  $n = 209$  females) completed questionnaires in the classroom at the beginning of grade 5. On average, they were  $M = 10.43$  years old ( $SD = 0.40$ ). The survey was conducted by previously trained test administrators based on a test manual. Questionnaires for parents were given to the students and were then collected by the class teacher. Missing data were handled by using *full information maximum likelihood*, an estimator which is implemented in *Mplus 8.4* (Muthén & Muthén, 2017).

### Procedure

To identify children’s gender role identity, five feminine and five masculine attributes from the “Inventory for Measuring Adolescents’ Gender Role Self-Concept” (GRI-JUG) developed by



Krahé et al. (2007) were selected. The original instrument (GRI-JUG) comprises 10 masculine and 10 feminine sex-typed attributes, from which one half of the items are associated with positive and the other half with negative attributes. In a confirmatory factor analysis, only the positive items revealed good model fits. This may be due to a high cognitive demand for children to depict the adequate answer format (Borgers et al., 2000; Nonte, 2012). For this reason, we decided to concentrate on the five positive masculine attributes (e.g., “strong” and “brave”) and the five positive feminine attributes from the original scale (e.g., “romantic” and “sensitive”). Students were asked, “To what extent do these characteristics apply to you?” They responded on a five-point Likert response format (1 = *never or almost never*, 2 = *rarely*, 3 = *occasionally*, 4 = *often*, 5 = *every or almost every time*).

Students’ sex was measured as binary category (0 = *male*, 1 = *female*).<sup>3</sup>

*Intrinsic value of music* was measured by means of a four-item scale. Students were asked to respond to items such as “When it comes to music, I get completely engrossed.” This scale was adapted from Daniels (2008) and reformulated in relation to the domain of music. Students responded on a four-point Likert response format (1 = *strongly disagree* to 4 = *strongly agree*). Cronbach’s  $\alpha$  showed an acceptable internal consistency of  $\alpha = .82$ .

*Self-concept in music* was measured by means of an eight-item scale. An example is “In music I am among the good students” (Rost & Sparfeldt, 2002; adapted to the subject music). Students responded to each item on a four-point Likert response format (1 = *strongly disagree* to 4 = *strongly agree*). Again, the scale showed an acceptable internal consistency of Cronbach’s  $\alpha = .88$ .

*Parental attitudes toward music* were assessed by means of a ten-item scale. Parents were asked to respond to items such as “Children should learn to play an instrument on their own.” (Lehmann-Wermser et al., 2013 slightly adapted). They responded on a four-point Likert response format (1 = *strongly disagree* to 4 = *strongly agree*). Again, internal consistency was acceptable (Cronbach’s  $\alpha = .84$ ).

*Peer pressure* was measured by means of a single item for girls and a single item for boys. Students were asked, “To what extent does this apply to you? Other girls [if it is a girl, otherwise: boys] would be upset if I told them that I like doing things which are normally liked by boys [if it is a girl, otherwise: girls]”. (self-developed item in accordance to Bos & Sandfort, 2010). The response options were yes = 1 or no = 0.

### Socio-economic index

The SES-index was developed based on 47 binary variables retrieved from student and home questionnaires. It included various pieces of information about social, economic as well as cultural capital, for example, the parents’ educational background and whether the student regularly goes to the movie theater with her or his parents. On the basis of Item Response Theory, we used a one-parameter logistic model to build a socio-economic index. The reliability of the index is .78 and thus acceptable.

### Analysis

In order to analyze the interrelations of the gender role self-concept with the participation in a specific music class, manifest path models were conducted using *Mplus 8.4* (Muthén & Muthén, 2017). To detect direct and indirect, so-called mediation effects, of gender role self-concept on attending a music class, we used a path analysis with logistic regression and montecarlo

integration (Menard, 2010; Muthén & Muthén, 2017). The maximum likelihood parameter estimator (MLR) was used, which is robust to non-normality and non-independence of observations when used with TYPE = COMPLEX. The MLR standard errors were computed using a sandwich estimator (Muthén & Muthén, 2017). This option was chosen in order to account for the nested sampling structure. In a first step, we conducted a confirmatory factor analysis for gender role self-concept using a robust estimator (WLSMV; Li, 2016). Secondly, we analyzed the distribution of girls and boys in classes with a music profile and calculated independent-sample *t*-tests to investigate mean differences for the relevant variables for boys and girls and then for regular classes and music classes separately. In a third step, we calculated a path model including sex, gender role self-concept, self-concept of music, intrinsic value of music, peer pressure for gender conform behavior, and parental attitude toward music. All continuous variables have been standardized prior to the analyses. A similar approach for estimating the influence of sex and gender on the achievement through the self-concept had already been implemented by Wolter and Hannover (2016).

## Results

### *Structure of gender role self-concept*

The presumed factor structure of the GRI-JUG (Krahé et al., 2007) could be confirmed for our sample but only after deletion of the aforementioned negative attributes. In confirmatory factor analysis both scales, feminine and masculine, revealed a satisfactory model fit (feminine scale:  $\chi^2 = 9.197$ ,  $df = 5$ ,  $p = .102$ ,  $RMSEA = .049$ ,  $CFI = .995$ ,  $TLI = .990$ ; masculine scale:  $\chi^2 = 15.103$ ,  $df = 5$ ,  $p = .010$ ,  $RMSEA = .076$ ,  $CFI = .995$ ,  $TLI = .991$ ). In the interest of brevity, we made use of factor scales instead of latent factor scores in the analysis.

### *Distribution of sex in music classes and descriptive statistics of determinants*

Descriptive statistics of determinants for attending a class with a specific profile in music for girls and boys are documented in Table 1. Girls showed higher values for the intrinsic value of music ( $p \leq .01$ ) and felt less pressure from peers for gender conform behavior ( $p \leq .001$ ). All other variables did not differ statistically significantly. This also applied for the gender role self-concepts of masculinity and femininity.

In a second step, we focused on the distribution of girls and boys in music classes in the respective schools. Figure 2 shows that 70% of the students in music classes were female ( $n = 129$ ), 30% were male ( $n = 54$ ). In the parallel classes without a specific profile, no sex differences were observed.

Table 2 shows to which extent intrinsic value, self-concept in music, peer pressure, and other aspects differ between classes with or without a special emphasis in music.

Intrinsic value of music and self-concept in music was significantly higher in music classes than in regular classes without a specific profile ( $p \leq .001$ ). Values for parental attitude toward music, self-concept of masculinity and femininity were also slightly higher in music classes, but they did not differ significantly.

### *Direct and indirect effects of gender role self-concept*

A manifest path analysis was conducted in order to analyze the interrelation between gender role self-concept, self-concept of music, and intrinsic value of music as well as SES on attending a music class. Direct and indirect effects were estimated. Students' sex, gender role self-concept,



**Table 1.** Means, Standard Errors, and *t*-Values for Determinants of Attending a Class with a Special Emphasis on Music for Boys and Girls ( $n \geq 290$ ).

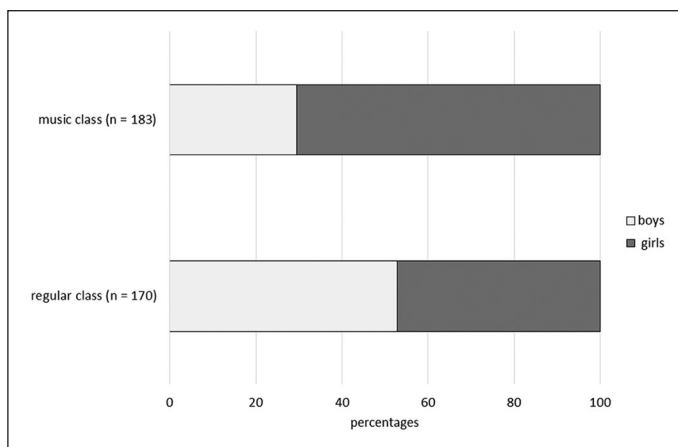
|                                  | Boys                   | Girls                  | <i>t</i> | <i>df</i> | <i>p</i> -value |
|----------------------------------|------------------------|------------------------|----------|-----------|-----------------|
|                                  | <i>M</i> ( <i>SE</i> ) | <i>M</i> ( <i>SE</i> ) |          |           |                 |
| Intrinsic value of music         | 2.80 (0.14)            | 3.20 (0.08)            | 2.64     | 351       | 0.008           |
| Self-concept in music            | 2.95 (0.09)            | 3.07 (0.04)            | 1.36     | 342       | 0.175           |
| Parental attitude toward music   | 3.19 (0.05)            | 3.15 (0.04)            | 0.63     | 298       | 0.532           |
| Peer pressure (yes) <sup>a</sup> | 0.64 (0.15)            | 0.32 (0.15)            | 28.23    | 1         | <0.001          |
| Socio-economic index             | 523.31 (18.06)         | 517.38 (11.33)         | 0.29     | 351       | 0.770           |
| Self-concept of masculinity      | 3.93 (0.05)            | 3.82 (0.06)            | 1.33     | 301       | 0.183           |
| Self-concept of femininity       | 3.27 (0.09)            | 3.34 (0.06)            | 0.67     | 306       | 0.502           |

SE: standard error.

Cases with missing values were excluded.

Standard errors were corrected using TYPE = COMPLEX option in Mplus.

<sup>a</sup>Chi-square statistic was used instead of *t*-test.

**Figure 2.** Distribution of Boys and Girls Attending Classes with a Special Emphasis on Music and Classes without a Specific Profile ( $n = 353$ ).

self-concept in music, and intrinsic value of music, peer pressure for gender conformity behavior as well as parental attitude toward music were included. The dependent binary variable “attending a music class” (0 = *no*; 1 = *yes*) was also controlled by SES (Figure 3).

First, the conducted path analysis revealed many significant direct paths between various variables, but no statistically significant indirect (mediation) effects emerged. This led to a rejection of hypotheses 5–8. All other hypotheses are documented as follows.

First, it is important to note that no significant path between sex and gender role self-concept of masculinity or femininity could be detected. What we found was a significant negative path from gender role self-concept of femininity on the attendance of a music class ( $b = -0.35$ ,  $p \leq .05$ ), which we expected to be non-significant after considering self-concept and intrinsic value.

**Table 2.** Means and Standard Errors for Motivational and Background Variables of Students for Classes with and without a Specific Music Profile ( $n \geq 290$ ).

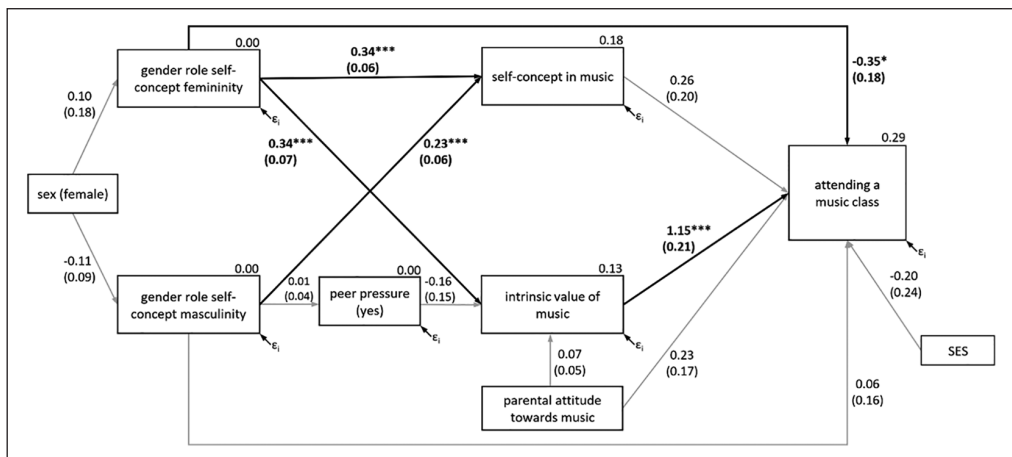
|                                  | Regular classes        | Music classes          | <i>t</i> | <i>df</i> | <i>p</i> -value |
|----------------------------------|------------------------|------------------------|----------|-----------|-----------------|
|                                  | <i>M</i> ( <i>SE</i> ) | <i>M</i> ( <i>SE</i> ) |          |           |                 |
| Intrinsic value of music         | 2.68 (0.07)            | 3.37 (0.05)            | 8.11     | 351       | <0.001          |
| Self-concept in music            | 2.85 (0.03)            | 3.18 (0.04)            | 6.50     | 342       | <0.001          |
| Parental attitude toward music   | 3.11 (0.04)            | 3.22 (0.04)            | 1.94     | 298       | 0.054           |
| Peer pressure (yes) <sup>a</sup> | 0.43 (0.09)            | 0.46 (0.18)            | 0.22     | 1         | 0.641           |
| Socio-economic index             | 512.87 (17.68)         | 526.23 (17.65)         | 0.53     | 351       | 0.594           |
| Self-concept of masculinity      | 3.84 (0.03)            | 3.89 (0.07)            | 0.64     | 301       | 0.521           |
| Self-concept of femininity       | 3.26 (0.05)            | 3.36 (0.06)            | 1.27     | 306       | 0.206           |

SE: standard error.

Cases with missing values were excluded.

Standard errors were corrected using TYPE = COMPLEX option in Mplus.

<sup>a</sup>Chi-square statistic was used instead of *t*-test.



**Figure 3.** Path Model for Music Class Attendance (Unstandardized Path Coefficients; Standard Errors in Brackets;  $n = 300$ ).

Loglikelihood = -1,886.88, AIC = 3,823.77, aBIC = 3,837.08.

Significant paths are printed in bold.

\* $p \leq .05$ ; \*\*\* $p \leq .001$ .

Analogous to this and in line with our hypothesis, the path from gender role self-concept of masculinity and music class attendance was not significant.

What we observed was a positive path from intrinsic value of music to music class attendance ( $b = 1.15, p \leq .001$ ), resulting in the confirmation of hypothesis 1. But no direct effect from self-concept on music class attendance was found. This led to a rejection of hypothesis 2. Regarding the parental attitude toward music for students' intrinsic value for music and music class attendance, no significant paths emerged. Thus, hypotheses 3 and 4 could not be confirmed. Moreover, SES was not a significant predictor of the attendance at all. The explained variance of attending a music class was  $R^2 = .29$ .

Odds ratios (OR) were also available to compare the impact of the dependent variables on music class attendance. An  $OR > 1$  indicates a higher probability for attending such a class, whereas an  $OR < 1$  indicates a lower probability (Eid et al., 2015). The highest impact was observed for the intrinsic value for music ( $OR = 3.16$ ,  $SE = 0.67$ ,  $p \leq .001$ ). Students valuing music had a 3.2-fold higher chance to attend a music class than students with lower values for music. Students with high values concerning their gender role self-concept of femininity had a 0.70-fold lower probability to attend a music class than students with lower values ( $OR = 0.70$ ,  $SE = 0.12$ ,  $p \leq .05$ ).

### **Summary**

First and most importantly, we found no specific or total indirect effects from sex to music class attendance through the gender role self-concept of femininity or masculinity, the intrinsic value of music, and the self-concept of music. Thus, no mediation effects occurred.

Only the feminine gender role self-concept showed a direct significant, but negative effect on attending a music class. The more students described themselves as feminine, the lower their probability to attend a music class was. However, intrinsic value for music was a significant positive indicator for music class attendance. The gender role self-concept of masculinity and of femininity were significant predictors for self-concept of music but only the self-concept of femininity turned out to be a significant predictor of the intrinsic value of music. Therefore, the intrinsic value of music seems to be of high relevance for attending a music class, regardless of gender role behavior. This finding is consistent with the theoretical assumptions of Eccles and Wigfield's (2002) EV model and emphasizes the importance of the subject-specific interest (intrinsic value) in the process of class selection. However, it is not in line with the hypothesized relevance of the self-concept in music (expectancy of success) for choosing a music class (c.f. Nagy et al., 2006). Even though the gender role self-concept of masculinity showed no direct or indirect impact on attendance of a music class for boys or girls, a significant path regarding the gender role self-concept of masculinity and femininity to the self-concept in music was observed. Students with high values in both gender role self-concepts (masculinity and/or femininity) showed higher values in their self-concept in music, but only students with high values in gender role self-concept of femininity showed a higher intrinsic value of music.

### **Discussion and conclusion**

Based on theoretical assumptions about the relevance of the gender role self-concept for the attendance of a class with a specific profile in music, we presented descriptive results and conducted manifest path analysis to test the underlying hypotheses. First, the distribution of boys and girls in music classes and parallel classes without any specific profile showed a higher number of female students in music classes. Based on findings from *t*-tests and chi-square tests, female students seemed to value music more than boys did. Apart from that, male students felt more pressure from their peers for gender conform behavior compared to female students. This is in line with findings from other studies (e.g., Bos & Sandfort, 2010; Kessels, 2005).

When it comes to a comparison of self-concept of music and intrinsic value for music between students in music classes and students in regular classes, students in music classes showed significantly higher values. These observations as well as the results from current research and approved theories documented earlier, might lead us to the assumption that students with high values for the self-concept of masculinity have a lower self-concept in music and a lower intrinsic value for music and are therefore less likely to attend a class with a specific

profile in music. These assumptions have been examined by applying hypotheses testing, which finally led to a rejection.

What could be observed is a strong interrelation between the feminine gender self-concept, the self-concept in music, and the intrinsic value of music. Apart from that, we did not find empirical evidence for our hypothesis that students describing themselves as masculine have a lower likelihood to attend a class with a specific music profile. There was also no significant link between the intrinsic value of music and the gender role self-concept of masculinity. Besides this, we generally found students who described themselves as feminine having a significantly higher self-concept in music with a higher value of music than students who described themselves as more masculine. This may be due to differences in leisure-time activities of girls and boys. Girls generally tend to value activities like music and arts more than boys do (Buser et al., 2017; Eccles et al., 1993). This may cause girls to have higher self-concepts in music and arts. Even though our descriptive findings support this assumption, we did not find evidence for the hypothesis that boys describing themselves as masculine value music less than boys describing themselves as rather feminine. Freer and Evans (2019) suggest that “the music classroom may offer an environment that is capable of facilitating the well-being and motivation of all students and is an area in which gender difference may be smaller compared with other subjects” (p. 793). Others again highlight gender differences with regard to competence beliefs and the value in music (McPherson & O’Neill, 2010). Our findings may also be caused by a very small amount of explained variance for the gender role self-concept of masculinity and femininity by sex. This might be affected by our decision to estimate manifest path analysis based on scale scores instead of estimating a latent model which is more demanding but for various reasons might also be more reliable. The implemented approach can be justified on the basis of the relatively small sample of just 14 classes in seven schools. Apart from methodological issues, it is noteworthy that five of these seven schools are upper secondary schools and only two schools are comprehensive schools. It could be reasoned that a large number of students in our sample are from privileged households and had well-educated and supportive parents. All these characteristics are positively connected to a fluid (androgynous) gender role self-concept (Bem, 1974). It can be argued that individuals with high values on the feminine and the masculine gender role self-concept subscales correspond to the concept of androgyny. Several studies show that androgynous individuals report positive self-concepts, have higher values of self-esteem and perceive a lower pressure for gender conforming behavior (Berk, 2013; Boldizar, 1991). Referring to this, Kemp (2004) points out that primarily musicians show tendencies toward androgyny, especially pupils in the middle and late adolescence (age above 15 years). He adds that the concept of androgyny offers the opportunity for both male and female musicians to reveal characteristics of the opposite sex and is therefore “the most desirable condition” (Kemp, 2004, p. 119; c.f. Bem, 1974). From an androgynous perspective, students in our sample are more likely to reject traditional gender role behaviors and are more flexible in gender-related decision-processes, for example, concerning which class they should attend.

Nevertheless, the relevance of gender role self-concepts becomes evident in consideration of self-concept in music and intrinsic value of music. Because of the lack of appropriate research on gender-sensitive education and teaching in music, gender differences should be an obligatory topic in teacher training. If teachers and parents are aware of causes and effects of gender stereotypes and the associated restrictions on individual potentials, a positive view on heterogeneity can be promoted (Kollmayer et al., 2018). Because the study presented here focuses on children in fifth grade, effects of gender differences that have already developed in primary school could probably be sustained and stabilized throughout secondary level. To address this concern, early gender-sensitive teaching could provide an opportunity to open musical topics

for all genders as well as equally engage boys and girls in music. As shown in Figure 2, only approximately one-third of the children who choose a music class are boys. This allowed us to conclude that music classes are not as attractive for boys as they are for girls (despite their gender role self-concept). However, research by Theorell et al. (2015) reveals that boys starting music practice in childhood are more likely to continue playing their instrument(s) in adulthood than girls. For this reason, early musical education for pre-schoolers and primary school children is of tremendous importance in terms of continuing musical participation throughout adulthood. Further evidence, especially with respect to the quality of such programs, is needed. In our case, we have no detailed information about the attendance at formal music programs in early childhood. There is also a lack of information regarding the quality of music education in primary schools. Therefore, more research concerning the long-term effects of school-based music programs, as well as non-formal or extracurricular music education, particularly in respect to their quality, on learning opportunities needs to be conducted.

### *Limitations and implications*

For practical reasons, all information was gathered after the transition from primary to secondary school at the beginning of grade 5 when this study started. Accordingly, decision-making processes had already been made before students and parents were asked about their values and attitudes toward music. However, students were asked within the first eight weeks after the transition. Moreover, we had no access to qualitative data, which could have been used to reinforce the quantitative findings. This led to the assumption that we should be careful with interpretations of causal inference. Nonetheless, we should not neglect our findings which are in line with findings from current research and shed light on the importance of aspects like sex and gender role behavior in school-based decisions.

Regarding our methodological approach, we used a modern approach to detect mediation effects based on path analysis. It is also important to recognize that numerical integration within the logistic regression approach with MLR estimator becomes increasingly more computationally demanding as the number of mediating variables with missing data increase (Muthén & Muthén, 2017). Different modeling approaches and estimation methods should be compared in the future on the basis of larger samples in order to present reliable results. Despite methodological limitations, many of our findings are in line with previous research in other domains like mathematics and natural sciences (see Nagy et al., 2006; Wolter & Hannover, 2016). Some others point at differential effects of gender role self-concept in music domains and should be investigated more deeply in the future. This is, for example, the negative effect of gender role self-concept of femininity after considering the value component and self-concept in music. Accordingly, research should accompany students from an early age onwards to bring forward more evidence on decision-making processes in music education, especially in school settings, but also in extracurricular contexts. Additionally, qualitative and quantitative data should be brought together in the future to adequately examine the decision-making process from multiple perspectives.

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**Notes**

1. The German project title is Profilbildung an Niedersächsischen Gymnasien und integrierten Gesamtschulen.
2. The response format deviates slightly from the original scale for the first option which is 1 = *not true at all*.
3. We are aware that it would be desirable to include a further category for transgender, but we decided to use a binary category instead, as it was more practical in terms of tracking students based on different sources of information (student tracking list, parents' and students' questionnaires).

**References**

- Abeles, H. (2004). The effect of three orchestra/school partnerships on students' interest in instrumental music instruction. *Journal for Research in Mathematics Education*, 52, 248–263.
- Abeles, H. (2009). Are musical instrument gender associations changing? *Journal of Research in Music Education*, 57(2), 127–139.
- Abeles, H., & Porter, S. Y. (1978). The sex-stereotyping of musical instruments. *Journal of Research in Music Education*, 26, 65–75.
- Abramo, J. M. (2011). Gender differences of popular music production in secondary schools. *Journal of Research in Music Education*, 59(1), 21–43.
- Albert, D. J. (2006). Socioeconomic status and instrumental music: What does the research say about the relationship and its implications? *Update: Applications of Research in Music Education*, 25, 39–45.
- Bem, S. L. (1974). The measurement of psychological androgyny. *Journal of Consulting and Clinical Psychology*, 42, 155–162.
- Bennetts, K. S. (2013). Boys' music? School context and middle-school boys' musical choices. *Music Education Research*, 15, 214–230.
- Berk, L. E. (2013). *Child development*. Pearson.
- Bernabé-Valero, G., Blasco-Magraner, J. S., & Moret-Tatay, C. (2019). Testing motivational theories in music education: The role of effort and gratitude. *Frontiers in Behavioral Neuroscience*, 13, 1–9.
- Boldizar, J. P. (1991). Assessing sex typing and androgyny in children: The children's sex role inventory. *Developmental Psychology*, 27, 505–515.
- Borgers, N., de Leeuw, E., & Hox, J. (2000). Children as respondents in survey research: Cognitive development and response quality. *Bulletin De Méthodologie Sociologique*, 66, 60–75.
- Bos, H., & Sandfort, T. G. M. (2010). Children's gender identity in lesbian and heterosexual two-parent families. *Sex Roles*, 62, 114–126.
- Busch, T., Kranefeld, U., & Koal, S. (2014). Klasseneffekte oder individuelle Einflussgrößen: Was bestimmt die Teilnahme am Instrumentallernen im Grundschulalter [Class effects or individual influencing variables: What determines participation in instrumental learning at primary school age]. In B. Clausen (Ed.), *Musikpädagogische Forschung [Musical Educational Research]: Vol. 35. Teilhabe und Gerechtigkeit. [Participation and Equity]* (pp. 57–75). Waxmann.
- Buser, T., Peter, N., & Wolter, S. C. (2017). Gender, competitiveness, and study choices in high school: Evidence from Switzerland. *American Economic Review*, 107, 125–130.
- Cogdill, S. H. (2015). Applying research in motivation and learning to music education: What the experts say. *Update: Applications of Research in Music Education*, 33(2), 49–57.
- Corrigall, K. A., & Schellenberg, E. G. (2015). Predicting who takes music lessons: Parent and child characteristics. *Frontiers in Psychology*, 6, Article 282.
- Costa-Giomi, E. (2004). Effects of three years of piano instruction on children's academic achievement, school performance and self-esteem. *Psychology of Music*, 32(1), 139–152.



- Daniels, Z. (2008). *Entwicklung schulischer Interessen im Jugendalter* [Development of school interests in adolescence]. Waxmann.
- Delzell, J. K., & Leppla, D. A. (1992). Gender association of musical instrument and preference of fourth-grade students for selected instruments. *Journal of Research in Music Education*, 40(2), 93–103.
- Eccles, J. S., & Wigfield, A. (2002). Motivational beliefs, values, and goals. *Annual Review of Psychology*, 53, 109–132.
- Eccles, J. S., Wigfield, A., Harold, R. D., & Blumenfeld, P. (1993). Age and gender differences in children's self- and task perceptions during elementary school. *Child Development*, 64, 830–847.
- Eder, F. (2011). Wie gut sind Musikhauptschulen [How good are secondary modern music schools]? In H. Altrichter, M. Heinrich & K. Soukup-Altrichter (Eds.), *Schulentwicklung durch Schulprofilierung? Zur Veränderung von Koordinationsmechanismen im Schulsystem* [School development through school profiling? On the change of coordination mechanisms in the school system] (pp. 165–192). VS Verlag für Sozialwissenschaften.
- Egan, S. K., & Perry, D. G. (2001). Gender identity: A multidimensional analysis with implications for psychosocial adjustment. *Developmental Psychology*, 37, 451–463.
- Eid, M., Gollwitzer, M., & Schmitt, M. (2015). *Statistik und Forschungsmethoden* [Statistics and research methods]. Beltz.
- Freer, E. G., & Evans, P. (2019). Choosing to study music in high school: Teacher support, psychological needs satisfaction, and elective music intentions. *Psychology of Music*, 47(6), 781–799.
- Göllner, M. (2017). *Perspektiven von Lehrenden und SchülerInnen auf Bläserklassenunterricht* [Teachers' and students' perspectives on brass class lessons]. Waxmann.
- Green, L. (2002). Exposing the gendered discourse of music education. *Feminism and Psychology*, 12(2), 137–144.
- Hall, C. (2005). Gender and boys' singing in early childhood. *British Journal of Music Education*, 22, 5–20.
- Hallam, S., & Rogers, K. (2016). The impact of instrumental music learning on attainment at age 16: A pilot study. *British Journal of Music Education*, 33, 247–261.
- Hanley, B. (1998). Gender in secondary music education in British Columbia. *British Journal of Music Education*, 15(1), 51–56.
- Harrison, S. D. (2005). Gender in music education. Does it really matter? *Music in Action for Australian Educators*, 3(1), 8–10.
- Harrison, S. D. (2007). A perennial problem in gendered participation in music: What's happening to the boys? *British Journal of Music Education*, 24, 267–280.
- Hartmann, P., & Trautner, H. M. (2009). Die Bedeutung des Pubertätsstatus und des Entwicklungstempos für die Geschlechtsidentität von Mädchen und Jungen in der Adoleszenz [The role of pubertal status and pace of development for gender identity of girls and boys in adolescence]. *Zeitschrift Für Entwicklungspsychologie und Pädagogische Psychologie*, 41, 63–78.
- Heyder, A., & Kessels, U. (2013). Is school feminine? Implicit gender stereotyping of school as a predictor of academic achievement. *Sex Roles*, 69, 605–617.
- Hodges, D. A., & O'Connell, D. (2005). The impact of music education on academic achievement. In M. Luehrsen (Ed.), *Sounds of learning: The impact of music education* (pp. 21–33). International Foundation for Music Research. [https://www.nammfoundation.org/sites/default/files/Sounds%20of%20Learning\\_The%20Impact%20of%20Music%20Education.pdf](https://www.nammfoundation.org/sites/default/files/Sounds%20of%20Learning_The%20Impact%20of%20Music%20Education.pdf)
- Hoffman, A. R. (2008). Gender, identity and the sixth grade band classroom. *GEMS—Gender, Education, Music & Society*, 4, 1–12.
- Kemp, A. E. (2004). *The musical temperament: Psychology and personality of musicians*. Oxford University Press.
- Kessels, U. (2005). Fitting into the stereotype: How gender-stereotyped perceptions of prototypic peers relate to linking for school subjects. *European Journal of Psychology of Education*, 20(3), 309–323.
- Koivuhovi, S., Vainikainen, M.-P., Kalalahti, M., & Niemivirta, M. (2017). Changes in children's agency beliefs and control expectancy in classes with and without a special emphasis in Finland from grade four to grade six. *Scandinavian Journal of Educational Research*, 32, 1–16.

- Kollmayer, M., Schober, B., & Spiel, C. (2018). Gender stereotypes in education: Development, consequences, and interventions. *European Journal of Developmental Psychology, 15*, 361–377.
- Koza, J. E. (1993). The missing males and other gender issues in music education: Evidence from the Music Supervisors' Journal, 1914–1924. *Journal of Research in Music Education, 41*, 212–232.
- Krahé, B., Berger, A., & Möller, I. (2007). Entwicklung und Validierung eines Inventars zur Erfassung des Geschlechtsrollen-Selbstkonzepts im Jugendalter [Development and validation of an inventory for measuring gender role self-concept in adolescence]. *Zeitschrift Für Sozialpsychologie, 38*, 195–208.
- Kuntz, T. L. (2011). High school students' participation in music activities beyond the school day. *National Association for Music Education, 30*(1), 23–31.
- Lehmann-Wermser, A., Busch, V., & Schwippert, K. (2013). SIGrun—Studie zum Instrumentalunterricht in Grundschulen. Skalenhandbuch. [SIGrun—Study on instrumental tuition in primary schools. Scale Handbook.] [Unpublished document]. University of Bremen and University of Hamburg.
- Li, C.-H. (2016). Confirmatory factor analysis with ordinal data: Comparing robust maximum likelihood and diagonally weighted least squares. *Behavior Research Methods, 48*, 936–949.
- Lindsey, L. L. (2015). *Gender roles: A sociological perspective*. Taylor and Francis.
- Lowe, G., & Coy, N. (2016). Immersion, relevance and transferability: The motivational preferences of lower secondary students towards a newly created praxis-based class music program. *Australian Journal of Music Education, 50*(2), 39–47.
- McCormick, J., & McPherson, G. (2007). Expectancy-value motivation in the context of a music performance examination. *Musicae Scientiae, 37*–52.
- McGregor, G., & Mills, M. (2006). Boys and music education: RMXing the curriculum. *Pedagogy, Culture & Society, 14*, 221–233.
- McKeage, K. M. (2004). Gender and participation in high school and college instrument jazz ensembles. *Journal of Research of Music Education, 52*(4), 343–356.
- McPherson, G. E., & O'Neill, S. A. (2010). Students' motivation to study music as compared to other school subjects: A comparison of eight countries. *Research Studies in Music Education, 32*(2), 101–137.
- McPherson, G. E., Osborne, M. S., Barrett, M. S., Davidson, J. W., & Faulkner, R. (2015). Motivation to study music in Australian schools: The impact of music learning, gender, and socio-economic status. *Research Studies in Music Education, 37*, 141–160.
- Menard, S. (2010). *Logistic regression: From introductory to advanced concepts and applications*. SAGE.
- Muthén, L. K., & Muthén, B. O. (2017). *Mplus user's guide* (8th ed.). Muthén & Muthén.
- Nagy, G., Trautwein, U., Baumert, J., Köller, O., & Garrett, J. (2006). Gender and course selection in upper secondary education: Effects of academic self-concept and intrinsic value. *Educational Research and Evaluation, 12*, 323–345.
- Nonte, S. (2012). Die Überprüfung von geschlechtsbezogener Messinvarianz des Fähigkeitsselbstkonzepts von Grundschulern in der Schuleingangsphase [The examination of gender-based measurement invariance of the self-concept of competence of primary school students at the start of school]. *Empirische Pädagogik, 26*, 478–503.
- Nonte, S. (2013). Entwicklungen und Auswirkungen der Schulprofilierung an allgemeinbildenden Schulen in ausgewählten europäischen Ländern und Implementationsperspektiven für Deutschland [Developments and consequences of school profiling in education schools in selected European countries and perspectives for implementation in Germany]. *International Review of Education, 59*, 243–262.
- Nonte, S., & Naacke, S. (2010). MUKUS—Die Ergebnisse [MUKUS—Results]. In A. Lehmann-Wermser, S. Naacke, S. Nonte & B. Ritter (Eds.), *Musisch-kulturelle Bildung an Ganztagschulen. Empirische Befunde, Chancen und Perspektiven* [Music and cultural education in all-day schools. Empirical findings, opportunities and perspectives] (pp. 53–210). Juventa.
- O'Neill, S. A., & Boulton, M. J. (1996). Boys' and girls' preference for musical instruments: A function of gender? *Psychology of Music, 24*, 171–183.
- Rost, D. H., & Sparfeldt, J. R. (2002). Facetten des schulischen Selbstkonzepts: Ein Verfahren zur Messung des differentiellen Selbstkonzepts schulischer Leistungen und Fähigkeiten [Facets of academic self-concept. Development of a self-concept grid: Psychometric data] (DISK-Gitter). *Diagnostica, 48*, 130–140.

- Shavelson, R. J., Hubner, J. J., & Stanton, G. C. (1976). Self-concept: Validation of construct interpretations. *Review of Educational Research*, 46, 407–441.
- Sichivitsa, V. O. (2007). The influences of parents, teachers, peers and other factors on students' motivation in music. *Research Studies in Music Education*, 29, 55–68.
- Stubbe, T. C., Nonte, S., Haas, M., & Krieg, M. (Eds.). (2021). Musik- und MINT-Profilen an niedersächsischen Gymnasien und integrierten Gesamtschulen. Ergebnisse der Studie ProBiNi [Music- and MINT-profiles in upper secondary schools and comprehensive schools in the German federal state of Lower Saxony]. Manuscript in preparation.
- Theorell, T., Lennartsson, A.-K., Madison, G., Mosing, M. A., & Ullen, F. (2015). Predictors of continued playing or singing—from childhood and adolescence to adult years. *Acta Paediatrica*, 104(3), 274–284.
- Tossavainen, T., & Juvonen, A. (2015). Finnish primary and secondary school students' interest in music and mathematics relating to enjoyment of the subject and perception of the importance and usefulness of the subject. *Research Studies in Music Education*, 37(1), 107–121.
- Warzecha, M. (2013). Boys' perception of singing: A review of the literature. *National Association for Music Education*, 32(1), 43–51.
- Wigfield, A., & Eccles, J. S. (2000). Expectancy–Value theory of achievement motivation. *Contemporary Educational Psychology*, 25, 68–81.
- Wigfield, A., Eccles, J. S., Yoon, K. S., Harold, R. D., Arbretton, A. J. A., Freedman-Doan, C., & Blumenfeld, P. (1997). Change in children's competence beliefs and subjective task values across the elementary school years: A 3-year study. *Journal of Educational Psychology*, 89, 451–469.
- Wills, G. (2005). Pendulum swings and educational polarities. *Music in Action for Australian Educators*, 3(1), 14.
- Wilson, T. (2016). Interest, not preference: Dewey and reframing the conceptual vocabulary of school choice. *Education Theory*, 66(12), 147–163.
- Wohlkinger, F., & Ditton, H. (2012). Entscheiden die Schüler mit? Der Einfluss von Eltern, Lehrern und Kindern auf den Übergang nach der Grundschule [Do students have a say? The impact of parents, teachers and pupils on the transition after primary school]. In R. Becker & H. Solga (Eds.), *Soziologische Bildungsforschung [Sociological Educational Research]*. *Kölner Zeitschrift für Soziologie und Sozialpsychologie* (pp. 44–63). Springer.
- Wolter, I. B., & Hannover, B. (2016). Gender role self-concept at school start and its impact on academic self-concept and performance in mathematics and reading. *European Journal of Developmental Psychology*, 13, 681–703.
- Wrape, E. R., Dittloff, A. L., & Callahan, J. L. (2014). Gender and musical instrument stereotypes in middle school children: Have trends changed? *National Association for Music Education*, 34(6), 40–47.
- Wych, G. M. F. (2012). Gender and instrument associations, stereotypes, and stratification: A literature review. *National Association for Music Education*, 30(2), 22–31.
- Young, S. (2012). MyPlace, MyMusic: An international study of musical experiences in the home among seven-year-olds. *Israel Studies in Musicology Online*, 10, 1–15. [https://www.academia.edu/26357044/MyPlace\\_MyMusic\\_An\\_International\\_Study\\_of\\_Musical\\_Experiences\\_in\\_the\\_Home\\_among\\_Seven\\_year\\_olds\\_SUSAN\\_YOUNG](https://www.academia.edu/26357044/MyPlace_MyMusic_An_International_Study_of_Musical_Experiences_in_the_Home_among_Seven_year_olds_SUSAN_YOUNG)