Mapping Music Teachers' Beliefs About Students Gifted for Music: A Latent Profile Analysis

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Abstract

Stereotypical beliefs about gifted students shape teaching and learning contexts. However, little is known about teachers' beliefs in domain-specific contexts, such as music. The present vignette-based online study examined whether distinct belief profiles could be identified among the 278 participating (prospective) music teachers evaluating a fictitious student gifted for music on achievement-related, socio-emotional, and behavioral characteristics, as well as on personality traits. Latent Profile Analysis revealed two profiles reflecting a generally positive view of musically gifted students, consistent with the so-called harmony hypothesis, differing only in extremity: *Moderate Raters* and *Extreme Raters*. A Monte Carlo simulation with 1,000 iterations confirmed that this two-profile solution best fits the present data. The findings suggest domain-specific, positive stereotypical teacher beliefs about students gifted for music and underscore the need to consider their potential effects in teaching contexts, particularly regarding external expectations and the pressures that may be exerted on these students.

Keywords: musical giftedness; stereotyping; teacher beliefs; harmony hypothesis; latent profile analysis

Introduction

The term "gifted" may evoke different kinds of stereotypes, that is, mental images grounded in beliefs about the specific group of gifted individuals (Baudson, 2016). Stereotypes are defined as the cognitive component of attitudes, comprising socially shared beliefs, perceptions, and particularly generalizations about the typical characteristics, attributes, or behaviors of members of a special group (Rosenberg & Hovland, 1960; Stürmer & Siem, 2022; VandenBos, 2007). According to the *multicomponent model of attitudes*, stereotypical beliefs can be distinguished from the affective component, referred to as prejudice, and from the behavioral component, conceptualized as discrimination (Eagly & Chaiken, 1993; Rosenberg & Hovland, 1960; Zanna & Rempel, 1988). In this vein, people tend to represent the gifted as prototypes, which may evoke inaccurate or unfavorable cognitive assumptions about the characteristics and traits of gifted individuals (Baudson & Preckel, 2013, 2016; Matheis et al., 2017, 2020; Gnas et al., 2020). Such dynamics can have a number of negative consequences, for instance, for gifted individuals' (socio-emotional) experiences, achievement development, and self-perception (Coleman & Cross, 1988; Jussim & Harber, 2005). Typical descriptions and representations that are frequently promoted by biased media (re)presentations of the gifted include portrayals of *high flyers* who appear to succeed in almost every area, such as Hermione Granger; *brilliant rebels* like Good Will Hunting who do not fully capitalize on their abilities; *geeks/nerds* such as Sherlock Holmes, typically described as intellectually outstanding but at the same time lacking social abilities; or the *mad geniuses* such as the artists Robert Schumann or Vincent Van Gogh who are said to combine giftedness with madness (Baudson, 2016; Cox, 2000; Dietrich, 2014). In the field of music, particularly young individuals with exceptional instrumental or vocal performances, such as the violinist Sarah Chang, are present in the media and frequently labeled as *musical prodigies* (see, e.g., Gagné & McPherson, 2016). But what about the term "(musical) giftedness"?

From a psychological perspective, giftedness is a broad construct referring to a theoretically established term used to describe particularly exceptional achievement or superior performance that may manifest across domains, such as academia, sports, or music (Preckel et al., 2024). Following the definition approaches by Gembris (2018) and McPherson and Williamon (2016), we understand musical giftedness as an innate developmental potential for achievement in the field of music, particularly the potential to experience music emotionally, understand it intellectually, and create it through vocal, instrumental, or compositional activity by (re)producing it. Thus, this definitional approach emphasizes the innate potential for musical activity across different musical areas – regardless of whether this potential is realized and translated into exceptional achievements. Therefore, potential is indeed seen as a crucial prerequisite but not a guarantee of high achievement (Gembris, 2018; Preckel et al., 2024). This assumption is in line with the *Differentiated Model of Musical Giftedness and Talent* (McPherson & Williamon, 2016), which is based on previous work by Gagné (2010, 2013): In order for potential to be converted into performance, certain intrapersonal and environmental catalysts must be favorable, such as learners' high motivation and effort, or external support by parents and teachers. Therefore, *deliberate practice*, which refers to effective and guided musical practice, appears to play a crucial role in achieving superior performance (Ericsson et al., 1993; Platz et al., 2014).

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Gifted Stereotypes

Some studies have examined specific characteristics and traits of musically active compared to musically inactive individuals (Kemp, 1996; Mund, 2007). Although these studies did not explicitly examine highly gifted musicians, it is reasonable to assume that high-performing musicians possess substantial musical potential (Bullerjahn & Gembris, 2022). Overall, musically active individuals either do not differ significantly from non-musicians or exhibit differences in favor of musically engaged individuals. In this vein, musicians were found to be more open to new experiences, more conscientious, extraverted, and emotionally stable, and to show higher academic performance, creativity, (competition-related) motivation, and higher self-regulatory skills than musically non-active individuals (Bullerjahn & Gembris, 2019; Mund, 2007; Rose et al., 2019). However, this pattern is not fully reflected in music teachers' beliefs about students gifted for music: Based on fictional case descriptions involving a student gifted for music, Gnas et al. (2020) discovered that music teachers rated such students as more capable in achievement-related aspects, more motivated, more open to new experiences, more conscientious, and more emotionally stable, but also as behaviorally more challenging in terms of externalizing problem behavior and disruptive behavior, as less agreeable, and less socially competent compared to musically average-ability students. This effect pattern is not entirely, but to a large extent, in line with the so-called *disharmony hypothesis*, which posits that giftedness is associated with maladaptive behavioral characteristics and personality traits, briefly speaking, an associated vulnerability through giftedness (e.g., Gallagher, 1990; Neihart, 1999; Preckel et al., 2024).

By contrast, more recent results found that music teachers' views of students gifted for music present a more positive picture overall: they were perceived as more positive on achievement-related dimensions, ascribed higher motivation, and rated as having higher levels of both openness and conscientiousness compared to average-ability students (Bareiß et al., 2023). Consequently, the findings point to a tendency toward the *harmony hypothesis*, which posits that gifted individuals are perceived positively overall (Preckel et al., 2024; Persson, 1998; Terman, 1925).

Using Latent Class Analysis (LCA), Baudson (2016) found that one-third of a representative sample of 1029 German adults held a harmonious view of intellectually gifted individuals. In contrast, the remaining two-thirds were characterized by a disharmonious view of the gifted. She argues that classifying effect patterns according to the two hypotheses (harmony vs. disharmony) seems reasonable given the two fundamental underlying dimensions crucial for intergroup perceptions: potential- and achievement-related constructs on the one hand, and socio-emotional characteristics on the other. According to the *Stereotype Content Model* by Fiske et al. (2002, 2007), these two dimensions of social cognition are labeled as *warmth* (individuals' intent) and *competence* (individuals' ability to pursue their intent). Transferred to the two types of hypotheses, high competence combined with high warmth is referred to as the harmony hypothesis, whereas the combination of high competence and low warmth represents the disharmony hypothesis, which refers to the *envious stereotype* (Fiske et al., 2002). That is, both kinds of hypotheses overlap on the competence dimension, but differ on the warmth dimension. Furthermore, as Baudson (2016) pointed out, the harmony hypothesis could assume either predominantly similarity between gifted and average-ability individuals or even the superiority of the gifted over average-ability individuals, which implies that the two hypotheses should be considered in a much more differentiated manner.

Aim of the Present Study

In this contribution, we aimed to build on the previously mentioned works to gain more nuanced, data-driven insights into music teachers' beliefs about students gifted for music. According to the theory, particularly prominent in the field of intellectual giftedness, we initially expected two profiles: a harmonious and a disharmonious one. Baudson (2016) empirically demonstrated that both perspectives exist in German society in principle. However, when examining the latest empirical findings in the music domain (i.e., Bareiß et al., 2023), it should be noted that the disharmonious component is entirely absent. Accordingly, these results show only positively connoted music teacher beliefs about students gifted for music, consistent with the harmony hypothesis. As Baudson (2016) pointed out, the harmony hypothesis assumes either (a) similarity between gifted and average-ability individuals or (b) superiority of gifted over average-ability individuals. Therefore, we used these two harmonious manifestations as a starting point for our exploratory analyses to determine whether we could identify a more differentiated picture of the two hypotheses. That is, although we initially expected two profiles (harmony and disharmony) based on theory, we aimed to investigate whether we can identify a subgroup within each of the two profiles. Building on our initial considerations, Figure 1 presents an abstract, accentuated visualization of possible effect patterns regarding teachers' ratings of students' achievement, behavior, socio-emotional aspects, and personality, suggesting a subgroup within the harmony hypothesis while leaving open the possibility of a further subgroup under the disharmony hypothesis. All types of patterns share some positive aspects but differ across other scales (see Bareiß, in press; see also Gnas et al., 2020).

For our study, we measured implicitly using the vignette approach (Schoenberg & Ravdal, 2000; see below), presenting short descriptions of fictional students in everyday situations that varied only in the students' musical giftedness or success, without providing information on other characteristics or traits. Participants then evaluated these students using standardized rating scales assessing achievement, socio-emotional characteristics, behavior, and personality. Because no additional individual information was provided, the responses reflect teachers' beliefs about the fictitious students (Bareiß et al., 2023; Gnas et al., 2020). This

implicit method is appropriate as it reduces social desirability and response biases, which can be problematic in research on beliefs about gifted individuals (De Houwer, 2006; Mõttus et al., 2008).

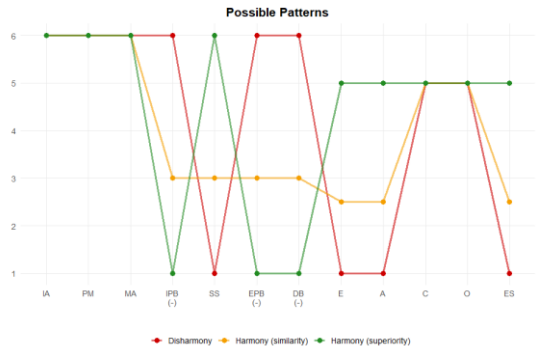

Figure 1: Possible effect patterns of the disharmony and harmony (similarity and superiority) hypotheses. Abbreviations stand for the 12 key scales used (see Table 1).

Method

Participants

The present study is part of a larger survey. We used a subsample of N = 278 (prospective) music teachers from school and out-of-school contexts in Germany (65.45% female; M_{age} = 42.59 years, SD_{age} = 15.29) who considered a fictitious student to be gifted for music. Data were collected nationwide through mailing lists of music conservatories, (music) universities, music associations, teachers' associations, through social media, and personal contacts. The study was approved by the Committee for Responsibility in Research (Ethics Committee) of the University of Stuttgart (approval number Az. 24-026).

Design

We conducted an online survey via SoSci Survey (version 3.2.40; Leiner, 2021) using a between-subjects experimental design. Participants were given a fictitious case scenario (i.e., vignette; Schoenberg & Ravdal, 2000) to read, which included our manipulated variable: the student's musical success at a music competition called *Jugend musiziert* (in English: Youth makes music), a nationwide competition for discovering and promoting musical giftedness in Germany. After reading, participants were asked to label the fictive student from the vignette as gifted or as an average-ability student, resulting in two groups (experimental and control). For the present paper, we analyzed only answers by the group of teachers who assumed the student to be gifted for music.

Materials

Cover Story and Vignettes Participants were informed that we aimed to learn more about the underlying mechanisms of first-impression formation using a brief case description of a student. To avoid desirable response behavior (De Houwer, 2006), meaning that teachers might report beliefs that reflect socially preferred, expected, or professionally endorsed views on gifted individuals rather than their genuine assumptions, we did not disclose the focus on stereotypical cognitive dynamics related to giftedness at the beginning. However, participants were debriefed after completing the questionnaire. In the vignettes, we varied the fictitious students' musical success in the previously mentioned well-known German music competition. We varied between two levels, (1) first prize at the national level, and (2) third prize at the regional level, to evoke associations with the students' possible musical ability level, that is, (1) gifted, and (2) average ability. In turn, this variation was assumed to influence teacher ratings of students' characteristics and traits. We chose this operationalization because (1) high-performing musicians are assumed to have high musical potential (Bullerjahn & Gembris, 2022), and (2) musical ability is often defined in terms of performance in practice (Hasselhorn & Wolf, 2018; Müllensiefen & Hemming, 2018), making it easier to grasp. Regardless of alignment with the intended ability level, we based our grouping (gifted vs. average) on participants' assumptions, as these reflect their perceptions. The control group was included in the survey solely for comparative purposes, which will be the focus of a further study. Figure 2 presents an English translation of our German vignette. Boldface passages indicate our manipulation, with the second expression written in brackets. As these vignettes were used primarily with (prospective) teachers at schools and music schools, we varied the context-related words, as indicated by italics. The remaining narrative parts were kept constant.

> Imagine you have been teaching at a *[music] school* for a year. This morning, a colleague who is ill asked you to take over his lessons today. Since you have time, you agreed to his request. You have already held today's individual lessons. Now it is time for the *[music] school* orchestra rehearsal, which you are leading today in place of your colleague, who is ill. When you arrive at the rehearsal room, you first check the attendance of the young people. The orchestra is complete today; everyone has already gathered in the room and is preparing for the rehearsal. The fifteen-year-old Alex, who has been taking cello lessons at the music school for 8 years, is back today as well. He missed the last rehearsal because he took part in the **national [regional]** competition "Jugend musiziert" (Youth Makes Music). He won a **first [third] prize** there. You give the young people a few minutes to set up and warm up. Then they tune their instruments, and you begin the rehearsal.

Figure 2: Exemplary vignette used within our study.

Measures In addition to capturing participants' socio-demographic variables such as gender and age, participants were asked to rate the fictitious student in the vignette across several aspects. Specifically, our questionnaires of interest were those of (1) Preckel and Matheis (2017) in the extended version by Gnas et al. (2020), which address assumptions about gifted individuals' behavioral characteristics, achievement, and socio-emotional aspects across the following seven subscales, using a 6-point Likert scale (1 = "strongly disagree", 6 = "strongly agree"): intellectual abilities (IA; 6 items), performance and motivation (PM; 6 items), musical abilities (MA; 7 items), internalizing problem behavior (IPB; 5 items; negatively polarized), social skills (SS; 7 items), externalizing problem behavior (EPB; 5 items;

negatively polarized), and disruptive behavior (DB; 5 items; negatively polarized); and (2) the five-factor questionnaire for children by Asendorpf (1998), treating the Big Five personality traits by serving 40 pairs of opposite personality trait descriptions referring to extraversion (E), agreeableness (A), conscientiousness (C), openness to new experiences (O), and emotional stability (ES; all 8 items; 5-point bipolar scale). The scales of the two questionnaires mentioned were used to represent teachers' beliefs regarding these 12 key aspects. Table 1 presents the internal consistency of our measures.

Table 1: Internal consistency (α and ω coefficients) and descriptives of our measures.

Subscales		No. of items	α	ω	*M*	*SD*
Intellectual Abilities	(IA)	6	.85	.89	4.68	0.63
Performance & Motivation	(PM)	6	.79	.85	4.91	0.60
Musical Abilities	(MA)	7	.85	.90	5.07	0.61
Internalizing Problem Behavior **(-)**	(IPB)	5	.68	.75	2.88	0.62
Social Skills	(SS)	7	.75	.82	4.14	0.55
Externalizing Problem Behavior **(-)**	(EPB)	5	.77	.81	2.55	0.69
Disruptive Behavior **(-)**	(DB)	5	.61	.69	2.66	0.58
Extraversion	(E)	8	.90	.92	3.28	0.57
Agreeableness	(A)	8	.81	.87	3.42	0.44
Conscientiousness	(C)	8	.83	.87	4.03	0.47
Openness	(O)	8	.85	.89	3.99	0.47
Emotional Stability	(ES)	8	.86	.90	3.49	0.54

Note. $N = 278$. α = Cronbach's Alpha; ω = McDonald's Omega; *M* = mean; *SD* = standard deviation. **(-)** indicates negatively polarized subscales.

Procedure

Participants read the first information and provided informed consent to participate in our online study. Afterwards, they answered personal and professional questions, read more detailed instructions and the vignette, answered questions regarding their assumptions about the fictitious student, followed by socio-demographic and further personal questions. Finally, participants created an individual code to allow them to revoke their anonymous data, received a debriefing, and could choose to participate in a lottery to win one of ten 20€ vouchers for a German music shop. On average, they took 21.46 min (*SD* = 7.03) to complete the survey.

Data analysis

We only considered data with a maximum of 1% missing values but without missing data in our analysis-relevant variables, participants with a minimum age of 18 years, and an average questionnaire completion time of at least 10 minutes. After preprocessing and aggregating our data according to the underlying questionnaires, we analyzed our data using R (version 4.5.1; R Core Team, 2022) with RStudio (version 4.5.1; RStudio Team, 2020). In addition to descriptive analyses including means (*M*), standard deviations (*SD*), and scale reliabilities (Cronbach's Alpha and McDonald's Omega[1]; Cronbach, 1995; McDonald, 1999) using the R package *psych* (Revelle, 2025), we used Latent Profile Analysis (LPA), followed by a Monte Carlo simulation to determine adequacy of power, using the R packages *tidyLPA* (Rosenberg et al., 2018, 2019) and *MASS* (Venables & Ripley, 2002a, 2002b). LPA is a person-centered modeling approach aimed at uncovering unobserved heterogeneity within a population and identifying substantively meaningful latent subgroups of individuals who are similar in their responses across a set of variables (Spurk et al., 2020; Tein et al., 2013; Williams & Kibowski, 2016). For our LPA, we included all teacher ratings of students' characteristics and traits, that is, the 12 key aspects regarding teachers' assumptions about students' achievement, behavior, socio-emotional aspects, and personality as an expression of teachers' stereotypical beliefs. Due to the absence of established standards, we used a combination of different approaches to determine the number of latent profiles (see, e.g., Geiser, 2010; Nylund et al., 2007; Tein et al., 2013; see also Baudson, 2016): (1) Theoretical soundness, expecting at first two profiles (see above); (2) Parsimony, suggesting to exclude solutions with highly similar profiles; (3) Information criteria such as Akaike's Information Criterion (AIC; Akaike, 1973, 1987) and sample-size adjusted Bayesian Information Criterion (SABIC; Sclove, 1987), with lower values indicating better fit; (4) Global entropy, which depicts classification certainty, that is, the quality of the assignment of individuals to different profiles, with 1.00 being the maximum (i.e., perfect classification) and values ≥ 0.80 suggesting high entropy (Clark & Muthén, 2009); (5) Average Classification Probability, a measure of classification accuracy, which should optimally exceed 0.80; and (6) the Lo-Mendell-Rubin Likelihood Ratio Test (LMR-LRT; Lo et al., 2001) for a direct comparison between neighboring solutions (k vs. k-1 profiles), to test whether increasing the number of profiles improves fit. Furthermore, overfitting should be avoided, as it limits both replicability and generalizability beyond the sample (Hawkins, 2004; Sinha et al., 2021). For sample sizes of $N < 300$, as in the present study, Monte Carlo simulations are recommended to determine the adequacy of power (Sinha et al., 2021; see also Muthén & Muthén, 2002; Nylund et al., 2007; Peugh & Fan, 2013; Tein et al., 2013; Wurpts & Geiser, 2014). To reduce the risk of unreliable results, we conducted 1,000 simulation runs and selected the best-fitting model in each run based on the BIC (Schwarz, 1978). For this purpose, we used the profile-specific means observed in our data and fixed the variances at 1. This approach is common in simulation studies (e.g., Nylund et al., 2007), as it allows the evaluation of classification performance under controlled conditions without additional variance-induced noise.

[1]Cronbach's alpha, though widely used for internal consistency (Stensen & Lydersen, 2022) and thus suitable as a benchmark, may yield biased estimates due to frequently violated assumptions (McNeish, 2018). McDonald's omega, based on a factor-analytic approach, is therefore considered a more appropriate alternative. Given potential discrepancies between alpha and omega, both were applied in this study.

Results

Table 2: Latent profile analysis results.

No. of profiles	Information criteria		Entropy	Probability		Relative class size (proportion)		LMR-LRT	
	AIC	SABIC		*Min*	*Max*	*Min*	*Max*	LMR-LR (*df*)	*p*
1	5632.48	5643.44	1.00	1.00	1.00	1.00	1.00	–	–
2	4881.93	4898.83	0.87	0.95	0.97	0.36	0.64	733.13 (13)	< .001
3	4608.08	4630.92	0.90	0.95	0.97	0.08	0.47	283.08 (13)	< .001
4	4463.37	4492.15	0.87	0.84	0.96	0.07	0.37	161.16 (13)	< .001

Descriptives

The means and standard deviations of teachers' ratings are provided in Table 1, indicating an overall tendency towards positive evaluations of students gifted for music.

Latent Profile Analysis and Monte Carlo Simulation

We conducted an LPA using the 12 key scales to map music teachers' beliefs about students gifted for music. Given the theoretical soundness, we expected two major profiles – but with the possibility of finer differentiation through subgroups as described above. Therefore, we tested for one to four profiles. Table 2 provides an overview of the fit indices for varying numbers of latent profiles. In line with the descriptive analyses, the LPA presents a consistent overall picture of teachers' ratings of students gifted for music, suggesting a generally positive view of musically gifted individuals across various profile counts (see Figure 3). Accordingly, there is no pattern of effects in line with the disharmony hypothesis, but patterns in line with the harmony hypothesis, varying only in extremity, that is, moderately to extremely positive teacher beliefs.

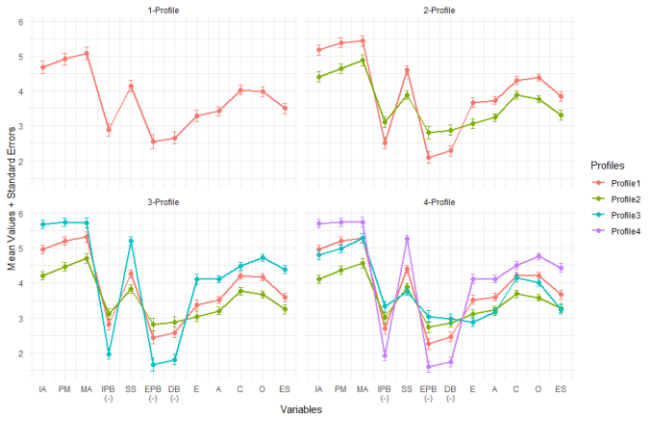

Figure 3: Latent profile line plots for one-to-four-profile solution representing teachers' ratings of students' characteristics and traits (mean values and standard errors).

To determine a reasonable number of profiles, we found that AIC and SABIC decrease as the number of profiles increases, indicating a better fit for more profiles. However, given the relative class size, the profiles from the third profile solution onward are relatively small (minimum class proportions = 8% or 7% of the sample), which could indicate overfitting. Accordingly, given parsimony, the two-profile solution appears sufficient to represent music teachers' beliefs about students gifted for music. Additionally, the decline in relative fit indices (AIC and SABIC) was most pronounced between the one- and two-profile solutions. Considering entropy, a resulting value of 0.87 (two-profile solution) further indicates a clear distinction between profiles (Clark & Muthén, 2009). Furthermore, high average classification probabilities were observed for both profiles (0.95 for Profile 1; 0.97 for Profile 2). The distribution of participants across the two profiles was approximately one-third in Profile 1 (36%, n = 101) and two-thirds in Profile 2 (64%, n = 177).

The Monte Carlo simulation confirms the two-profile solution, as it reveals only two clearly distinguishable profiles. Based on the BIC, the one-profile model was chosen in only 20 iterations (2%), while the two-profile model was selected as the best-fitting model in 980 iterations (98%). These results support our previous decision that (a) more than two profiles must be rejected despite suitable information criteria, and (b) a two-profile solution should be selected as the best-fitting model.

Discussion

This study appears to be the first to examine whether (prospective) music teachers' beliefs about students gifted for music can derive empirically distinct profiles. For this purpose, we conducted an LPA and used a Monte Carlo simulation to confirm our selected number of profiles. Our survey encompassed 12 key aspects of teachers' beliefs about students gifted for music, including students' assumed achievement, behavior, social-emotional characteristics, and personality. In general, our results demonstrate that (prospective) music teachers have a consistent and positive view of students gifted for music. Therefore, based on our data, we are unable to differentiate between disharmony and harmony belief patterns, as stated in theory (Preckel et al., 2024). However, our findings provide a more nuanced perspective on teachers' beliefs about students gifted for music, indicating that the profiles can be situated within the framework of the harmony hypothesis, albeit with varying degrees of extremity. For theoretical soundness and parsimony, a two-profile solution is considered best to map music teachers' beliefs about students gifted for music, a finding confirmed by the Monte Carlo simulation.

Accordingly, we label the two profiles as *Extreme Raters* (Profile 1) and *Moderate Raters* (Profile 2). The distribution of participants across the two profiles was approximately one-third (Profile 1) and two-thirds (Profile 2), resembling the proportions reported by Baudson (2016), despite differences in the underlying profile structures.

There are various possible explanations for an (extremely) positive teacher rating of students gifted for music: Characteristics and qualities may be overemphasized because of one particularly salient characteristic that is not actually relevant to the evaluation; that is, due to the student's assumed musical giftedness level based on their musical achievement reported within the vignette approach, teachers may evaluate the student much more positively overall, known as the *halo effect* (Kahneman, 2011). It is also possible that music teachers identify with the group of individuals gifted for music, that is, perceive themselves as members of this group, which may lead to a positive bias in evaluating this group, known as ingroup bias (see, e.g., Brown et al., 2006). In practice, our results are highly relevant because teachers' beliefs about gifted students may shape their expectations and, consequently, students' behavior, educational goals, and learning outcomes (Jussim & Harber, 2005; Pajares, 1992). Hence, highly gifted individuals may experience pressure from an extreme manifestation of the harmony hypothesis assumed by teachers, as it creates (excessively) high external expectations and a sense of being unable to meet them (Baudson & Preckel, 2016). In turn, this phenomenon can negatively affect students' self-beliefs, such as their self-concept (in music) or self-esteem, respectively, and may cause mental health issues as giftedness may be linked to (unrealistic) perfectionism and self-worth (e.g., Bénony et al., 2007; Mofield & Parker Peters, 2018; Sowa et al., 1994). As the purely harmonious stamped pattern of teachers' beliefs about students gifted for music aligns with the most recent results in the field of music (Bareiß et al., 2023), but contrasts with findings regarding beliefs about intellectually gifted individuals (Baudson, 2016; Baudson & Preckel, 2013, 2016; Matheis et al., 2017, 2020; Preckel et al., 2015; Weyns et al., 2021), our results suggest domain-specific differences in the perception and assessment of gifted individuals. Stereotypical beliefs about gifted people may predominantly be grounded in assumptions about measurable cognitive abilities, as in the prominent intelligence quotient (IQ)-based definition (see Wechsler, 1939). However, objective and widely accepted indicators of musical giftedness are less established (Müllensiefen & Hemming, 2018). This suggests that beliefs are shaped not only by theoretical considerations but also by the availability and visibility of diagnostic criteria, societal expectations, and educational practices. Accordingly, theory, which has so far focused primarily on the distinction between the harmony and disharmony hypotheses, should be refined and extended to account for these domain-specific mechanisms, as we have shown in music. A more fine-grained perspective could help explain how teachers form beliefs about gifted individuals across various domains and how these beliefs influence educational practices, including the identification and support of gifted students.

Limitations and Future Work

Our study is based on a specific sample of (experienced) music teachers, distinguished above all by their high level of musical ability and achievement. Consequently, based on their subjective experiences, (a) more realistic assessments of highly gifted students as well as (b) potential ceiling effects are very likely. Additionally, our sample size ($N < 300$) is rather low for LPAs, for which a minimum of $N \geq 500$ subjects is frequently recommended (e.g., Finch & Bronk, 2011). However, the Monte Carlo simulation confirmed our initially specified two-profile solution. Nevertheless, the results should be replicated with larger, more representative samples that include individuals without professional musical training. These investigations can be followed up by studies in various fields that identify and compare domain-specific teacher beliefs about gifted students. Therefore, it would be beneficial to adjust measurement instruments to account for the various domains and their specific features. Moreover, future studies should take a deeper look into the mechanisms of stereotyping, seeking crucial predictors of different belief profiles. In this vein, it could be fruitful to have more fine-grained insights into participants' individual experiences with gifted people to identify potentially divergent effects (Baudson, 2016). Likewise, teachers' professional experience and personal characteristics could be captured in the future as possible factors influencing belief patterns that led to diverse profiles. Similarly, studies examining the effects of teachers' beliefs on both teachers and their students, particularly in the field of music, would be of great interest and practical relevance. For this purpose, longitudinal research on stereotypical beliefs and their effects would be fruitful, focusing on stability and change over time. Overall, these considerations can be applied to other educational contexts and thus contribute generally to research on giftedness and cognitive biases across various fields.

Conclusion

The study of music teachers' beliefs about students gifted for music appears to be a young field of research. However, it holds considerable potential for providing important insights into (domain-specific) belief patterns. Particularly in the context of music teacher professionalization, this type of research represents an essential first step toward fostering stereotype-aware teachers who are able to provide stereotype-reduced learning opportunities. To raise such awareness, it is crucial to expand knowledge about giftedness and related stereotyping phenomena. Our study offers an initial contribution to this endeavor, which should be further developed and refined in future research. Such progress may help enhance the well-being of individuals gifted for music by reducing unrealistic external pressure and better enabling them to reach their full musical potential.

Supplementary Materials

Supplementary materials can be accessed via the Open Science Framework (OSF) at https://osf.io/35qb7/.

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