

The Choral Conducting Gesture in Music Teacher Education: Towards an Evaluative-Formative Scale (CCS)

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Abstract

Choral conducting is essential in Music Teacher Education, shaping musical, pedagogical, and social competencies through methodologies like Problem-Based Learning, which foster confidence, leadership, and teamwork. Gesture evaluation should be formative, serving as a learning tool. Various models assess accuracy, expressiveness, and motivation, crucial for developing future conductors. This study designed and validated a 16-item Choral Conducting Scale (CCS) for Preservice music educators. Key items, their grouping, and their weight in the overall assessment were analyzed through statistical and qualitative analyses, and confirmed its reliability ($\alpha = .78$) in a university sample. Factorial analysis highlighted the importance of rhythm, meter, and facial expression in assessment. No significant differences were observed based on gender, age, or choral experience, except for students with experience as conductors, who rated more critically. The scale encourages interrelated practice with a technical, musical, and aesthetic focus. Future research should expand educational and cultural contexts to enhance preparation.

Keywords: Choral conducting; Conducting Gesture; Formative assessment; Music Education; Preparation

Choral Conducting in Music preparation

Choral conducting is a fundamental component of preparation for preservice music educators. Music education specialization programs in Spain include conducting, a tradition that dates back to the diploma programs of previous curricula and the postgraduate specialization programs of the 1990s. Internationally, a lot of undergraduate music education programs incorporate conducting into their curricula (Montemayor & Silvey, 2019). Several countries, particularly the United States, have also integrated it into postgraduate programs, due to the central role of singing in elementary education curricula (Baumanis, 2019). In some cases, conducting is even a requirement for entering the profession (Price & Chang, 2001).

Despite its significance, students with experience in dance, singing, or instrumental performance lack practice as conductors, leading to insecurity when assuming this role (Bodnar, 2013). Often, university choirs serve as their first and only choral experience (Bezerra, 2021). Although the romanticized notion persists that great conductors are born with this ability, recent studies have shown that preparation can develop the necessary competencies (Varvarigou & Durrant, 2011). Given that students' preparation experiences may influence their future teaching practices, ensuring high-quality instruction in this area is essential, as they are likely to conduct in the way their own conductors did (Juntunen, 2014).

Many musicians consider choral conducting an important means of communication within musical groups, as it can help convey the conductor's intentions. Its multidimensional nature combines verbal and non-verbal communication through gestures, eye contact, and facial expressions, among other elements (VanWeelden, 2002).

Conducting requires both musical skills—such as artistic intuition, auditory perception, musicality, and repertoire knowledge—and extra-musical abilities, including leadership, motivation, organization, and effective communication (Durrant, 2009; Münte et al., 2001; Parton, 2014). This interdisciplinary approach grants gesture a universal character, though it also includes culturally specific gestures (Gabrielsson, 2003).

Choral conducting encompasses various perspectives. Technically, the conductor's gestures must reflect the musical characteristics of the work (Durrant, 2009), involve decision-making before and during performances, and evaluate the ensemble's performance, correcting errors as needed (Biasutti, 2013). Expressively, conducting conveys the director's emotional and symbolic experience, guiding musicians in their interpretation (Durrant, 2009). Interpretively, conductors offer a cohesive aesthetic vision that honors the composer's intentions and promotes musical unity (Biasutti, 2013; Durrant & Varvarigou, 2015), unraveling the mysteries inherent in music and fostering shared meaning (Veronesi, 2014).

In university music teacher preparation in Spain, choral conducting is usually practiced in groups of 20 to 30 members, where students direct their peers under faculty supervision (Author, 2025). This method combines preparation, live practice, and critical score analysis, allowing students to refine their gestural repertoire through reflection and practice (Bodnar, 2013; Varvarigou & Durrant, 2011). Within this pedagogical framework, Problem-Based Learning (PBL) emerges as a key methodology, as it fosters inquiry and the resolution of uncertainties through active exploration. Effective with advanced students (Paul et al., 2001) and proposed by Elliott in 1995 for music education, this model integrates reflective practice for continuous improvement (Schon, 1987). PBL includes:

- a. Problem scenarios that simulate real experiences and encourage reflection by identifying rehearsal issues (Biasutti, 2013);
- b. Questions that stimulate critical thinking, error correction, and self-assessment (Veronesi, 2014); and
- c. Collaborative work in small groups to strengthen skills and relationships (Durrant & Varvarigou, 2008).

Choral activity, as a form of cooperative teamwork, fosters active student participation, promotes respect for diversity, and helps develop leadership and communication skills (Varvarigou, 2016). Additionally, combining hands-on classes with peer teaching experiences fosters professional engagement and meaningful learning (Paul et al., 2001).

In conclusion, choral conducting is a key element in the preparation of preservice music educators, enhancing musical, pedagogical, and social skills. As Montemayor and Silvey (2019) assert, effective choral conducting leads to more impactful music teaching.

Evaluating Choral Conducting

Linking the teaching of conducting gestures with their evaluation is essential, not only as a normative tool but also as a formative one, highlighting the competencies to be developed. In this way, evaluation transcends its finalistic role to become a learning tool. Although Swanwick (2008) suggested a final concert as a method for assessing choral conducting, this is not always feasible. Instead, having an effective observation tool that would allow pre-service teachers to evaluate the gestures of experienced conductors could optimize both the teaching and the assessment of gestures (Val, 2015).

In 1978, Roshong developed a tool with 82 categories to analyze conductors' non-verbal behaviors. Shortly thereafter, Rudolf proposed a gestural analysis focused on clarity. Years later, in 1981, Ekman and Friesen classified gestures into emblems,

illustrators, regulators, and emotional gestures. Subsequently, in 1992, McNeill expanded this taxonomy by adding iconic, metaphoric, beat, deictic, and emblematic gestures¹, influencing subsequent studies.

Hunsberger adapted his orchestral conducting model to choral conducting, emphasizing expressiveness. Similarly, in 1994, Eichenberg focused on efficient expressive intentions. Later, in 1996, Jordan incorporated posture and breathing into his scale, although in 1997, Phillips proposed an evaluation framework that included posture, gestures, and eye contact. Along the same lines, VanWeelden (2002) designed a questionnaire addressing eye contact, facial expression, posture, and confidence.

Efforts to analyze gestures using computational methods, such as HMM (Hidden Markov Model; Boyes & Bräm, 2000), were not widely adopted. Subsequently, Liao and Davidson (2007) developed a table to analyze the relationship between gesture and vocal performance. Later, Gumm (2011, 2012) proposed 6 functions for conducting gestures, grouping the initial 82 items into 6 factors: mechanical precision, musical expression, psychosocial meaning, vocal and physical technique, relaxation, and motivation. Finally, Gumm (2023) consolidated these factors, integrating both control- and freedom-oriented elements. Below, we will describe these 6 functions based on the most important items to consider when evaluating conducting gestures.

Mechanical precision gestures are fundamental to conductor preparation, as conductors have marked tempo to coordinate groups since Classical Greece. In rhythmically focused pieces (Durrant, 2009), key items include: rhythm, beat, *tempo* changes, meter, and cues (Bodnar, 2013; Gumm et al., 2011). Synchrony in conducting promotes unity and social cohesion among performers (Pearce et al., 2016), especially

¹ We define iconic gestures as those that illustrate actions, deictic gestures as those that point to something or someone, and emblems as gestures that substitute words, such as waving, dancing, etc.

during *ritardandos* and *tempo* changes, where the non-dominant arm (usually the left) plays a crucial role (Lorenzo de Reizabal & Benito, 2018).

Promoting expressiveness is vital in initial conductor preparation (Silvey & Fisher, 2015). Key expressive gestures identified by Gumm et al. (2011) included score indications (intensity, articulation), phrasing and contour, and overall character, as well as facial expression (Nápoles et al., 2021). "Open" postures express confidence and power, while "closed" postures indicate weakness, conveying intensity in conducting (Poggi et al., 2021; VanWeelden, 2002). Expressive gestures naturally follow the music, such as phrasing contours, vibrato, or spreading arms during a *crescendo* (Liao & Davidson, 2007), and require a certain degree of hand independence.

Certain gestures carry psychosocial meaning primarily in relation to the textual content of the works. Gumm et al. (2011) highlighted gestures that convey essential ideas to the group. Emblematic gestures, like lifting or holding something, are widely understood (Boyes & Bräm, 2000). Litman (2006) identified iconic gestures, like bouncing or caressing, as widely shared. Physical metaphors, such as simulating pointing or throwing a ball (Wis, 1999), help internalize abstract musical concepts by connecting physical action to metaphorical understanding. Hand gestures also play an expressive role: palms up can indicate acceptance or supplication, although palms down convey calm or control (Ford, 2001).

Regarding physical and vocal technique in singing, the key items highlighted by Gumm et al. (2011) included physical energy and indicating muscular movements. Vocal gestures exaggerate pronunciation, even if aesthetically unrefined (Durrant, 2009). Gestures influence vocal performance, affecting tone color (Liao & Davidson, 2007), intensity, and tension (Manternach, 2016; Nafisi, 2013). Additionally, singers tend to

mirror the conductor's head and shoulder posture, making the conductor's model a critical reference (Durrant, 2009).

Gestures related to relaxation include tension release and ceasing conducting, (Gumm et al., 2011). Before beginning to conduct, taking a moment of stillness prepares the music (MacKay, 2008).

In motivational terms, Gumm et al. (2011) highlighted eye contact and platform movement, although in the work of Nápoles et al. (2021), 8.38% of the comments referred to the conductor's positioning. An effective conductor maintains eye contact, commands attention, approaches the group, and uses clear facial expressions to convey approval or disapproval (Silvey, 2012).

The height of the conducting plane plays a role in expressiveness, with a general preference for the mid-plane among musicians (Silvey & Fisher, 2015). High-quality feedback includes improvement suggestions (Durrant & Varvarigou, 2015), using positive reinforcement such as nods or negative reactions like head shakes (Silvey, 2012). This type of positive feedback is less researched, although it plays an essential role in creating a constructive environment (Whitaker, 2011). Surprisingly, 10.02% of conductors do not provide feedback (Emerson et al., 2019). This evidence highlights the importance of considering not only gestural technique in choral conducting, but also the development of communication skills that promote group motivation and engagement.

In recent years, researchers have developed new scales to evaluate conducting. The OCGCS by Lorenzo de Reizabal and Benito (2018) includes 27 relevant items, primarily for conservatories. Baumanis' (2019) form evaluates gestures, facial expressions, and voice, although Triviño and Pineda's IADA (2022) incorporates symbols and icons.

The scales discussed above (Gumm, 2012; Liao & Davidson, 2007; Van Weelden, 2002) are useful tools for evaluating conducting gestures; however, they include too many items, and they do not address formative feedback, making their application challenging in a dynamic environment. Moreover, some scales are designed for professional conductors and therefore contain items that are not relevant to teacher preparation.

It is thus necessary to establish a method of gesture assessment that integrates the aforementioned contents and fosters conducting competencies in preservice music educators. Existing scales are often too lengthy or tailored to other levels, making the development of a context-appropriate evaluative scale highly valuable.

Objectives

The aim of this study was to develop an assessment scale for choral conducting gestures, establishing its reliability and validity, that facilitates formative assessment within the preparation of preservice music educators.

To achieve this, researchers established three specific objectives:

1. To design and validate a conducting gesture evaluation scale tailored for these students, highlighting potential differences based on gender, age, choral experience, or conducting experience.
2. To analyze correlations and factors among the scale items to identify possible groupings and factors that can be addressed in conducting classes.
3. To examine the weight of each item in the overall evaluation of the conductor, to understand their relative value in conducting classes.

Method

Participants

Students from the music education major of the Primary Education degree program at XXX, from the academic years 2022–23, 2023–24, and 2024–25 participated in the evaluation. The total sample size was $N = 65$ (80% female), with ages ranging from 21 to 50 years ($M = 23.57$; $SD = 5.57$), an average of $M = 4.62$ years of choral experience, and very limited conducting experience ($M = .29$ years). Students enrolled in the choral conducting course during their final year of study.

Instrument

The research team designed the Choral Conducting Scale (CCS) based on Gumm's model (2012), incorporating updates from the reviewed literature, along with open-ended questions on overall evaluation, areas for improvement, feelings, emotions, etc. The initial model was validated through an interjudge agreement based on the degree of consensus among three experienced choral conductors involved in teacher preparation, using the Content Validity Index (CVI) as proposed by Lynn (1986). The final instrument design combines both quantitative and qualitative data, as recommended by Montemayor and Silvey (2019), and Price (2006). Additionally, following Price's suggestions, the scale collects demographic and academic information from participants, including age, gender, academic year, choral experience, and conducting experience. The instrument uses a 5-point Likert scale, with examples drawn from Bodnar (2013), VanWeelden (2002), and Lorenzo de Reizabal & Benito (2018). The CCS comprises 16 items grouped into six categories, one open-ended question, and an overall evaluation, as shown below, as shown in figure 1.

CHORAL CONDUCTING SCALE (CCS)

GENDER _____

AGE _____

YEARS OF CHORAL EXPERIENCE _____

YEARS AS A CHOIR CONDUCTOR _____

Code: _____

Function of the gesture	Components	Appropriate use				
		1 NONE	2 LITTLE	3 NORMAL	4 A LOT	5 VERY MUCH
MECHANICAL PRECISION	RHYTHM: <i>TEMPO</i> -BEAT, SYNCHRONY AND GESTURE UNITY	1	2	3	4	5
	CUTOFF AND FERMATA	1	2	3	4	5
	<i>TEMPO</i> CHANGES	1	2	3	4	5
	METER	1	2	3	4	5
	CUES	1	2	3	4	5
MUSICAL EXPRESSION	DYNAMICS AND CHANGES	1	2	3	4	5
	ARTICULATION (<i>legato</i> , <i>stacatto</i> , <i>tenuto</i>)	1	2	3	4	5
	PHRASING, LINE, ACCENTS	1	2	3	4	5
	EFACIAL EXPRESSION, EMOTION, CHARACTER, TENSION, INTENTION	1	2	3	4	5
PSYCHOSOCIAL MEANING	GROUP IDEAS, DEICTIC, ICONIC, METAPHORIC, EMBLEMS	1	2	3	4	5
VOCAL AND PHYSICAL TECHNIQUE	BODY ATTITUDE, REQUIRED ENERGY	1	2	3	4	5
	MOUTH MOVEMENTS, BODY POSTURE, BREATHING...	1	2	3	4	5
RELAXATION	Opposite movements to relax, release tension, stop conducting, warn, grab attention. Nodding the head, closing eyes, turning the head...	1	2	3	4	5
MOTIVATION AND FEEDBACK	EYE CONTACT	1	2	3	4	5
	PLACEMENT, DISTANCE, POSITION ON STAGE, CHANGES	1	2	3	4	5
	GESTURE HEIGHT, HORIZONTAL PLANE	1	2	3	4	5

General comments on the conducting: effectiveness, communication, musicality, beauty, emotion, relationship with the musical style, overall impression, etc.

OVERALL GRADE (from 0 to 10): _____

Figure 1

Evaluative-Formative Scale of Choral Conducting

Procedure

To understand and practice the scale, the students collectively analyzed videos of music teachers conducting (Johnston, 1993). After becoming familiar with the scale's

content, students applied the instrument in the music classroom, where they watched a recording of a children's choir performing a song they had sung and conducted multiple times, viewing it three times —*Dins del mar la vela blanca* (<https://www.youtube.com/watch?v=KSwn35lM4v4>). The students were already highly familiar with this piece, having sung and conducted it multiple times.

The students individually rated the conductor's performance using the scale. In this study, university students conducted the assessments, but their own conducting was not evaluated. To ensure anonymity and confidentiality, researchers assigned students a code, following the university's Code of Good Research Practices (2010).

Data analysis

The data analysis included calculations of means, standard deviations, and reliability for all items of the scale, along with Pearson correlations for the 16 items. An ANOVA was conducted to determine group differences, introducing the variable 'conducting experience' as a categorical variable (with or without experience). Subsequently, an exploratory factor analysis with Varimax rotation was conducted to understand how the items grouped into different factors. A linear regression analysis was also conducted to examine how the items on the scale predicted the overall score assigned to the conductor in the video. In this case, conducting experience was introduced as a continuous variable, based on the number of years of experience. All statistical analyses were performed using SPSS statistical software, version 26.

Open-ended responses were analyzed using deductive coding, based on the predefined categories of the CSS scale. The procedure followed a five-step framework outlined by Fereday and Muir-Cochrane (2006) and was implemented using ATLAS.TI software. Data were transcribed and organized to identify relevant content, from which key concepts were extracted and linked to illustrative quotes. These were subsequently

classified into emerging categories and subcategories. Conceptual maps were then developed to represent the relationships among concepts and categories, culminating in an interpretative analysis of the findings.

Results

The data analysis indicates that the scale demonstrates good reliability of the items (Cronbach's $\alpha = .78$). The mean scores for the items range from 4.22 (cues) to 3.05 (psychosocial meanings). Table 1 presents the results obtained by participants for each item:

Table 1
Scores obtained by participants

Item	<i>M</i>	<i>SD</i>	Mín.	Max.
1 Rhythm	4.00	0.81	3	5
2 Final cutoff	4.02	0.80	2	5
3 <i>Tempo</i> changes	3.38	0.80	2	5
4 Meter	3.86	0.96	2	5
5 Cues	4.22	0.80	2	5
6 Dynamics and changes	3.58	1.04	1	5
7 Articulation	3.65	1.07	1	5
8 Phrasing	3.83	0.94	1	5
9 Facial expression	3.42	0.95	2	5
10 Psychosocial meanings	3.05	1.05	1	5
11 Body posture	3.37	0.99	1	5
12 Movements, mouth, breathing	3.89	0.88	2	5
13 Decompression	3.54	0.98	1	5
14 Eye contact	4.02	0.99	1	5
15 Placement, distance	3.89	1.01	1	5
16 Gesture height	4.02	0.97	1	5
Mean	3.73	0.45	2.6	4.5
OVERALL GRADE	7.9	1.00	5	9.5

* Note: The items are scored from 1 to 5. The overall grade ranges from 0 to 10.

Regarding the ANOVA results, there are no differences in the scores by gender, age, or years of experience in choirs. Differences were only found in the overall score for those with experience as conductors ($n = 10$) compared to those without conducting experience ($n = 55$), ($F = 4.445$; $p = .039$). However, contrary to expectations, participants

with conducting experience gave a lower overall rating ($M = 7.30$, $SD = 1.42$) than those without such experience ($M = 8.01$, $SD = 0.88$).

Regarding the qualitative analysis of the open-ended question, the results mainly refer to the effectiveness of the cues, inaccuracies, level of expressiveness, facial expression, and emotion, as well as the eye contact that facilitates communication with the choir.

The exploratory factor analysis, conducted using Varimax rotation and Kaiser normalization, revealed the presence of three main factors that group the 16 items of the scale (see Table 2). Factor 1, which includes the largest number of items (9), encompasses aspects such as gesture placement and height, eye contact, body posture, movement, and breathing. This set can be interpreted as general gesturality, as it includes components related to the clarity, precision, and physical expressiveness of the conductor's gestures. Factor 2, consisting of 4 items, integrates elements such as dynamics, articulation, and tempo changes, suggesting an interpretation focused on control of both hands and technical coordination, particularly in terms of differentiated hand use to indicate musical nuances. Finally, Factor 3, which includes 3 items, brings together elements such as facial expression, psychosocial meaning, and gesture decompression, and can be understood as a dimension related to the emotional content and musical meaning conveyed through gestural communication.

When an item presented cross-loading, it was assigned to the factor with the highest loading, following the methodological recommendations of Costello and Osborne (2019). This factorial structure is also consistent with the Pearson correlation results between items (see Appendix, Table 4), which showed significant associations among components of vocal and body technique (items 9/11, 11/12, 11/14, 12/14, 12/16), expressive function (items 6/7, 7/8), and gestural motivation (items 14/16), supporting

the thematic proximity and internal consistency of the factors identified. Regarding inter-block correlation calculations, only the correlation between years of conducting experience and the overall rating was statistically significant ($r = -.38$; $p = .001$).

Table 2
Factor Matrix of the 16 Items of the Scale

	Factor Matrix		
	1	2	3
1 Rhythm	.454	.509	-.426
2 Final cutoff	.481		
3 <i>Tempo</i> changes		.366	-.362
4 Meter	.440		
5 Cues	.381		
6 Dynamics and changes		.731	
7 Articulation	.581	.436	
8 Phrasing	.559		
9 Facial expression	.321		.612
10 Psychosocial meanings			.403
11 Body posture	.627	-.407	.339
12 Movements, mouth, breathing	.686	-.348	
13 Decompression		.340	.421
14 Eye contact	.684		
15 Placement, distance		-.406	
16 Gesture height	.690		

**Note: Shaded items indicate those with the highest loading for each factor.*

Finally, the results of the linear regression conducted to determine the influence of the items on the director's overall evaluation indicate that experience in directing (considered as a continuous variable in years) accounts for 13.8%. When the rating for the item *tempo changes* is included, the model explains 38.7% of the variance in CSS scores. Including facial expression (item 9) further raises the impact to 48.5%, and with the addition of item 4 (meter), the overall score reaches 51.4% (see Table 3).

Table 3
Influence of Items on Overall Evaluation Using Linear Regression

Predictor	R	Adjusted R-squared
Experience as conductor	.389	.138
Experience as conductor + Item 1 (<i>Tempo</i>)	.637	.387
Experience as conductor + Item 1 (<i>Tempo</i>) + Item 9 (Facial Expression)	.714	.485
Experience as conductor + Item 1 (<i>Tempo</i>) + Item 9 (Facial Expression) + Item 4 (Meter)	.738	.514

**Note: Shaded areas indicate the cumulative prediction percentages.*

Discussion

The first specific objective of this study was to design and validate a choral conducting evaluation scale for preservice music educators. The designed scale (CCS) effectively encompasses all types of gestures and musical content described in conducting studies, as outlined in the introduction of this work. The reliability of the items is robust, indicating the tool's efficacy. Variations in item scores reflect the common focus and objectives in conducting, which tend to prioritize technical aspects over semantic and metaphorical ones (Baumanis, 2019). The conductor's gestural skills represent the most significant influence on the assessment of their work ($B = .19$, $p = .002$). Therefore, further exploration of their evaluation and instruction is of great interest (Jansson et al., 2021).

Regarding group differences, a notable finding was the lower overall scores assigned by participants with conducting experience. This could be attributed to the critical judgment developed during conducting preparation—as suggested by Gumm (2012)—. Experienced conductors may be better at handling practical challenges and perceive the evaluated example as relatively straightforward, which could explain their slightly lower scores (Varvarigou & Durrant, 2011).

In the open-ended question responses, the comments aligned with some categories identified in the study by Montsemayor and Silvey (2019), particularly regarding musical mastery (including effectiveness and inaccuracies) and gestures (expressiveness, facial expression, emotion, and eye contact). This suggests that the qualitative global assessment provides a comprehensive explanation of the value of the conducting gestures employed.

The second specific objective was to analyze correlations and factors within the scale to group the items and interrelate them in conducting classes. The results highlight the relationship between items related to vocal and physical techniques with those concerning motivation and feedback. This broader focus of the CCS, extending beyond the traditionally mechanical aspects of conducting to include expression and feedback, underscores the need to allocate more class time to these often-overlooked components in traditional methods. In this regard, we concur with Gumm (2012) on the importance of incorporating these elements into evaluations, as well as emphasizing the metaphorical and metacognitive dimension represented by the fusion of different modes of sound representation in music educators (Corbalán et al., 2019). This shift moves the emphasis from technical precision to musical and aesthetic leadership, emphasizing how precise gestures, alongside verbal and non-verbal expressions, can significantly influence choir attitudes (Durrant, 2009).

The correlation analysis revealed three factors representing distinct learning types: Factor 1 would include mechanical, expressive, vocal-technical, and motivational elements; Factor 2 would include tasks requiring greater bimanual control; and Factor 3 would include those associated with emotion and meaning. These 3 factors closely align with those of Gumm (2012), though the rhythm item warrants revision. While logically assignable to Factor 1, it scores higher in Factor 2. This could be due to the fact that item 1 currently encompasses tempo (more mechanical, characteristic of factor 1) and gesture unity (more interpretive). A potential solution is splitting this item into two, increasing the scale to 17 elements.

The identification of three factors enables a novel approach to their classroom presentation and practice, allowing for simultaneous exploration along three possible learning pathways. This flexibility permits the integration of exercises for each factor and

their application to repertoire concurrently. Silvey (2012) recommended introducing facial expressions and gestures simultaneously, as expression is often neglected in curricula. Furthermore, combining different factors fosters both controlled and spontaneous dimensions of learning (Gumm, 2023). Practices such as mime, Laban's Kinesphere (Lombardo, 2024), and martial arts like T'ai Chi Ch'uan can also enhance conducting clarity (MacKay, 2008), offering valuable supplementary preparation.

The final specific objective of this study was to analyze the weight of the items in the overall evaluation of a conductor's gesture to assess their relevance in conducting classes. Linear regression results highlight rhythm as a critical factor in assessing a conductor's performance. This may reflect its foundational importance in certain musical ensembles (e.g., marching bands), where synchronization is vital, as underscored by conducting treatises throughout history. The prominence of rhythm aligns with the findings of Nápoles et al. (2021), attributing it 34.35% of the overall conductor evaluation. Similarly, meter plays a role, albeit to a lesser extent, as noted by Bodnar (2013).

Facial expression likely encapsulates expressive and emotional levels in a single item, aligning with the open-ended responses and Nápoles et al. (2021), who found it the second most influential factor in conductor evaluation after mechanical gestures (36.31%). Finally, experience as directors influences the development of a critical perspective, which the use of a formative scale of this nature helps to enhance (Val, 2015).

Conclusions

The designed evaluation scale (CCS) includes 16 items that cover all types of gestural functions and is much more manageable than those described earlier (such as the Gumm scale with 82 items). Its brevity allows for appropriate evaluation and training within the available time for music teacher education, identifying consolidated areas and

aspects to improve for each student. We propose the CSS as a working material in music teacher preparation, as a framework for organizing conducting-related content and enabling its use in various assessment modalities (self-assessment, peer-assessment, and hetero-assessment). These different modalities have proven to be useful and complementary when considering the formative and evaluative aspects of this type of scale. Self-assessment could be conducted through the review of the student's own conducting (Varvarigou, 2016), peer-assessment through small groups of classmates, and hetero-assessment by the teacher (Lorenzo de Reizabal & Benito, 2018).

Based on a well-known and practiced choral repertoire, each student conducts the choir, and its members provide feedback on aspects of the gesture that need improvement. We recommended to practice the gestures in blocks, following the three identified factors, both when conducting and when observing other conductors. Although evaluation does not automatically improve the gesture (Silvey, 2011), evaluation facilitates a continuous formative process, not limited to final assessment. Workshops and masterclasses will remain fundamental for the professional development of choral conductors (Cooper, 2017), incorporating both social and communicative skills as well as musical competencies. In the current context, it makes sense to complement face-to-face preparation with semi-presential and online activities (Durrant & Varvarigou, 2015; Serrano et al., 2022).

Conducting preparation should address the expressive needs of each piece, achieving a harmonious integration between knowledge, intention, movement, and self-expression, so that practice and research in choral conducting enrich and strengthen the musical education of teachers.

This study has some limitations, such as the number of participants and the gender bias. However, the findings open future research avenues, such as refining or adding an

item to the scale, expanding the sample to other education students, applying the scale in different modalities (self-assessment, peer-assessment, hetero-assessment), gathering all the formative aspects of this experience, and exploring gestures across various cultures to identify universal and local codes (Liao, 2008; Wafula, 2023).

Also, analyzing choral conducting experiences in early childhood and secondary education is suggested, considering age and social context differences, and to develop gestures adapted to the current school reality, focused on clarity and motivation (Simones, 2019). Although choral conducting aims to be universal, one of the greatest challenges is adapting to the characteristics of each group, as the stylistic and communicative needs of different ages and levels demand it. The skills needed to conduct amateur choirs are different but equally complex compared to professional choirs (Zgainer & Burcet, 2020). Styles and gestures vary according to factors such as the stage, musical style, group level and age, and the conductor's personality (Boyes & Bräm, 2000). These differences reflect the intellectual, communicative, and contextual dimensions of the act of conducting, a theme of great artistic and human richness deserving greater attention in music education as an essential link between art and human sensitivity.

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APPENDIX

Table 4
Pearson Correlations Between the 16 Items of the Scale

Item	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	4.00	0.81	1															
2	4.02	0.80	<i>r</i> = .36** <i>p</i> = .03	1														
3	3.38	0.80	<i>r</i> = .48** <i>p</i> = .00	<i>r</i> = .20 <i>p</i> = .94	1													
4	3.86	0.97	<i>r</i> = .45** <i>p</i> = .00	<i>r</i> = .26* <i>p</i> = .3	<i>r</i> = .21 <i>p</i> = .09	1												
5	4.22	0.80	<i>r</i> = .28* <i>p</i> = .1	<i>r</i> = .23 <i>p</i> = .05	<i>r</i> = .08 <i>p</i> = .48	<i>r</i> = .10 <i>p</i> = .42	1											
6	3.58	1.04	<i>r</i> = .35** <i>p</i> = .04	<i>r</i> = .13 <i>p</i> = .27	<i>r</i> = .19 <i>p</i> = .12	<i>r</i> = .17 <i>p</i> = .16	<i>r</i> = .24 <i>p</i> = .55	1										
7	3.65	1.01	<i>r</i> = .36** <i>p</i> = .00	<i>r</i> = .37** <i>p</i> = .00	<i>r</i> = .17 <i>p</i> = .17	<i>r</i> = .25* <i>p</i> = .04	<i>r</i> = .30* <i>p</i> = .01	<i>r</i> = .52** <i>p</i> = .00	1									
8	3.83	0.95	<i>r</i> = .30* <i>p</i> = .01	<i>r</i> = .18 <i>p</i> = .13	<i>r</i> = .23 <i>p</i> = .06	<i>r</i> = .36** <i>p</i> = .00	<i>r</i> = .04 <i>p</i> = .69	<i>r</i> = .37** <i>p</i> = .00	<i>r</i> = .56** <i>p</i> = .00	1								
9	3.42	0.95	<i>r</i> = -.14 <i>p</i> = .25	<i>r</i> = .03 <i>p</i> = .79	<i>r</i> = -.15 <i>p</i> = .23	<i>r</i> = .01 <i>p</i> = .92	<i>r</i> = .16 <i>p</i> = .18	<i>r</i> = .12 <i>p</i> = .30	<i>r</i> = .20 <i>p</i> = .10	<i>r</i> = .25* <i>p</i> = .42	1							
10	3.05	1.05	<i>r</i> = -.11 <i>p</i> = .38	<i>r</i> = -.13 <i>p</i> = .29	<i>r</i> = -.22 <i>p</i> = .86	<i>r</i> = .02 <i>p</i> = .86	<i>r</i> = -.06 <i>p</i> = .59	<i>r</i> = .03 <i>p</i> = .80	<i>r</i> = .16 <i>p</i> = .19	<i>r</i> = .24 <i>p</i> = .05	<i>r</i> = .21 <i>p</i> = .08	1						
11	3.37	0.99	<i>r</i> = -.05 <i>p</i> = .64	<i>r</i> = .17 <i>p</i> = .17	<i>r</i> = -.14 <i>p</i> = .26	<i>r</i> = .18 <i>p</i> = .14	<i>r</i> = .05 <i>p</i> = .66	<i>r</i> = -.09 <i>p</i> = .47	<i>r</i> = .28 <i>p</i> = .02	<i>r</i> = .30* <i>p</i> = .01	<i>r</i> = .51** <i>p</i> = .00	<i>r</i> = .16 <i>p</i> = .19	1					
12	3.89	0.89	<i>r</i> = .17 <i>p</i> = .16	<i>r</i> = .26* <i>p</i> = .03	<i>r</i> = .10 <i>p</i> = .64	<i>r</i> = .29* <i>p</i> = .01	<i>r</i> = .27* <i>p</i> = .02	<i>r</i> = -.20 <i>p</i> = .10	<i>r</i> = .23 <i>p</i> = .05	<i>r</i> = .25* <i>p</i> = .03	<i>r</i> = .11 <i>p</i> = .38	<i>r</i> = .15 <i>p</i> = .21	<i>r</i> = .52** <i>p</i> = .00	1				
13	3.54	0.99	<i>r</i> = .13 <i>p</i> = .27	<i>r</i> = .30* <i>p</i> = .01	<i>r</i> = .01 <i>p</i> = .93	<i>r</i> = .04 <i>p</i> = .71	<i>r</i> = .20 <i>p</i> = .09	<i>r</i> = .34** <i>p</i> = .00	<i>r</i> = .32** <i>p</i> = .00	<i>r</i> = .26* <i>p</i> = .03	<i>r</i> = .37** <i>p</i> = .00	<i>r</i> = .33** <i>p</i> = .00	<i>r</i> = .09 <i>p</i> = .44	<i>r</i> = .10 <i>p</i> = .41	1			
14	4.02	0.99	<i>r</i> = .17 <i>p</i> = .16	<i>r</i> = .23 <i>p</i> = .05	<i>r</i> = .09 <i>p</i> = .47	<i>r</i> = .23 <i>p</i> = .06	<i>r</i> = .27* <i>p</i> = .02	<i>r</i> = -.20 <i>p</i> = .10	<i>r</i> = .17 <i>p</i> = .15	<i>r</i> = .27* <i>p</i> = .03	<i>r</i> = .17 <i>p</i> = .16	<i>r</i> = .01 <i>p</i> = .91	<i>r</i> = .53** <i>p</i> = .00	<i>r</i> = .60** <i>p</i> = .00	<i>r</i> = -.10 <i>p</i> = .40	1		
15	3.89	1.02	<i>r</i> = .07 <i>p</i> = .54	<i>r</i> = .21 <i>p</i> = .08	<i>r</i> = .18 <i>p</i> = .14	<i>r</i> = -.19 <i>p</i> = .12	<i>r</i> = .18 <i>p</i> = .14	<i>r</i> = .22 <i>p</i> = .07	<i>r</i> = .16 <i>p</i> = .20	<i>r</i> = .12 <i>p</i> = .31	<i>r</i> = .16 <i>p</i> = .20	<i>r</i> = .31* <i>p</i> = .01	<i>r</i> = .02 <i>p</i> = .84	<i>r</i> = -.04 <i>p</i> = .70	<i>r</i> = .40** <i>p</i> = .00	<i>r</i> = -.02 <i>p</i> = .81	1	
16	4.02	0.98	<i>r</i> = .35** <i>p</i> = .00	<i>r</i> = .44** <i>p</i> = .00	<i>r</i> = .13 <i>p</i> = .29	<i>r</i> = .25* <i>p</i> = .04	<i>r</i> = .27* <i>p</i> = .02	<i>r</i> = .00 <i>p</i> = .96	<i>r</i> = .24 <i>p</i> = .05	<i>r</i> = .25* <i>p</i> = .03	<i>r</i> = .04 <i>p</i> = .73	<i>r</i> = -.00 <i>p</i> = .99	<i>r</i> = .38** <i>p</i> = .00	<i>r</i> = .58** <i>p</i> = .00	<i>r</i> = .00 <i>p</i> = .95	<i>r</i> = .59** <i>p</i> = .00	<i>r</i> = .19 <i>p</i> = .12	1

Note ** The correlation is significant at the .01 level (2-tailed).

* The correlation is significant at the .05 level (2-tailed).