The "mirroring" method: a case study to enhance the nexus between music performance practice and artistic research in higher music education at European conservatories

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Abstract. After the Bologna Declaration (1999) and the institution of artistic research in music (i.e., PhD in the Arts) in European conservatories, higher music education is facing a revolution. The renewed study program within today's international music scene is oriented to give students the possibility to be trained and prepared as both professional musicians and/or artist-researchers. Therefore, the current debate at European conservatories is strongly focused on how to activate a nexus between performance practice and artistic research within bachelor's and master's programmes.

This paper presents and discusses a case study of a workshop in music performance practice integrated in the Research Practice Program at Royal Conservatory of Antwerp. It consists of a series of teaching modules inspired by the *mirroring* method I developed during my PhD at University Ghent – Institute for Psychoacoustic and Electronic Music (IPEM) - and I implemented, as a postdoctoral artist-researcher, in my teaching at the Royal Conservatory of Antwerp (2021-2023). The goal of this method is to assist students in growing up their own artistic identity and trajectory and become professional performers with a possible path on artistic research in music. Students are guided on how to structure music performance practice as a research activity through a systematic documentation, analysis, and dissemination of their own creative process. Outputs can be identified in the improvement of students' body awareness while playing in relation to score analysis and the achievements of research questions that arise from their reflection *in* and *on* their practice. An impact of this approach is retrieved in the elaboration of bachelor's and master's theses that can ultimately constitute a bridge for future artistic research proposals.

Keywords. Music Performance Practice, Artistic Research in Music, Higher Music Education, Music Performance Analysis, Music Analysis.

El método de "espejo": un caso de estudio para mejorar el nexo entre la práctica de la interpretación musical y la investigación artística en la educación musical superior en los conservatorios europeos

Resumen. Después de la Declaración de Bolonia (1999) y la institución de la investigación artística en música (es decir, doctorado en artes) en los conservatorios europeos, la educación musical superior se enfrenta a una revolución. El programa de estudio renovado dentro de la escena musical internacional actual está orientado a brindar a los estudiantes la posibilidad de formarse y prepararse como músicos profesionales y/o artistas-investigadores. Por lo tanto, el debate actual en los conservatorios europeos se centra fuertemente en cómo activar un nexo entre la práctica escénica y la investigación artística dentro de los programas de licenciatura y maestría.

Este artículo presenta y discute un caso de estudio de un taller de práctica de interpretación musical integrado en el Programa de Práctica de Investigación del Conservatorio Real de Amberes. Consiste en una serie de módulos de enseñanza inspirados en el método de espejo que desarrollé durante mi doctorado en la Universidad de Ghent -Instituto de Música Psicoacústica y Electrónica (IPEM)- e implementé, como artista-investigadora postdoctoral, en mi enseñanza en el Conservatorio Real de Amberes (2021-2023). El objetivo de este método es ayudar a los estudiantes a desarrollar su propia identidad y trayectoria artística, y convertirse en intérpretes profesionales con un posible camino en la investigación artística en la música. Se guía a los estudiantes sobre cómo estructurar la práctica de la interpretación musical como una actividad de investigación a través de una documentación, análisis y difusión sistemáticos de su propio proceso creativo. Los resultados pueden identificarse en la mejora de la conciencia corporal de los estudiantes mientras juegan en relación con el análisis de la puntuación y los logros de las preguntas de investigación que surgen de su reflexión en y sobre su práctica. Se recupera un impacto de este enfoque en la elaboración de tesis de licenciatura y maestría que en última instancia pueden constituir un puente para futuras propuestas de investigación artística.

Palabras clave. Práctica de Interpretación Musical, Investigación Artística en Música, Enseñanzas Superiores de Música, Análisis de Interpretación Musical, Análisis Musical.
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1. Introduction
The new millennium presents a historical and philosophical renovation in the studies in the arts. The development of the *performance studies*[1] together with the claim of the *artistic turn*[2] and the *performative turn*[3] transformed performance practice into a territory of investigation and experimentation where theory and practice are integrated in the perspective to generate new knowledge in the arts[4]. Accordingly, the amount of information collected in the artistic

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[1] Schechner, R. (2002). *Performance Studies: An Introduction* Routledge (vew edition).

[2] Coessens, K., Crispin, D. & Douglas, A. (2009). *The artistic turn: A manifesto.* Ghent, Belgium: Orpheus Institute, Leuven University Press.

[3] Cook, N. (2015). Performing Research: Some Institutional Perspectives. In M. Doğantan-Dack, *Artistic Practice as research in Music: theory, criticism, practice* (pp. 11-21). Ashgate.

[4] *Cf.* Borgdorff, H. A. (2012). *The Conflict of the Faculties: Perspectives on Artistic Research and Academia.* Amsterdam, Holland: Leiden University Press.

context constitutes a *knowhow* and contents not separable from practice itself[5]. Performers, rather than passively and intuitively replicate and iterate established techniques, during their practice are engaged in experimentations whose output are substantial for the advancement and progress of music performance[6]. Therefore, the investigation on performers' *creative process* assumed a central role in respect of the fact that new knowledge *in* and *on* the arts is produced through artistic practice.

The artistic attitude and will to conduct a practice-based research[7] brought over the last twenty years to the institutionalization of a new sector of studies in Europe, i.e. the doctoral level of *artistic research* and PhD in the Arts. After the Bologna Declaration 1999[8], this revolutionary settle in arts education caused a strong debate on how to renovate the traditional music training programs because todays' music performers have the opportunity to become professional musicians and/or artist-researchers but they need to develop and master both competences, theoretical and practical. Therefore, the neo-conservatories of the XXI century in Europe needs to place in the centre of their study program a strong nexus between performance practice and artistic research[9].

Traditionally, the primary focus in higher music education was to guide students in developing practical and creative skills that can lead them to a professional activity as a professional performers or teachers[10]. Accordingly, conservatoires' programs focus on a learning process that attempts to teaching standards mainly focused on a hierarchic relation professor-student in order to transfer practical and theoretical skills in instrumental practicing or in composing. The current core of higher music education, instead, is to teach "creationism" than "evolutionism"[11]. This means that students should be trained not only to develop their artistic career as performers engaged in playing as an "artisanal" creation, but mostly to be engaged in playing as an "investigative" creation.

Regarding the study programs specifically in instrumental performance practice at conservatoires, the goal in the past was mainly grounded in the "authentic"

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[5] Klein, J. (2010). The Other Side of the Frame. Artistic Experience as Felt Framing: Fundamental Principles of an Artistic Theory of Relativity. In S. Flach & J. Söffner (Eds.), *Habitus in Habitat II – Other Sides of Cognition* (pp. 121-137). Peter Lang.

[6] De Assis, P. (2015). *Experimental Affinities in Music.* Leuven University Press.

[7] Smith H. & Dean, R. T. (2009). *Practice-Led Research, Research-Led Practice in the Creative Arts.* U.K.: Edinburgh University Press.

[8] The Bologna Declaration involved twenty-nine countries and reformed higher education in Europe for the recognition of diplomas and for the structure of bachelor and master program in the European higher education area.

[9] Voets K. (2017). Conservatoires in Flux: Research in the Arts in the Flemish Conservatoires of the Twenty-First Century. In J. Impett (Ed.). *Artistic Research in Music: Discipline and Resistance. Artists and Researchers at the Orpheus Institute* (pp. 278–95). Leuven University Press.

[10] From http://www.musique-qe.eu/userfiles/File/msmapbriefingpaper.pdf (Accessed 05/06/2023).

[11] Hannula, M., et al. (2005). *Artistic research: theories, methods and practices.* Helsinki, Finland: Academy of Fine Art and Gothenburg, Sweden: University of Gothenburg ArtMonitor.

interpretation and reconstruction of the composer's intentions by following the written instructions of a piece through a score-based analysis (see HIP the historically informed performance[12]). Nowadays, this approach is turning into a different settle that revaluates music performers as *co-creators*[13] rather than passive interpreters. Therefore, the perspective generated by score-based analysis requires the complementary perspective generated by performance-based analysis (see AIP analytically informed performance[14]). Accordingly, teaching instrumental performance practice is now oriented to guide students to achieve a more creative approach, i.e. not to passively apply score-based analysis but rather to make performance practice as the central focus of their analysis in the perspective to develop a research path. Research in music performance concerns both the production of a performance and the production of new knowledge on a performance gathered through a systematic documentation, analysis and evaluation of musicians' creative process and artistic practice[15].

To achieve the new perspectives of artistic research, traditional methods in teaching music performance practice are not sufficient. It is necessary now to find innovative interdisciplinary modalities to facilitate the interconnection between theory and practice, and *experiential learning*[16]. A research-based approach in music performance practice asks students not to be exclusively trained to develop their instrumental skills but, rather, to be engaged with a method that can prepare them to deal with problem solving and decision-making regarding an artistic experimental trajectory driven by their own creative process. Students have to be stimulated in mastering both technical abilities and intellectual expertise (e.g. self-observation, self-evaluation presentation and management of their artistic identity and activity) in order to reach a personal artistic maturity in the perspective of a professionalism in both directions: performance practice and artistic research. Therefore, awareness and reflection are necessary cornerstones of today's musical study programs at European conservatories, especially to access and apply, after the master level, to artistic projects and/or doctorate in music. Traditional training programs at conservatoires are still in the process to define guidelines to answer the following questions:

- Which are strategies to establish a strong nexus between artistic practice and artistic research in higher music education?
- How can higher music study programs at conservatories prepare students to create and develop their own artistic identity as performers and future artist-researchers?

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[12] *Cf.* Cook, N. *Performing Research…, Op. Cit.*

[13] *Cf.* Rink, J. (1995). The (F)utility of Performance Analysis. In M. Doğantan-Dack, (Ed.), *Artistic Practice as research in Music: theory, criticism, practice* (pp. 59-76). Ashgate. Kivy, P. (1995). *Authenticities. Philosophical Reflections on Musical Performance.* N.Y.: Cornell University Press, Ithaca.

[14] *Cf.* Cook, N. *Performing Research…, Op. Cit.*

[15] Doğantan-Dack, M. (2015). *Artistic Practice as research in Music: theory, criticism, practice.* UK.: Ashgate. University of Oxford.

[16] Kolb, D. A. (1984). *Experiential Learning: Experience as the Source of Learning and Development* (new edition) USA: Pearson Education.

- How can students be supported in structuring performance practice as a deliberate activity already bent towards artistic research? And which are tools to assist them in the phases of documenting, analysing and disseminating their own creative process?

This paper will present and discuss a method I recently implemented in my teaching, within the Research Practice Program at the Royal Conservatory for Antwerp (2021-2023). This approach comes from the method I co-developed during my PhD at University Ghent – Institute for Psychoacoustic and Electronic Music (IPEM). By focussing on the *mirroring* aspect of music performance practice (i.e. the reflection *in* and *on* practicing), the goal of this method is to create a bridge between theory and practice, score-based analysis and performance-based analysis. The *mirroring* method reveals potentialities to help students in transforming their own daily instrumental practice into a systematic investigation by starting from research questions arisen from their own creative process. The application of this approach in my teaching is a modality to guide students to achieve both practical and theoretical results: the improvement the efficiency of their performance and the elaboration of artistic projects and research paths.

2. The *mirroring* method as a bridge between bachelor's and master's theses and artistic research proposals

2.1 The *mirroring* process
The mirroring process is an implicit aspect of performance practice and art creation. Gestures to produce an artwork, the artwork itself and the way it is perceived by the audience are all reflections, or mirrors, of the performer's Self[17]. The performance of a written composition presents 'other' extra layers, i.e. the composers' intentions, in which performers confront their 'Self'. Furthermore, the performance itself is a shared space where performers live the presence of their 'Self' in relation to other of the 'Self', i.e. the observers/the audience. Therefore, performers deal with their internal imagine perceived by themselves and the projection of their external imagine perceived by the audience. Neuroscientists identify this mutual representation of the other(-ness) and the 'self' in the reactivation of 'mirror' neurons[18], which retrieve and recognize past experiences memorized and embodied[19].

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[17] *Cf*. Caruso, G. (2018). *Mirroring the intentionality and gesture of a piano performance: an interpretation of 72 Etudes Karnatiques pour piano*. Ghent University Press.

[18] Gallese V., Mingone P., Eagle M. N. (2006). La simulazione incarnata: I neuroni specchio, le basi neurofisiologiche dell'intersoggettività e alcune implicazioni per la psicoanalisi. *Psicoterapia e scienze umane*, Franco Angeli.

[19] Varela F. J., Thompson, E., Rosch, E. (1991). *The Embodied Mind: Cognitive Science and Human Experience*. The MIT Press.

The importance of the awareness of the internal and external images of the 'Self' in music performance practice derives from the teachings of great musicians. The pianist Claudio Arrau describes how often he performed in front of a mirror, or even in front of a video camera, to improve the image of the 'Self' and be conscious of his gesture and bodily expression[20]. The mirror, thus, is a reinforced dynamic tool within the artistic process and music interpretation to stimulate the process of reflecting *in* and *on* action[21] as a modality to become aware of the internal and external images of the 'Self' and level of communications, i.e. the empathic relation to the other. However, respect to a simple mirror that can capture only an elusive moment of a performance, nowadays audio/video/motion capture technologies provide a major feedback that can stimulate musicians to a deeper self-reflection and self-analysis on posture, gesture, sound, stage presence, concentration, memory etc. during the preparation of their performance. Easy-to-use technology (like audio-video recordings and open sources), integrated in daily practice as an "augmented mirror", are able enhance self-study and body awareness in playing an instrument[22]. Enhancing body awareness, in order to optimize body posture and specific gestures in relation to music interpretation, is the core of different instrumental pedagogical approaches. French pianist, composer and pedagogue Marie Jaëll Trautmann, for instance, has already developed at the end of the XIX century a method that applied the use of a simple photo camera to stimulate students in improving awareness of their gestures and control of sound in piano performance[23].

Recent studies on embodied music cognition remarks the central role of gestures in music performance practice and body awarenss[24]. The deliberate interpretation of a musical piece requires a reflective and artistic decision-making, which entails a process of embodiment[25], i.e. the fusion body-mind revealed in the incorporation of the score and the aware reconfiguration of instrumental gestures and bodily engagement in relation to the changes in score analysis and musical interpretation. Accordingly, performers apply both cognitive and a sensorimotor schemes to execute, or *enact*[26], the score, i.e. to transform an interpretation into a performance[27]. This means that the execution reflects the musical intention. The analysis and evaluation of the performance practice make performers able to gain a deeper self-knowledge on their gestural

[20] Von Arx, V. A. (2014). *Piano Lessons with Claudio Arrau: A Guide to His Philosophy and Techniques*. New York: Oxford University Press.

[21] Schön, D. (1984). *The reflective practitioner*. Basic Books.

[22] *Cf*. Caruso G. & Nijs L. (2021). When arts and science meet: digital technology in artistic research. Journal of Music Technology & Education, 13(2–3), 117–140. https://doi.org/10.1386/jmte_00019_1

[23] *Cf*. Jaëll Trautmann, M. (1897). *Le mécanisme du toucher*. Armand Colin.

[24] Godøy, R. I. & Leman, M. (2010). *Musical gestures: Sound, movement, and meaning*. Routledge.

[25] Leman, M- & Nijs, L. (2017). Cognition and technology for instrumental music learning. In A. King, E. Himonides, & S. A. Ruthmann (Eds.), *The Routledge companion to music, technology, and education* (pp. 23–35). Routledge.

[26] Leman, M. (2016). *The expressive moment: How interaction (with music) shapes human empowerment*. MIT Press.

[27] Leman, M. (2007). *Embodied music cognition and mediation technology*. MIT Press.

involvement and musical meaning[28]. Thus, self-observation and self-evaluation are necessary approaches for performers to achieve awareness of the relation between their gestural approaches, interpretation, and sound results, and ultimately of their creative process and musical growth.

2.2. The *performance model*

In my personal teaching experience, I noticed how young musicians are not very attentive to have a systematic methodology in their daily practicing to achieve body awareness and to prepare themselves to be on stage and be perceived on stage. Most of the time, they apply intuitive approaches in their learning and performing activity without a structured practice. This because students are used to passively reproduce input received from their teachers during their lessons rather than have a systematic method to deliberately deconstruct and reconstruct their own performance practice and creative process. Considering this need, I decided to share and experience with my students at the Royal Conservatory of Antwerp the method I co-developed during my PhD[29]. This is a holistic approach to map performance practice based on a *performance model*[30] which enables performers to reach a reconstruction of their creative process and their gestural approach in relation to their interpretation. It is based on a systematic analysis of the score (musical form, subdivision of phrases) combined with a collection of data on technical structures (e.g. patterns, fingerings, motor strategies) and interpretative cues (e.g. tempo, articulation, dynamics), through subjective observations of audio/video recordings. Audio/video recordings are used to activate *stimulated recalls*[31] or *thinking aloud-procedures*[32]. This procedure drives performers to verify the artistic expectations described in self-reports written by following the structure of the performance model.

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[28] Caruso, G., Coorevits, E., Nijs, L., & Leman, M. (2016). Gestures in Contemporary Music Performance: A Method to Assist the Performer's Artistic Process. *Contemporary Music Review*, 35 (4-5), 402-422.

[29] Caruso, G. *Mirroring the intentionality..., Op. Cit.*

[30] *Cf.* Bruner, J. S. (1986). *Actual minds, possible worlds*. Harvard University Press; Chaffin, R. & Imreh, G. (2001). Comparison of Practice and Self-Report as Sources of Information About the Goals of Expert Practice. *Psychology of Music*, 29(1), pp. 39-69; Caruso, G. *Mirroring the intentionality..., Op. Cit.*

[31] Bloom, B. S. (1953). Thought-processes in lectures and discussions. *The Journal of General Education*, 7(3), pp. 160–169.

[32] Van Den Haak, M. J. & De Jong, M. D. (2003). Exploring two methods of usability testing: Proceedings of Concurrent versus retrospective think-aloud protocols. *Professional Communication Conference* (IPCC 2003) (pp. 285-287). IEEE International.

Systematic Self-Report
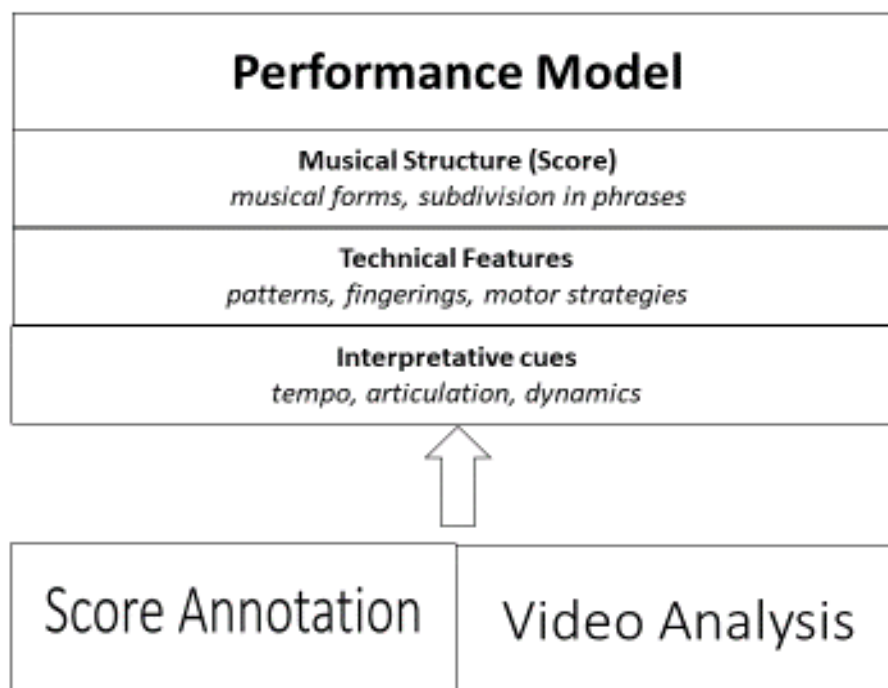
[Bruner 1986; Chaffin–Imreh 2001; Caruso 2018]

Performance Model

Musical Structure (Score)
musical forms, subdivision in phrases

Technical Features
patterns, fingerings, motor strategies

Interpretative cues
tempo, articulation, dynamics

Score Annotation | Video Analysis

Fig. 1. The structure of the oerformance model[33].

This model is used to stimulate *self-reflection* by connecting score analysis and the third-party feedback retrieved in the collection of video recordings made during performance practice and collected in a multimedia archive. Self-analysis allows picturing the evolution of the creative process and gathering and collecting information on the practicing knowledge in/on music performance practice.

This *mirroring* method, applied in instrumental teaching, is a way to facilitate students in mapping their creative process and becoming aware of their musical decision-making and of the external image of themselves perceived by the audience. This approach produces a documentation on performers' creative process useful to also adjust their instrumental approach. The external feedback retrieved in the multimedia archive of recording sessions improve their perception of their internal-external images, the efficiency of their performance and enable data collection on their creative process. The aim is to go beyond the analysis of the score by focussing, instead, on the stylistic and artistic interpretations that each student develop during his/her artistic process and expresses through his/her corporeal approach to the instrument. The critical component of the *mirroring method* stimulates them not to iterate reproductions of established techniques but to develop visual-analytical competences necessary in the evaluation of audio/video recordings of their own performance practice. The third-person feedback retrieved in the audio/video recordings systematically

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[33] *Cf.* Caruso, G. *Mirroring the intentionality…, Op. Cit.*

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provide information on performers' practice. Furthermore, it spurs and nourishes reflections and insights their artistic creative process that can inspire the elaboration of research questions useful for the definition of their artistic identity and future projects.

2.3 *The creative process and the phases of documentation, analysis and dissemination/exposition*

The *mirroring method* wants to intervene on students' habits with a structured reflective approach that can enable them to become aware of their body activity during their performance practice while introducing strategies to organise phases of documentation, analysis and dissemination of their creative process. This approach brings students to a better understanding and improvement of their own musical expressivity in relation interpretation and execution of a score and facilitates the exposition and dissemination of their personal musical achievements. During my workshop, students are asked to systematically analyse and write about their own performance practice by following the structure of the *performance model* mentioned above. This approach recall the Socratic maieutic and the idea of a democratic *knowledge exchange* between teachers and students, rather than a *knowledge transfer*[34]. Students are guided to develop a creative video analysis by experimenting with (a) video cameras positioning to improve visualisation and observation of their practice; (b) open sources and software applications[35]; (c) oral and written description of their own performance practice. The descriptions on their practice - that as in the performance model comprise the analysis of musical structures, technical features and interpretative cues - are systematically compared with the audio/video recordings of a repertory chosen at the beginning of the course. These procedures stimulate the process of continuous review and assessment in music performance practice driven by a systematic observation and evaluation of external feedback, i.e. audio/video recordings, which are becoming more and more precious tools for both the documentation and dissemination of artistic practice[36]. The alignment all these input enhances self-observation and self-evaluation in performance practice and the creation of one's own performance model. In this way, the instrumental learning is inducted through theoretical reflections *in* and *on* action[37] to guide students in analysing their own creative process and in leading and exposing their

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[34] Duffy, C. & Broad, S. (2015). Practising Research, Playing with Knowledge. In M. Doğantan-Dack (Ed.), *Artistic Practice as research in Music: theory, criticism, practice* (pp. 77-88). Ashgate.

[35] Like *Sonic Visualiser* for audio analysis - https://www.sonicvisualiser.org/, *Physmo2* for motion analysis https://physmo.sourceforge.net/ and *ELAN* - for video analysis and annotation-https://archive.mpi.nl/tla/elan

[36] Coessens, K., Crispin, D. & Douglas, A. *The artistic turn…, Op. Cit.*

[37] Schön, D. *The reflective practitioner…, Op. Cit.*

performance practice as a research activity[38]. In short, the steps of the mirroring method consist of:

1. applying a systematic self-observation and self-monitoring during a performance practice;
2. introducing a structure for the documentation of the artistic process by using the performance models and score annotations as reference points;
3. eliciting one's own artistic process through semi-structured oral and written descriptions;
4. mastering interdisciplinary approaches to foster the creation of new artistic projects, or preparatory practice-based research as contents of bachelor's and master's theses and/or future artistic research proposals.

The systematic 'trace' of students' self-description, defined as a core of this procedure, prepares outcome useful for other students and performer-researchers. Thus, the phases of documentation, analysis and dissemination/exposition embedded in this *mirroring* method led to a transformation of instrumental practice into a practice-based research and make possible a coherent trajectory and link between bachelor's and master's theses towards artistic research projects.

3. MIRRORING CREATIVE LAB: a case study at Royal Conservatory of Antwerp

During the years 2021-2023 an application of the mirroring method was experienced in my teaching modules within the Research Practice Program at the Royal Conservatory of Antwerp. My workshop, entitled MIRRORING CREATIVE LAB, included a class group of different instrumentalists (soloist singers and performers) from the classical music department. An interactive and collaborative approach was implemented in order to refresh the traditional teaching, mostly based on a hierarchic professor-student relationship and "mirroring" imitation. According to the mirroring method explained above, students elaborated their own performative trajectory by defining their goals, weaknesses and strength, in order to develop their own artistic autonomy and identity, and to develop skills to approach an artistic path oriented to both performance practice and artistic research. Through practical corporeal exercises linked to yoga training, they are guided to prepare their presence on the performance space and to achieve a "performative state" on stage, i.e. self-confidence and concentration[39]. During the workshop, students are also asked to align score interpretation and gestural execution by analysing three video recordings made in three different moments of their practicing: at the beginning, in the middle of the procedure and at the end. This allows them to define their performance model and to answer to specific research questions linked to their

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[38] Schwab, M. & Borgdorff, H. (2013). *The Exposition of Artistic Research*. Publishing Art in Academia 01. Orpheus Institute.

[39] The integration of yoga training into instrumental learning is a revolutionary practice nowadays used by different music performing coaches. See the interview to pianist Gloria Campaner in *ITAMAR* (9, 2023), 263-266.

investigation *in* and *on* their performance practice. Often, this research questions concern ways to improve posture to the instrument, tensions in the muscles, or historical and creative new interpretation of the score. The knowledge gathered from this "guided" but critical self-approach is the content of both their final performance and their research path.

Here are some feedback gathered from students attending the workshop at the Royal Conservatory of Antwerp in the year 2021-2023.

For me it was very useful because now I have a very clear methodology to start studying a piece on my own. For example, the fact we work with video recordings has helped me a lot […] I discovered some tension while playing I didn't notice before. We also met up several times to evaluate what we already did and what the next step would be. This was very helpful for me, because it was a whole other way of learning a piece then I was used to. In order to study a piece by yourself, it is necessary to do research on the piece. In my case, I did further research on the composition Asturias written by Isaac Albéniz. Next to this I also made a comparison with the piano version of the piece, since it was originally written for piano. This has led to an interesting topic that could be used to write a master thesis about.

Astrid Mertens, guitarist. Bachelor 3

I was more conscious of the science of interpretative history and factors that affect the performances of others. The recordings were made not for the sake of striving for a perfect record of everything at once, but to inspect one specific aspect of one's playing. The course has inadvertently also affected the structure of my master thesis, namely the initial approach to the piece – listening to a plethora of recordings and comparing them, before trying to form a distinct personal interpretation – especially the structure of chapter 4 of my paper, which is devoted to relevant factors that have affected the canonical recordings of the piece.

Benjamin Skorov, violinist. Master student 1

I discovered through the video analysis, that I have unbalanced posture, and a lot of contractures in my neck and trapezius. I fully realised how important it is for me to get my eyes used to the colour of the marimba keys, because when I play, my gaze is most of the time on the keyboard. Colours can disorient me and make me playing wrong notes.

Mario Mascolo, marimbist. Master student 1

4. Discussion and conclusion

The mirroring method experienced in my workshop at the Royal Conservatory of Antwerp wants to contribute enlarging the current higher music education program and offer a nexus between artistic practice and artistic research. My teaching modules are conceived as a propaedeutic stage to gradually prepare

students at conservatories to become independent artist and create performance-based projects. Students' creative trajectory is driven from the bachelor level to the master level in order to expand interdisciplinary approaches on music performance practice that entangle practice-based and score-based analysis and spur them in the writing process of artistic reports, protocols, and proposals, necessary in the elaboration of bachelor's and master's theses and possible doctoral artistic research projects. In this perspective, the main goal of my approach is to stimulate students to a critical judgment and evaluation of their own performance by elaborating a written and oral description of their creative process gathered by the comparison between systematic video analysis and score analysis. Thus, the mirroring method accustoms students to reinforce their:

- critical appraisal on their artistic process;
- physical awareness, regarding also injury prevention;
- visual, auditory, analytical music strategies and written skills to draw up bachelor's and master's theses, and future artistic research proposals;
- management and organisation of their artistic career as professional musicians and/or artist-researchers;
- expressive skills in the communication with the audience and in the dissemination of their artistic work.

The mirroring method provides tools to assess the students' habits in documenting, exposing and disseminating performance practice as a research by using easy-to-use technology as an "augmented" mirror. This approach highlights the active triangulation between performers, as creative actors, the scores and how it is executed on stage. The aim of this cross-discipline approach is to support students in checking and improving their practicing while eliciting their own creative process. By encouraging collaborative learning strategies, in synergy with the existing and main disciplines at conservatories, and a solidification of interactive and intersubjective activities, students build up their own artistic profile as performers or/and as artist-researchers. Further developments and improvements will be experienced with more students, also in the perspective of projects and research on multidisciplinary performances.

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