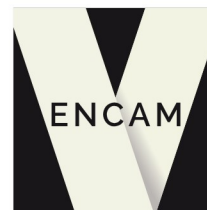




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UNIVERSIDADE FEDERAL DE SERGIPE



A integração perceptivo-cognitivo-motora na aquisição da expertise pianística

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RESUMO

PROBLEMA/QUESTÃO

Pesquisadores que investigam a prática do piano descrevem o desempenho pianístico a partir da técnica pianística (Póvoas, 2008), da percepção visual e auditiva (Lahav, Saltzman & Schlaug, 2007, Herholz & Zatorre, 2012, Leipold, Klein & Jäncke, 2021), do controle motor (Parsons et al., 2005) ou da quantidade de prática (Ericsson & Lehmann, 1996). O modelo tridimensional de expertise proposto por Bilalić (2017) oferece um quadro teórico que considera qualquer expertise em três domínios: perceptivo, cognitivo e motor. Considerando que a música envolve, simultaneamente, o processamento perceptivo visual e auditivo e controle motor refinado (Bilalić, 2017), questiona-se como a compreensão dessas dimensões, de maneira integrada, pode favorecer a aquisição da expertise pianística.

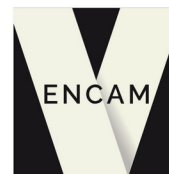
OBJETIVOS

Analisar de que maneira as dimensões perceptiva, cognitiva e motora descritas no modelo proposto por Bilalić (2017) podem favorecer a aquisição da expertise pianística, buscando-se evidenciar processos cognitivos experienciados por pianistas experts.

MÉTODO

Trata-se de uma pesquisa bibliográfica que consistiu na leitura e no fichamento da obra *The Neuroscience of Expertise* (Bilalić, 2017), além da análise de estudos empíricos sobre expertise musical envolvendo a prática deliberada (Ericsson & Lehmann, 1996), o reconhecimento de padrões, memória e chunkings (Gobet & Simon, 1996, Lima & Ramos, 2024) e a interação auditivo-motora (Zatorre, Chen & Penhune, 2007). 23 estudos foram selecionados por meio de buscas na Base de Periódicos da Capes, Scopus e SciELO,





utilizando os descritores: percepção, cognição e motricidade de pianistas. A análise dos dados envolveu uma categorização temática dos fichamentos a partir da análise de conteúdo (Bardin, 2016) tomando como eixo estruturante as dimensões perceptiva, cognitiva e motora da expertise. Os estudos selecionados foram examinados à luz dessas categorias, permitindo identificar convergências entre as evidências encontradas nesses estudos e o modelo de Bilalić (2017).

RESULTADOS E/OU PRINCIPAIS CONTRIBUIÇÕES

A expertise pianística emerge da integração perceptiva-cognitiva-motora moldada pela prática prolongada (Herholz & Zatorre, 2012). No plano perceptivo, pianistas experts desenvolvem elevada sensibilidade para reconhecer padrões musicais visuais e auditivos de forma rápida e eficiente (Lahav et al., 2007). No plano cognitivo, a literatura sobre expertise musical sugere que a organização de representações estruturadas na memória de longo prazo permite antecipação e redução da sobrecarga da memória de trabalho durante a performance (Lehmann & Ericsson, 1996, Palmer, 1997). Quanto ao plano motor, observa-se mudanças estruturais e funcionais no cérebro de pianistas que envolvem o aperfeiçoamento da coordenação bimanual e a automatização no controle motor complexo (Parsons et al., 2005, Zatorre et al., 2007). Portanto, nota-se que a expertise pianística não pode ser explicada pelas dimensões isoladas, mas pela articulação dinâmica entre antecipação perceptiva, organização cognitiva e controle motor preditivo.

CONCLUSÕES E/OU IMPLICAÇÕES

O modelo tridimensional de expertise proposto por Bilalić (2017) constitui um referencial teórico consistente para compreender a performance pianística de forma integrada, evidenciando que as dimensões perceptiva, cognitiva e motora operam como sistemas interdependentes moldados pela experiência. A expertise pianística é explicada pela interação dinâmica entre essas dimensões, deslocando o foco de fatores isolados para a coordenação entre sistemas, com implicações para pesquisas em cognição e expertise musical e pedagogia do piano.

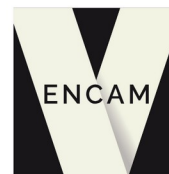
PALAVRAS-CHAVE

expertise pianística, percepção, cognição, motricidade.

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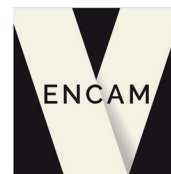
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Perceptual-cognitive-motor integration in the acquisition of pianistic expertise

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ABSTRACT

RESEARCH QUESTION/PROBLEM

Researchers investigating piano practice describe pianistic performance based on pianistic technique (Póvoas, 2008), visual and auditory perception (Lahav, Saltzman & Schlaug, 2007; Herholz & Zatorre, 2012; Leipold, Klein & Jäncke, 2021), motor control (Parsons et al., 2005), or the amount of practice (Ericsson & Lehmann, 1996). The three-dimensional model of expertise proposed by Bilalić (2017) offers a theoretical framework that considers any expertise in three domains: perceptual, cognitive, and motor. Considering that music simultaneously involves visual and auditory perceptual processing and refined motor control (Bilalić, 2017), the question arises as to how understanding these dimensions in an integrated way can favor the acquisition of pianistic expertise.

OBJECTIVES

To analyze how the perceptual, cognitive, and motor dimensions described in the model proposed by Bilalić (2017) can favor the acquisition of pianistic expertise, seeking to highlight cognitive processes experienced by expert pianists.

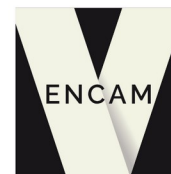
METHOD

This is a bibliographic research that consisted of reading and summarizing the work The Neuroscience of Expertise (Bilalić, 2017), in addition to analyzing empirical studies on musical expertise involving deliberate practice (Ericsson & Lehmann, 1996), pattern recognition, memory and chunking (Gobet & Simon, 1996, Lima & Ramos, 2024) and auditory-motor interaction (Zatorre, Chen & Penhune, 2007). Twenty-three studies were selected through searches in the Capes Periodicals Database, Scopus, and SciELO, using the descriptors: perception, cognition, and motor skills of pianists. Data analysis involved a thematic categorization of the summaries based on content analysis (Bardin, 2016), taking as a structuring axis the perceptual, cognitive, and motor dimensions of expertise. The selected studies were examined considering these categories, allowing us to identify convergences between the evidence found in these studies and Bilalić's model (2017).

RESULTS AND/OR MAIN CONTRIBUTIONS

Pianistic expertise emerges from the perceptual-cognitive-motor integration shaped by prolonged practice (Herholz & Zatorre, 2012). On the perceptual level, expert pianists develop a high sensitivity to recognize visual and auditory musical patterns quickly and efficiently (Lahav et al., 2007). On the cognitive level, the literature on musical expertise





suggests that the organization of structured representations in long-term memory allows for anticipation and reduction of working memory overload during performance (Lehmann & Ericsson, 1996; Palmer, 1997). Regarding the motor level, structural and functional changes are observed in the brains of pianists involving the improvement of bimanual coordination and automatization in complex motor control (Parsons et al., 2005; Zatorre et al., 2007). Therefore, it is noted that pianistic expertise cannot be explained by isolated dimensions, but by the dynamic articulation between perceptual anticipation, cognitive organization, and predictive motor control.

CONCLUSIONS AND/OR IMPLICATIONS

The three-dimensional model of expertise proposed by Bilalić (2017) constitutes a consistent theoretical framework for understanding piano performance in an integrated way, highlighting that perceptual, cognitive, and motor dimensions function as interdependent systems shaped by experience. Piano expertise is explained by the dynamic interaction between these dimensions, shifting the focus from isolated factors to the dynamics between systems, with implications for research in cognition and musical expertise and piano pedagogy.

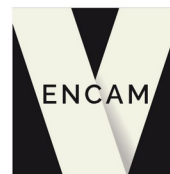
KEYWORDS

pianistic expertise, perception, cognition, motor skills.

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