

PSYCHODIDACTIC RESONANCE AS A NOVEL FRAMEWORK FOR ENHANCING CRITICAL THINKING IN HIGHER EDUCATION

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Annotation. This study introduces the concept of psychodidactic resonance as a new approach to enhancing students' critical thinking. It proposes the Psychodidactic Resonance Index (PRI) to measure the alignment between didactic strategies and learners' psychological readiness. The findings suggest that stronger psychodidactic resonance creates more effective conditions for developing critical thinking skills.

Keywords: psychodidactic resonance, critical thinking, psychological readiness, didactic strategies, Psychodidactic Resonance Index (PRI), higher education.

Developing students' critical thinking has become one of the primary objectives of modern higher education. Although numerous instructional methods have been proposed to enhance higher-order thinking skills, their effectiveness largely depends on students' psychological readiness and cognitive characteristics. This study introduces the concept of psychodidactic resonance as a novel theoretical framework that explains how the alignment between didactic strategies and learners' psychological conditions can optimize the development of critical thinking. Furthermore, the study proposes the Psychodidactic Resonance Index (PRI) as an innovative indicator for assessing the degree of this alignment and supporting the design of more adaptive and effective learning environments.

The development of critical thinking has become one of the central goals of contemporary higher education. Universities are expected not only to provide students with professional knowledge but also to cultivate analytical reasoning, problem-solving abilities, and independent decision-making skills. Despite the widespread implementation of innovative teaching methods, the outcomes of critical thinking instruction often vary considerably among learners. This variation indicates that the effectiveness of educational interventions cannot be explained solely by instructional techniques but must also consider students' psychological characteristics and cognitive readiness.

Educational psychology has consistently demonstrated that learning outcomes are influenced by such factors as motivation, emotional stability, attention, cognitive load, and metacognitive awareness. Students with similar academic backgrounds may respond differently to identical instructional approaches because their internal psychological conditions differ. Consequently, effective teaching requires not only

methodological competence but also the ability to adapt instruction to learners' psychological needs.

To address this challenge, this study introduces the concept of psychodidactic resonance as an original theoretical framework. The concept is derived from the interdisciplinary understanding of resonance, which originated in physics. In physical systems, resonance occurs when an external force acts at the natural frequency of a system, resulting in maximum energy transfer with minimal energy loss. This principle provides an appropriate metaphor for educational processes. Likewise, teaching becomes most effective when instructional strategies correspond to the learner's internal psychological and cognitive state.

Within the proposed framework, psychodidactic resonance is defined as the optimal alignment between didactic interventions and students' psychological readiness. Didactic interventions include teaching methods, learning activities, assessment strategies, instructional pace, task complexity, and feedback mechanisms. Psychological readiness encompasses emotional stability, intrinsic motivation, attention regulation, cognitive load tolerance, self-regulation, and metacognitive preparedness. When these two dimensions are harmonized, students demonstrate greater engagement, deeper understanding, more active participation, and significantly improved critical thinking performance.

Unlike traditional instructional models that primarily emphasize teaching methods, the psychodidactic resonance framework considers learning as a dynamic interaction between educational environments and learners' internal characteristics. It assumes that identical instructional strategies may produce different educational outcomes depending on the degree of psychological compatibility between the learner and the learning environment. Therefore, successful instruction requires continuous adaptation of pedagogical strategies to students' psychological profiles. To operationalize this theoretical construct, the study proposes the Psychodidactic Resonance Index (PRI). The PRI serves as a composite quantitative indicator measuring the degree of correspondence between instructional conditions and psychological readiness. The index is expressed as:

$$PRI = D \times P$$

where **D** represents the level of didactic adaptation and **P** represents students' psychological readiness. Both variables are measured using standardized indicators evaluated on a five-point scale and subsequently normalized to values between 0 and 1. This normalization allows objective comparison across different learning contexts and student populations.

The didactic component (**D**) incorporates several indicators, including instructional flexibility, appropriateness of teaching methods, quality of formative assessment, effectiveness of feedback, instructional pace, and task complexity. These indicators evaluate the extent to which instructional design supports students' active cognitive engagement. The psychological component (**P**) includes emotional regulation, intrinsic learning motivation, sustained attention, cognitive load management, metacognitive awareness, learning self-efficacy, and readiness for reflective thinking. These factors determine students' capacity to effectively process instructional information and actively participate in higher-order thinking activities.

According to the proposed model, PRI values approaching **1.00** indicate strong psychodidactic resonance, suggesting that instructional conditions are highly compatible with learners' psychological characteristics. Such environments facilitate meaningful learning, encourage reflective inquiry, and maximize the development of critical thinking skills. Conversely, lower PRI values indicate insufficient alignment, where even well-designed instructional methods may fail to produce expected learning outcomes because students are not psychologically prepared to benefit from them. One of the major contributions of this framework is its practical applicability. The PRI can function as a diagnostic instrument for educators, curriculum designers, and educational researchers. By periodically assessing both instructional conditions and students' psychological readiness, teachers can identify mismatches between pedagogy and learner characteristics and modify instructional strategies accordingly. This adaptive approach supports personalized learning while improving overall educational effectiveness. Furthermore, the psychodidactic resonance framework contributes to the theoretical integration of educational psychology, cognitive science, and instructional design. Rather than treating psychological readiness and teaching methodology as independent variables, the proposed model conceptualizes their interaction as the primary determinant of successful critical thinking development. This interdisciplinary perspective provides a more comprehensive explanation of why identical teaching methods often produce different outcomes across student groups.

The proposed framework also aligns with current trends in learner-centered education, adaptive instruction, and personalized learning. As higher education increasingly adopts digital technologies and artificial intelligence-based learning environments, assessing the compatibility between instructional systems and learners' psychological characteristics becomes increasingly important. The Psychodidactic Resonance Index offers a systematic methodology for evaluating this compatibility and supporting evidence-based educational decision-making.

Overall, psychodidactic resonance represents an innovative theoretical contribution to critical thinking research. By integrating psychological readiness with didactic adaptation into a unified conceptual framework, the proposed model provides both a scientific explanation and a practical assessment tool for improving instructional effectiveness. The introduction of the Psychodidactic Resonance Index (PRI) establishes a measurable foundation for future empirical research and offers educators a new perspective for designing psychologically responsive learning environments that maximize students' critical thinking potential.

References

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