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The Relationship Between the Methodological Foundations of The Praxeological Approach in Pedagogy and The Concept of Instructional-Methodological Competence

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Abstract: This article explores how the methodological foundations of the praxeological approach—conceived as the study of efficient, purposeful, and improvable human action—provide a coherent basis for shaping and assessing instructional-methodological competence in teacher education. Building on classic praxeological principles such as goal-orientation, economy of means, verification through feedback, and iterative improvement, the paper conceptualizes instructional-methodological competence as a composite capacity that integrates curricular reasoning, pedagogical content knowledge, assessment literacy, resource design, classroom enactment, reflective analysis, and evidence-informed redesign. Methodologically, the study follows a theory-building design that synthesizes foundational texts in praxeology with established pedagogical theories, including experiential learning, reflective practice, knowledge-in-action, design-based problem solving, and TPACK. The paper concludes that praxeology not only offers a vocabulary for efficiency and improvement but also anchors instructional-methodological competence in a falsifiable, evidence-seeking, and ethically responsible model of professional action.

Keywords: Praxeology; praxeological approach; instructional-methodological competence; teacher education; reflective practice; TPACK; formative assessment; lesson study; design-based learning.

Introduction: Praxeology, originating in the Polish school of efficiency studies, examines purposeful action with a focus on effectiveness, economy, and improvement. When transposed to pedagogy, praxeology reframes teaching not merely as delivery of content or compliance with curricular prescriptions but as a disciplined practice of designing, enacting, and refining instruction toward specified learning results under concrete constraints. This perspective places the teacher's work within a cycle that begins with the formulation of ends and criteria, proceeds through the selection and arrangement of means, and culminates in verification that learning outcomes are achieved relative to costs and context. Such a cycle aligns closely with contemporary understandings of professional learning as iterative and evidence seeking, and with the growing expectation that teacher education programs produce graduates capable of diagnosing learning needs, planning coherent sequences, mobilizing resources, orchestrating classroom processes, and improving their designs through feedback and reflection.

Instructional-methodological competence is often defined as the integrated capacity to perform these tasks in a principled way. It synthesizes curricular knowledge, pedagogical content knowledge, technological and organizational savvy, assessment literacy, and the dispositions necessary to adapt and learn from practice. The literature on reflective practice and experiential learning has long emphasized that professional knowledge emerges in action and through systematic reflection on that action. This observation renders praxeology a particularly suitable methodological ground for teacher education: it offers a theory of efficient action that is intrinsically linked to verification and improvement, while education supplies the moral and contextual bearings that differentiate teaching from other domains of production.

Despite their natural affinity, the connection between praxeological method and instructional-methodological competence is rarely made explicit in program design and assessment. Competency frameworks often list knowledge and skills in a decontextualized manner, whereas praxeology insists on articulating ends, means, constraints, and tests of success with respect to concrete instructional problems. Conversely, praxeological writing sometimes abstracts from the ethical, developmental, and relational particularities of classrooms. The purpose of this article is to bridge these discourses by elaborating a framework in which praxeological principles guide the development and evaluation of instructional-methodological competence across the

full arc of planning, enactment, assessment, and redesign.

The study employs a theory-building approach that integrates conceptual analysis and structured synthesis of classic and contemporary sources. Foundational praxeological concepts are drawn from the seminal treatise on "good work," which articulates the axioms of purposeful action, the necessity of economy, the role of verification, and the imperative of improvement. These are read alongside pedagogical theories that ground teaching as a reflective and experiential practice, including experiential learning models that specify cycles of concrete experience, reflective observation, abstract conceptualization, and active experimentation; reflective practice traditions that describe the iterative interplay of knowing-in-action, reflection-in-action, and reflection-on-action; curriculum scholarship that treats curriculum as a design for learning and emphasizes constructive alignment; knowledge frameworks that distinguish and integrate content, pedagogy, and technology; and assessment research that foregrounds formative uses of evidence.

Sources were selected to cover three domains: praxeological theory of action; teacher knowledge and curriculum design; and assessment for learning. Within each domain, texts were examined for explicit statements on goals, means, constraints, verification, and improvement. The analysis proceeded by coding statements that bear on efficiency, alignment, error-proofing, and iterative refinement, and by mapping these codes onto common tasks of teacher work, such as setting learning targets, selecting representations and tasks, designing materials, orchestrating classroom activity, eliciting evidence, and using feedback to redesign. The resulting mappings were refined in light of school-based literature on lesson study, design-based research in classrooms, and performance-based assessment. Although the study is conceptual, it is oriented to practice: each mapping is interpreted as a heuristic that programs may use to design coursework, practicum experiences, and evaluation instruments.

The synthesis yields a framework that positions instructional-methodological competence as a praxeological capacity to design, enact, and improve instruction under real constraints. The first result concerns goal specification and alignment. In praxeology, the clarity and testability of ends are prerequisites for evaluating action. Transposed to pedagogy, this means formulating learning objectives with criteria that enable verification and designing tasks, materials, and assessments that make those criteria observable. Instructional alignment is thus not a bureaucratic checklist but a logical consequence of action directed toward testable ends. The competence

at stake is the ability to represent content in ways that reveal the intended learning, to stage activities so that evidence of progress becomes visible, and to ensure that assessments capture the understanding the tasks aim to cultivate.

The second result pertains to the economy of means and the design of didactic resources. Economy in praxeology is not mere frugality; it is the disciplined selection of means that offer the best expected return given the ends and constraints. In instructional design, this favors tasks that concentrate on generative representations and productive struggle, materials that reduce extraneous cognitive load while preserving desirable difficulties, and technological tools whose affordances are matched to pedagogical purposes rather than adopted for their novelty. The relevant competence is an ability to curate content, tools, and routines such that students' limited time and attention are directed to the conceptual heart of the matter.

The third result links verification to assessment for learning. Praxeology insists that action be subjected to tests that can falsify or corroborate its effectiveness. In classrooms, this maps onto formative assessment practices that elicit evidence of student thinking during instruction, interpret it against explicit criteria, and use the findings to adjust the trajectory of the lesson. Instructional-methodological competence thus includes assessment literacy oriented to decision making: designing prompts that surface misconceptions and partial understandings, creating rubrics that define quality without constraining creativity, and developing routines for feedback that is timely, specific, and actionable for students.

A fourth result concerns error-proofing and routine design. Praxeological analysis treats errors as information about system design, not only as individual failings. In teacher practice, this leads to the design of classroom routines that pre-empt predictable breakdowns and distribute cognitive resources wisely. Staging transitions, specifying turn-and-talk protocols, structuring group roles, and sequencing representations all operate as poka-yoke mechanisms that reduce the probability or impact of error while increasing time on learning. The associated competence is the ability to engineer classroom activity systems that make the desired behaviors and forms of thinking the path of least resistance.

The fifth result is the articulation of feedback loops and improvement cycles as the engine of professional growth. Praxeology treats improvement as a repeated passage through cycles of planning, acting, checking, and adjusting. When embedded in teacher education, this becomes the logic of microteaching, lesson study,

and design-based practicum, where candidates plan a lesson with explicit hypotheses about how learning will unfold, enact it while collecting evidence, analyze the results against the hypotheses, and redesign accordingly. Competence here is the ability to formulate and test practical theories of action, to gather and interpret data, and to embody a reflective stance that is both critical and constructive.

Finally, the framework addresses the criterion of cost-effectiveness in ethically and contextually responsible terms. Efficiency in education cannot be reduced to throughput or standardized test gains; rather, it must be tied to developmental appropriateness, equity of access to rich learning, and long-term capability building. Instructional-methodological competence therefore includes the judgment to weigh trade-offs between short-term performance and durable understanding, between coverage and depth, and between procedural fluency and conceptual insight. Praxeology contributes a disciplined calculus of means and ends, while pedagogy supplies the value commitments that determine what counts as a good outcome.

The proposed framework clarifies the relationship between praxeological method and instructional-methodological competence by showing that the very structure of competent teaching mirrors the praxeological arc from ends to means to tests to improvement. This perspective has several implications for teacher education curricula. First, courses on curriculum and instruction should explicitly teach the logic of alignment as a praxeological necessity rather than an external compliance demand. Candidates who learn to articulate measurable criteria and to design tasks whose successful completion evidences those criteria acquire not just a technique but a disciplined way of thinking about teaching. This aligns with scholarship on constructive alignment and with research on knowledge growth in teaching, which underscores the centrality of representational choices and task design in shaping student learning.

Second, praxeology strengthens the case for integrating assessment literacy across coursework and practicum. If verification is constitutive of efficient action, then formative assessment is constitutive of competent teaching. Programs should therefore require candidates to generate and justify their formative probes, to construct rubrics that define quality in terms students can internalize, and to practice responsive moves that exploit assessment information in real time. This emphasis echoes the formative assessment literature and reframes assessment as a practical art of evidentiary reasoning.

Third, the economy of means invites a sober

reassessment of educational technologies and materials. A praxeological lens demands that each tool's affordances be appraised against explicit pedagogical ends and constraints. TPACK offers a conceptual architecture for such deliberation by integrating technological knowledge with pedagogy and content rather than subordinating one to the other. Within this architecture, competence becomes the capacity to craft minimalist, high-yield designs: representations that illuminate structure, tasks that elicit core reasoning, and tools that extend conceptual reach without distracting from it.

Fourth, lesson study and other collaborative improvement methods appear as natural instantiations of praxeological cycles. When candidates work in teams to plan, enact, observe, and revise lessons, they enact the full logic of goal specification, means selection, verification, and adjustment. Embedding such cycles across the practicum allows instructional-methodological competence to develop through deliberate practice, with each iteration documented in an evidence-rich portfolio that includes plans, student work samples, observation notes, and analysis. Such portfolios operationalize the praxeological demand for verifiable improvement, making growth visible to candidates, mentors, and program evaluators.

Fifth, the framework clarifies how to design performance-based assessment of competence. Rubrics can be organized around the six dimensions identified above, with behavioral indicators and evidentiary sources associated with each. For example, in the alignment dimension, evaluators might look for the explicitness and teachability of success criteria and for the degree to which tasks and questions elicit evidence relevant to those criteria. In the economy dimension, they might examine whether materials reduce extraneous load and whether classroom time is used to advance the conceptual agenda. In the verification dimension, they could analyze the quality of formative prompts, the validity of interpretations, and the timeliness of feedback. Such rubrics answer the praxeological call for clarity about what constitutes good work while respecting the complexity of teaching.

At a deeper level, praxeology helps reconcile two tendencies that sometimes pull teacher education in opposite directions: the demand for measurable results and the commitment to holistic, equitable learning. By insisting that ends be explicit and testable, praxeology supports accountability; by foregrounding constraints and costs, it prompts attention to the conditions of practice and to the unintended consequences of narrow metrics. When suffused with

pedagogical ethics, the praxeological approach yields a model of competence that is both rigorous and humane: rigorous because it demands evidence of effect, humane because it recognizes that good instruction optimizes for long-term understanding, autonomy, and inclusion, not merely for short-term scores.

Finally, the framework suggests a research agenda. Empirical work can test the reliability and validity of the proposed rubrics; evaluate the effects of praxeologically structured coursework and practicum on novice performance; and trace how candidates' evidentiary reasoning evolves as they engage in cycles of design, enactment, and redesign. Mixed-methods studies could relate rubric scores to student learning gains and analyze portfolio artifacts to understand the micro-mechanisms of improvement. Such research would refine the theoretical mapping and inform program accreditation standards that foreground demonstrable growth in instructional-methodological competence.

Praxeology offers a powerful methodological foundation for conceptualizing and developing instructional-methodological competence. By treating teaching as a species of purposeful action subject to verification and improvement under constraints, praxeology provides a disciplined logic that runs from the articulation of ends, through the selection and arrangement of means, to the testing of effectiveness and the redesign of action. When woven together with established educational theories of knowledge, learning, and assessment, this logic yields a coherent framework in which competence is defined not by lists of decontextualized skills but by the capacity to align goals, designs, enactments, and evidence in cycles of increasingly effective practice. For teacher education, the implications are concrete: design curricula that teach alignment as a praxeological necessity; embed assessment literacy as verification in action; cultivate the economy of means through principled selection of representations, tasks, and tools; organize practicum around collaborative improvement cycles; and assess competence through performance-based rubrics that make growth visible and consequential. Such a program honors both the rigor and the humanity of teaching by demanding evidence of effect while situating action within ethical and contextual constraints. In doing so, it equips future teachers with the habits of mind and repertoires of practice necessary to design instruction that is at once efficient, equitable, and improvable.

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