Practice and Internship: School as a Laboratory, Not a Testing Ground

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Fractal Academy
Issue 6 (Autumn 2026), Article 6
Series: "Pedagogical Education in the CCFP Model: From Subject-Centrism to the Development of Thinking"
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DOI: [to be assigned]
Publication date: 1.11.2026

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Title (English): «Practice and Internship: School as a Laboratory, Not a Testing Ground»
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Annotation

In this article I show how the pedagogical practice of students must be restructured in the CCFP paradigm. My key thesis: traditional practice, where the student "sits at the back desk and watches," must give way to practice as scientific inquiry, where the student acts in the role of a "teacher-researcher." Drawing on the CCFP model presented in previous issues of the series, on the conceptions of the "rich cognitive niche" and the "zone of proximal development," as well as on current research of 2024-2026, I substantiate that the school must become for the student a laboratory in which he conducts the diagnostics of mental mechanisms (with priority given to the core), tests lessons with a dual purpose, assembles a diagnostic portfolio, and reflects on his own practice. I pay special attention to the role of the mentor, who turns from a "transmitter of methodologies" into a "research supervisor," and to how the results of such practice should be assessed - not by formal reports, but by real changes in the thinking of the students and of the student himself. I show that properly organized practice is the point of entry into overcoming epistemological recursion, where the future teacher does not simply reproduce the old model, but creates a new one.

Keywords: pedagogical practice, internship, school as laboratory, diagnostics, dual purpose, portfolio, mentoring, reflection, cognitive niche, epistemological recursion.

Introduction: Why Practice Is Not "Observation"

In the previous article I announced that practice must become "the school as a laboratory, and not a proving ground" [5]. Now I must show how this looks in practice. Traditionally pedagogical practice at the university is arranged as follows: the student comes to the school, sits at the back desk, observes the teacher's lesson, writes in a diary, and then conducts several lessons himself according to ready-made methodological designs. At the end he writes a report that no one reads attentively. This is not practice. It is the imitation of practice. The student does not learn to see how students think. He does not learn to diagnose the level of development of mental mechanisms. He does not learn to design lessons with a dual purpose. He simply reproduces what he himself saw when he was a schoolchild. And this is precisely the mechanism of the epistemological trap [6] - the cycle of the reproduction of the old model. It is like wanting to teach someone to swim by showing him photographs of swimmers and making him memorize the names of the styles. One can learn everything in the world, but, having found himself in the water, such a "knower" will sink to the bottom. Practice must be the water in which the student learns to swim - not from pictures, but in real movement, with real risk and real support.

Research confirms: "the ability to effectively assess learning situations is a critical component of teachers' professional competencies, especially in the diagnostics of learning difficulties and the potential of students in heterogeneous classes" [6]. But this ability is not formed through observation. It is formed through action. That is precisely why I insist: practice must become for the student a laboratory. Not a place where he "watches," but a place where he "investigates." What is the difference between a laboratory and a proving ground? A proving ground is a place where ready-made samples are tested. The student comes to the proving ground in order to "show" what he has learned at the university. He acts according to instructions, fulfills standards, and receives a grade. This is a passive position. A laboratory is a place where new knowledge is created. The student comes to the laboratory in order to investigate: how does the student's thinking work? what conditions are needed for its development? what happens when I apply this or that method? This is an active, research position. In the CCFP model the school as a laboratory

is not a metaphor. It is the designing of a "rich cognitive niche" (Issue 3, Art. 13), in which every element of the environment - from the task to the classroom setting - works for the development of mental mechanisms.

What does this mean for the student? The student does not "undergo practice," but "conducts research." He does not "complete assignments," but "sets up experiments." He does not "receive a grade," but "draws conclusions." He does not "submit a report," but "defends the results of the research." Researchers emphasize that "instructional (technological in pedagogy) practice" is an effective means of forming the meta-subject competence of future teachers. The results show that "the implementation of the content of the practice allowed third-year students to actualize their own experience and to master innovative forms and methods of instruction directed toward the formation and achievement of their own meta-subject competence" [7]. It is precisely such practice - not "observation," but "lived experience" of the new pedagogical reality - that must become the basis of teacher preparation.

Stages of Practice: From Diagnostics to Reflection

How must practice be organized so that it becomes a laboratory? I propose four stages that the student passes through during the academic year. The first stage is diagnostic. Goal: to learn to see the thinking of students. The student observes the students in lessons (not the teacher, but the students!). He records the manifestations of mental mechanisms (with an accent on the core - MM-1, MM-3, MM-5, MM-6, MM-10, MM-11). He conducts diagnostic tasks (from article 3 [3]). He keeps a diary of observations. What does he look for? How does the student build cause-and-effect relationships (MM-1)? How does he recognize emotions (MM-3)? How does he ask questions (MM-5)? How does he evaluate information (MM-6)? How does he visualize (MM-10)? How does he forecast (MM-11)? The result of the stage: the student learns to see not "right" and "wrong" answers, but the levels of development of the mechanisms in concrete students. It is as if he had received a new sense organ - the ability to see the invisible.

The second stage is design. Goal: to learn to design lessons with a dual purpose. The student develops lessons in which subject content is combined with the development of concrete mental mechanisms. He uses the principle of the "dual purpose of a topic" (from article 4 [4]). He creates diagnostic tasks that simultaneously teach and diagnose. He designs the environment (how to use the school's infrastructure - studios, workshops, laboratories - for the development of thinking). What does he take into account? Which mechanisms does he want to develop in this lesson? How will he diagnose their development? How will he use the unique abilities of the students? The result of the stage: the student creates a portfolio of lessons with a dual purpose, in which it is clearly written what is developed and how.

The third stage is facilitative, or the stage of action. Goal: to learn to facilitate the thinking of students. The student conducts lessons with a dual purpose. He asks open questions (MM-5). He organizes discussions and debates (MM-7). He creates a psychologically safe environment. He works with the unique abilities of students. He gives developmental feedback. What does he observe? How do the students react to his questions? How do they participate in the discussion? How do they cope with difficulties? How do they use their strengths? The result of the stage: the student gains real experience of facilitation and learns to adapt his actions in real time. It is like the first solo flight for a pilot: the instructor no longer holds the controls, but he is nearby, ready to support.

The fourth stage is reflective. Goal: to learn to analyze and correct one's practice. The student analyzes video recordings of his lessons. He compares the results of diagnostics before and after. He writes reflective essays. He participates in reflective sessions with the mentor and fellow students. He corrects his approaches on the basis of the analysis. What does he analyze? What worked? What did not work? Which mechanisms developed? Which did not? What would I do differently? What did I learn about myself as a facilitator? The result of the stage: the student learns to see his professional growth and to correct his practice. It is like the return of a climber to the foot of the mountain: he looks at the path traversed and understands where he stumbled and where he found the right trail.

Instruments of Practice: From the Diary to the Portfolio

In order for practice to become a laboratory, the student needs instruments. I propose five key instruments. The first is the observation diary. This is not a "practice diary" written for a report. It is a working instrument of the researcher. What should be in it? Dates of observations. Descriptions of situations (what the student did, what he said, how he reacted). Hypotheses about the level of development of mechanisms. Questions that arose. Connection with theory (which mechanisms are manifested?). How to keep it? Daily (or after each lesson). Briefly, but concretely (not "the

student was active," but "the student asked the question 'why?', which shows MM-5"). The second instrument is the portfolio of lessons with a dual purpose. This is a collection of lessons developed by the student, in which it is clearly written: subject content; meta-subject potential (which mechanisms are developed); methodology of actualization (how exactly the instruction is organized); diagnostic tasks; results (what worked in practice). How to use it? For analyzing one's own progress. For exchanging experience with fellow students. For defending the results of practice.

The third instrument is the diagnostic portfolio of the student. This is a collection of data on the development of a concrete student (or several students): the results of diagnostic tasks; observations of behavior; the student's reflective records; the student's works (essays, solutions of tasks, projects); dynamics (comparison of "before" and "after"). How to use it? For tracking progress. For correcting individual trajectories. For understanding how the mechanisms work. The fourth instrument is video recordings of lessons. This is an instrument for analyzing one's own practice. What to analyze? How do I ask questions (MM-5)? How do I react to mistakes? How do I manage group dynamics? How do I use non-verbal communication (MM-8)? How to analyze? View the recordings with the mentor. Note the moments that one wants to change. Compare recordings at the beginning and at the end of the practice. The fifth instrument is the reflective diary. This is an instrument for comprehending one's own experience. What should be in it? Descriptions of situations. Analysis (what worked, what did not, and why). Conclusions (what I understood, what I will change). Questions to oneself and to theory. How to keep it? Regularly (once a week or after key events). Honestly (not for a report, but for oneself). Research shows that "reflective self-assessment and collaborative project work" are key elements of the development of critical thinking [7]. The portfolio and the reflective diary are instruments that make reflection systemic. Without them practice risks turning into a chaotic accumulation of experience that is not comprehended and does not turn into knowledge.

The Role of the Mentor: From "Transmitter of Methodologies" to "Research Supervisor"

Practice cannot be effective without a mentor. But the role of the mentor too is changing. The traditional mentor is a teacher who "shows how it should be done." He gives ready-made methodologies, checks their fulfillment, and evaluates the result. The new mentor is a research supervisor. He does not "show how it should be done," but "helps to investigate." He asks questions, directs the analysis, and helps to see what the student does not notice. What does the mentor do? He helps the student to formulate hypotheses about the development of mechanisms. He discusses observations and diagnostic data with him. He analyzes video recordings of lessons together with him. He helps to see the connection between theory and practice. He supports in difficult situations. He gives feedback, but not an "evaluation," but "food for thought." What does the mentor not do? He does not give ready-made recipes. He does not evaluate "right/wrong." He does not demand "do as I do." Researchers emphasize the importance of "video vignettes" for the development of diagnostic skills. Students watch video recordings of lessons and learn to see what happens at the level of the students' thinking [6]. The mentor in this process is not an "expert," but a "partner in inquiry." It is like a research laboratory: the supervisor does not dictate what and how to do, but helps the young researcher to find his own path by asking the right questions and supporting him in moments of doubt.

Assessment of Practice: By Results, and Not by Reports

How should the results of such practice be assessed? Traditionally the student writes a report that the methodologist checks. But this does not work. I propose to assess practice by real results. The first criterion is the dynamics of the students' development. Is there progress in the development of mental mechanisms in those students with whom the student worked? (Comparison of "before" and "after"). The second is the quality of the lessons developed. To what extent do the lessons really realize the principle of dual purpose? (Analysis of the portfolio). The third is the depth of reflection. To what extent is the student able to analyze his practice and draw conclusions? (Analysis of the reflective diary). The fourth is professional growth. How has the student himself changed? (Comparison of video recordings, self-assessment). What does this mean for assessment? Assessment must be formative (not "assign a grade," but "give feedback"), criterion-based (clear criteria, and not "like/dislike"), and evidence-based (portfolio, video recordings, diagnostic data). Researchers note that "teacher education programs should systematically integrate reflective pedagogical projects, formative assessment rubrics and culturally relevant learning tasks into their curricula" [6]. The assessment of practice is not "control," but "support" of professional growth. It is like a mirror for the student: he sees himself not in the distorted reflection of a grade, but in the precise and benevolent reflection of his actions and possibilities.

What the Student Must Take Away from Practice

I conclude this article with a concrete answer to the question: what must the student take away from practice? He must know how to diagnose mental mechanisms in real students; how to design lessons with a dual purpose; how to facilitate the thinking of students; how to work with unique abilities; and how to analyze and correct his practice. He must be able to see in the behavior of students the manifestations of mental mechanisms; to create diagnostic tasks; to ask open questions; to manage group dynamics; to give developmental feedback; and to reflect on his practice. He must be a researcher, and not an executor; a facilitator, and not a transmitter; a partner, and not a controller; a reflective practitioner, and not a "mechanical" teacher.

Conclusion: Practice as the Point of Entry into the New Paradigm

I want to end this article by returning to its title. Practice must be not a proving ground, but a laboratory. Not a place where the student "shows what he has learned," but a place where he "investigates how a child learns." This does not mean that theory is not needed. Theory is needed - but it must be an instrument for inquiry, and not a dogma for memorization. The student must know the theory in order to see in practice what others do not notice. But he must be able to act, and not only to "know." It is precisely such practice - research-based, facilitative, reflective - that must become the basis of teacher preparation. It allows one to break epistemological recursion (Issue 3, Art. 1): the student does not simply reproduce the old model, but creates a new reality in which the teacher and the student together develop their cognitive potential. As research shows, "the successful development of critical and creative thinking abilities requires a balanced approach combining structured support systems, innovative pedagogical strategies and technological infrastructure" [8]. Practice is precisely that "structured system of support" which allows the student to pass from theory to practice, from the role of the student to the role of the teacher-researcher. It is precisely such practice that I propose. Not "a student who has sat out at the back desk." But a "teacher-researcher" who from the first day of practice begins to see how the thinking of his students grows - and how his own professional thinking grows. In the next article I will show how the assessment system in the pedagogical university must be restructured - from the assessment of knowledge to the assessment of competencies.

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Conflict of Interest
The author declares no conflict of interest related to the publication of this article.

Funding
The research was conducted without external funding.

Data Availability Statement
The data discussed in the article are contained in the text of the publication. Additional materials can be requested from the author.

Author Contributions
Aleksandr Kleymenov - concept, research, text writing, final editing.

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