From the Assessment of Knowledge to the Assessment of Competencies: How to Assess the Future “Architect of Thinking”

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Annotation

In this article I show how the assessment system in the pedagogical university must be restructured in the CCFP paradigm. My key thesis: the traditional assessment system, based on examinations and the checking of term papers, is incapable of measuring the main thing - the student's readiness to become an "architect of thinking." Drawing on the CCFP model presented in previous issues of the series, on the principles of dynamic and formative diagnostics, as well as on the conceptions of "epistemological recursion" and the "epistemological trap," I substantiate that assessment must be reoriented from the checking of knowledge (what the student knows) to the assessment of competencies (what the student can do). I propose concrete instruments and criteria of assessment: a portfolio of projects, the defense of developed lessons, the analysis of diagnostic cases and reflective essays. I pay special attention to how assessment must become formative, and not punitive, and how the university instructor turns from a "judge" into a "facilitator of professional development." I show that without the restructuring of the assessment system all the previous changes - goals, content, methods and practice - will remain unclaimed, and the old assessment model will continue to reproduce "subject specialists," and not teachers of thinking.

Keywords: assessment in higher education, competencies, architect of thinking, dynamic diagnostics, portfolio, project defense, reflection, epistemological recursion, formative assessment, teacher preparation.

Introduction: Why the Old Assessment System Is a Brake

In the previous article I showed that the student's practice must become a laboratory where he investigates, diagnoses and designs [6]. But as soon as we restructure goals, content, methods and practice, we inevitably run up against the question: how will we assess the results? The traditional assessment system in the pedagogical university is arranged simply: there are lectures, seminars, examinations, tests and term papers. The student passes an examination by tickets, writes a term paper, receives a grade - and moves on to the next year. This system is one of the main mechanisms of the "epistemological trap" [1]. It reproduces the old model. The examination checks memory, and not thinking. The term paper checks the ability to compile others' texts, and not the capacity to design lessons. A grade of "excellent" for a ticket on pedagogy does not guarantee that the student will be able to facilitate a discussion in a real classroom. It is like assessing a pianist's mastery by how quickly he lists the notes in a scale, and not by how he plays a sonata. We measure what is easy to measure, but not what is genuinely important.

Research confirms: contemporary education "suffers from assessment systems that focus on a limited set of cognitive skills that are easy to measure" [7]. We assess static knowledge, and not the readiness to act. If we want to prepare an "architect of thinking," we must change not only what we teach, but also how we assess the result.

What to Assess: From Knowledge to Competencies

The first thing that must change is the object of assessment. We must cease to assess "knowledge about pedagogy" and begin to assess "competencies in pedagogy." What must the student demonstrate? The ability to design lessons with a dual purpose. He must be able to develop a lesson in which it is clearly written not only the subject content, but also the meta-subject potential (which mechanisms of the core and support are developed) and the methodology of actualization (how exactly the instruction is organized). The ability to diagnose mental mechanisms. He must be able to conduct the diagnostics of the level of development of mechanisms (with priority given to the core) in a

concrete student or group, analyze the results, and propose a development trajectory. The ability to facilitate thinking. He must be able to ask open questions (MM-5), organize a discussion (MM-7), create a psychologically safe environment, and manage group dynamics. The ability to reflect. He must be able to analyze his practice, see his strengths and weaknesses, and correct his approaches.

And what must we no longer assess? The ability to memorize definitions and retell the textbook. The ability to compile texts (term papers). The ability to "pass an examination" (knowledge of tickets). Researchers emphasize that "a transition is needed from the 'assessment of learning' to the 'assessment for learning' - and further to the 'assessment as learning'" [8]. This means that assessment must be embedded in the very process of preparation, and not be a separate stage at the end of the semester. It is like in music: we assess not how the student has learned the scales, but how he plays a piece - in real time, with real sound.

Principles of the New Assessment System

How must the new system be arranged? I propose five key principles that are directly connected with the principles of dynamic diagnostics [2], [3]. The first is the principle of dynamism. Assessment must measure not a static level, but progress. Not "what the student knows now," but "how he has changed compared with the beginning of the semester." Not "right or wrong," but "how he has advanced in the development of competencies." What does this mean in practice? Instead of one examination at the end of the semester - a series of diagnostic "cross-sections" throughout the entire period of instruction. The student must see his trajectory of growth, and not simply receive a grade "for the semester." It is as if we assessed not a photograph, but a film: what is important is movement, and not a stopped frame.

The second principle is authenticity (the activity approach). Assessment must be embedded in real activity. Not an artificial examination, but real tasks: the development of a lesson, the analysis of student works, the conduct of a fragment of a lesson, and the solving of pedagogical cases. What does this mean in practice? What is assessed is not what the student "knows about facilitation," but how he facilitates. What is assessed is not what he "knows about diagnostics," but which instruments he applies and how he interprets the results. It is like in medicine: we do not ask the student what a scalpel is, but look at how he operates.

The third principle is the multiplicity of instruments. Assessment must use not one instrument (an examination), but a complex of methods: a portfolio, project defense, cases, reflective essays, micro-teaching, and the analysis of video recordings. This allows one to obtain a full picture of the student's competencies. It is like in an orchestra: we listen not to one violin, but to the whole ensemble.

The fourth principle is the formative character. Assessment must be an instrument of development, and not only of ascertainment. Not "make a diagnosis and forget," but "give feedback that helps one move further." The student must understand what and how he needs to improve. It is like in navigation: what is important is not only to know where you are, but also where and how to move.

The fifth principle is individualization. Assessment must take into account the individual trajectory of each student. Not to compare students with each other, but to compare the student with himself. Not "how he looks against the background of others," but "how he grows compared with himself." Researchers confirm that "there is a growing consensus that students should learn 21st-century competencies" [7]. But this consensus must extend also to those who teach the teachers.

Instruments of Assessment: From the Portfolio to the Defense of Practice

Now I will turn to the concrete instruments that must replace traditional examinations and term papers. The first instrument is the portfolio of projects (instead of term papers). A portfolio is a collection of the student's works that shows his progress during the semester. What should be in the portfolio? Developed lessons with a dual purpose (with methodological commentaries). Diagnostic tasks for different mental mechanisms (with analysis of the results). Cases (the analysis of pedagogical situations). Reflective essays (an analysis of one's own growth). Video recordings of fragments of lessons (if there are any). Why is this better than a term paper? A term paper is a compilation of others' texts. A portfolio is a demonstration of one's own competencies. A term paper assesses memory. A portfolio assesses design, diagnostics and reflection.

The second instrument is the defense of developed lessons (instead of an examination). Instead of passing an examination by tickets, the student defends the lesson he has developed. He must justify the choice of topic and its meta-subject potential (which mechanisms of the core and support are developed). He must show how he will diagnose the development of these mechanisms. He must demonstrate a fragment of the lesson (micro-teaching). He must answer the questions of the instructor and fellow students. Why is this better than an examination? An examination checks knowledge of theory. The defense of a lesson checks the readiness to act. At an examination the student answers questions. At a defense he answers the questions that he himself has posed.

The third instrument is the analysis of diagnostic cases (instead of a term paper). Instead of a term paper on pedagogy, the student analyzes a real diagnostic case. He must conduct the diagnostics of the level of development of mental mechanisms in a concrete student (or group), analyze the results, propose a development trajectory, and justify his conclusions. Why is this better than a term paper? A term paper is theory. The analysis of a case is practice. A term paper checks the ability to write. The analysis of a case checks the ability to see.

The fourth instrument is the reflective essay (instead of a test). Instead of a test, the student writes a reflective essay about his professional growth. He must describe what he has learned, analyze how his conceptions of pedagogy have changed, assess his progress in the development of competencies, and set goals for the future. Why is this better than a test? A test checks knowledge of facts. A reflective essay checks the capacity for self-analysis and self-regulation. Research confirms the effectiveness of the portfolio as an instrument of assessment: "portfolio assessment" allows one to see the trajectory of development, and not only a static result [9]. And "reflective self-assessment" is a key element of the development of 21st-century skills.

Criteria of Assessment: How to Measure the Unmeasurable

How to assess a portfolio, the defense of a lesson, or the analysis of a case? Clear criteria are needed. I propose to assess according to three main directions. The first is design (the ability to create lessons with a dual purpose). What is important here: is there a clear connection between the subject content and the development of mental mechanisms (especially those of the core)? Is the methodology of actualization well grounded? Are there diagnostic tasks? Are the unique abilities of students taken into account? The second is diagnostics (the ability to see the student's thinking). What is important here: are there data of observations? Are the data interpreted with reliance on the CCFP model? Is the dynamics taken into account (comparison of "before" and "after")? Is there a connection between diagnostics and design? The third is reflection (the ability to analyze one's practice). What is important here: is there an honest analysis of successes and difficulties? Does the student see the connection between theory and practice? Is there a plan of self-development? Are one's own limitations and blind spots taken into account? How does this look in practice? Instead of a grade of "5" or "4" the student receives elaborated feedback on each criterion. He sees what he is doing well and what needs to be improved. It is like in a mirror: the student sees himself not in the distorted reflection of a grade, but in the precise and benevolent reflection of his actions and possibilities.

The Role of the University Instructor: From "Judge" to "Facilitator"

The restructuring of the assessment system inevitably changes the role of the instructor. The traditional instructor checks knowledge, puts grades, and delivers a verdict. He is a "judge" who determines whether the student is "worthy" of moving on to the next year. The new instructor helps the student to see his progress, gives developmental feedback, and directs self-analysis. He is a "facilitator of professional development." What does this mean in practice? Instead of "you failed the examination" - "let us look at what worked for you and what needs to be refined." Instead of "you have learned the ticket" - "how do you think, which mechanisms did you develop in this lesson?" Instead of "grade 3" - "here are the criteria, here are your strengths, here are the zones of growth." The key difference: traditional assessment is the ascertainment of a fact. The new assessment is an instrument of development. The traditional instructor assesses the result. The new instructor assesses the process and helps the student to improve it. Researchers emphasize that "teacher education programs should systematically integrate reflective pedagogical projects, formative assessment rubrics and culturally relevant learning tasks into their curricula" [10]. This means that assessment must be part of the educational process, and not its completion. It is like in gardening: the gardener does not simply assess whether the tree has grown, but helps it to grow - waters it, ties it up, and protects it from pests.

How Not to Fall into a New Trap: Assessment and Epistemological Recursion

I must warn of an important danger. In restructuring the assessment system, we may fall into a new trap - to replace the old formal examinations with new formal "tests of competencies." This will be the very same "epistemological trap" [1], only in a new wrapping. What is the danger? We may begin to assess the "correctness" of the design of a lesson according to formal criteria (is there a triad of tasks, is there diagnostics, is there reflection), forgetting that the main thing is the student's thinking. We may turn the portfolio into an "obligatory report" that the student assembles for a checkmark, and not for his own development. We may make the defense of the lesson an "examination" at which the student is afraid to make a mistake and therefore demonstrates an "ideal" lesson, and not a real one. How to avoid this? Assessment must be formative (feedback is more important than a grade). Assessment must be dialogic (the student discusses his results with the instructor, and does not simply receive a grade). Assessment must be safe (the student is not afraid to make mistakes, because a mistake is part of learning). That is precisely why I insist: the restructuring of the assessment system is not simply "new instruments." It is a change in the culture of assessment. From the culture of fear and control - to the culture of trust and development. This is precisely the overcoming of epistemological recursion [8]: we do not simply change methods, we change the very way of thinking about what assessment is and why it is needed.

Conclusion: Assessment as the Path to Professional Growth

I want to end this article by returning to its title. Assessment in the pedagogical university must cease to be a "checking of knowledge" and become a "support of professional growth." This does not mean that knowledge is not important. Knowledge is important - but it is not the final goal. The final goal is the student's readiness to become an "architect of thinking," capable of diagnosing, designing, facilitating and reflecting. Research confirms: "there is a growing consensus that students should learn 21st-century competencies" [7]. But this consensus must extend also to those who teach the teachers. We must assess not knowledge, but competence. Not theory, but practice. Not the static, but the dynamics.

It is precisely such an assessment system that I propose. Not "a student who has passed the examinations." But a "student who is ready to act" - who knows how to design lessons with a dual purpose, to diagnose the thinking of students, to facilitate discussions, and to reflect on his practice. In the next, concluding article of this series I will summarize all that has been said and show why the teacher is the key link without which all the previous five issues will remain a beautiful theory.

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