CASE STUDY

Dynamic Pedagogy:

A Perspective for Integrating Curriculum, Instruction, and Assessment in the Service of Learning at the Classroom Level

Eleanor Armour-Thomas

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This case study[1] responds to the Gordon Commission Report on the Future of Assessment (2013), which argued that assessment must go beyond documenting what students have learned or achieved. It must also gather evidence of the processes students use to learn and improve their learning over time. The case study contends that realizing this vision requires embedding assessment within a framework of Dynamic Pedagogy—an integrated model in which assessment, curriculum, and instruction are inseparable and mutually reinforcing, all working together to promote learning with understanding.

The case study begins by defining and conceptualizing Dynamic Pedagogy, positioning learning with understanding as the central focus of the interdependent relationships among assessment, curriculum, and instruction. It then outlines how Dynamic Pedagogy can be operationalized at the classroom level, beginning with the identification of desired learning outcomes and clearly defined success criteria. This is followed by a discussion of three essential components for implementation: (1) teaching-learning transactions, (2) a learning-centered environment, and (3) a three-phase instructional structure—Pre-active, Interactive, and Post-active—that collectively support both service and deep learning.

The case study further examines the multiple functions of a classroom assessment system and the purposes it serves: generating evidence of learning as it occurs and determining the status of what has been learned. It concludes by situating Dynamic Pedagogy within a broader assessment system and proposing a research and development initiative to evaluate the model's effectiveness in enabling learning with understanding at the classroom level.

1 This case study builds upon concepts explored in earlier work (See Armour-Thomas, E., & Gordon, E. W. (2025). *Principles of Dynamic Pedagogy: An integrative model of curriculum, instruction, and assessment for prospective* and in-service teachers, Routledge), expanding the analysis to include new contexts and applications.

Introduction

A common theme in the educational assessment literature is its critical relationship to learning and its improvement. There are at least two key issues that must be addressed in the practice of assessment within educational settings. First, as recommended by the Gordon Commission on the Future of Assessment, assessment should not be limited to generating evidence about students' current levels of achievement. It should also provide insights into the processes students use to learn and to improve their learning over time. Second, assessment decisions alone cannot meaningfully inform or support learning. This is because assessment is inextricably linked to other core components of pedagogy—namely, curriculum and instruction (Armour-Thomas & Gordon, 2013; Farenga et al., 2002; Gordon, 1999; Furtak et al., 2016; Popham, 2008; Shepard, 2021; Tomlinson & Moon, 2013; Wiliam & Leahy, 2015). How, then, might assessment in the service of learning be conceptualized and implemented, given its inseparable relationship with curriculum and instruction? This case study explores these issues through the lens of Dynamic Pedagogy—an approach to teaching and learning in which learning lies at the center of three interdependent domains: assessment, curriculum, and instruction. These elements function in dynamic interaction to promote meaningful learning and its continuous improvement.

Definition and Conceptualization of Dynamic Pedagogy

Dynamic Pedagogy is an approach to teaching and learning in the classroom where the primary purpose of pedagogical processes of curriculum, instruction, and assessment is to enable learners to learn with understanding. Learning with understanding can be defined as an individual's capacity to grasp the conceptual meaning of key ideas within a discipline, recognize their significance, and apply them flexibly in varied contexts. It extends beyond memorization or procedural proficiency to include the development of deep, transferable knowledge that can be used to solve novel problems, make informed decisions, and generate new insights about what it means to learn with understanding.

This definition is grounded in social-constructivist perspectives on how people learn (e.g., Bransford et al.,2002) which emphasize that learners actively construct meaning based on their prior knowledge and experiences. As Schmidt and Marzano (2015) and Bailey and Pransky (2014) argue, the integration of new knowledge is shaped by what learners already know, making the activation and refinement of prior understanding essential to deeper learning.

Learning with understanding also involves the consolidation of new knowledge into coherent mental models, as Greene (2008) suggests, and its transferability to unfamiliar situations—a cornerstone of expert thinking, as described by Bransford and Stein (1993) and Perkins and Salomon (2012). In this way, learners are not only able to recall facts but also to reconstruct knowledge in new contexts, which is a hallmark of meaningful learning.

Moreover, this form of learning engages students in higher-order thinking, such as analysis, evaluation, and creation, as emphasized by Fosnot (2005). It encourages self-regulated learning (Zimmerman & Schunk, 2013), where students set goals, monitor their own progress, and reflect on outcomes. These metacognitive processes foster greater autonomy and ownership over their learning.

Finally, learning with understanding is closely related to what Gordon (2007) terms intellective competence—the ability to use one's knowledge base flexibly, insightfully, and strategically in the face of cognitive challenges.

For learners to learn with understanding, they must be able to demonstrate that they can activate their prior knowledge and use it to construct and consolidate new knowledge, as well as transfer it to other contexts. Classroom teachers support students in learning to learn with understanding using an approach to teaching and learning called "Dynamic Pedagogy." In this definition, "Pedagogy" denotes the interdependency of curriculum, instruction, and assessment processes with learning as its collective focus. The term "dynamic" emphasizes the fluidity of the interdependent relationships among curriculum, instruction, and assessment with learning processes for the purpose of enabling students to learn with understanding.

A logical coherence exists among the three pedagogical processes, each having a complementary and functional relationship with learning processes. For instance, the assessment and curriculum processes are coherently related in that the choice of which assessment probe to use in the inquiry about a learner's engagement in a discipline-specific problem-solving task depends in part on the level and complexity of the curriculum task and its attendant cognitive, metacognitive, and motivational demands on the learner. Hence, both will influence learning. Furthermore, interpretations of results from analysis of assessment data can guide teachers in adjusting instruction and support learners in making necessary changes to their learning strategies, thus demonstrating the inseparable nature of assessment, instruction, and learning. Similarly, instructional and curriculum adaptations informed by interpretations of results about learners' performance from curriculum-embedded assessment tasks are yet another illustration of the interdependent relationships of pedagogical and learning processes.

In this case study four concepts of learning processes are selected for learners' responsiveness to individual components of Dynamic Pedagogy (curriculum, assessment and instruction as well as the interdependence among them): cognitive processes (Anderson & Krathwohl (2001); executive processes (Flavell, 1979; Schunk & Zimmerman, 2016); motivational orientation (Schunk, 2016; Solomon & Anderman, 2017); sensory response modalities (Mayer, 2008; Nesbit & Adesope, 2006; and Sternberg, 1998). This case study argues that learners utilize these concepts when prompted to draw on their prior knowledge to construct and consolidate new knowledge and to transfer newly acquired knowledge to other contexts. For a more comprehensive discussion of these ideas, see Armour-Thomas (2017), Armour-Thomas and Gordon (2019), and Armour-Thomas and Gordon (2025).

While there are substantive research findings that attest to the relationship between each of these pedagogical processes of teaching and learning, this case study argues that it is the interplay among them, with learning as the central focus, that most significantly impacts learning more than any single pedagogical process. The notion of pedagogical interdependence and its relationship with learning processes traces back to Tyler's foundational work (1949) and has been reinforced by subsequent scholarship (e.g., Farenga et al., 2002; Gordon, 1999; Pellegrino et al., 2014; Shepard, 2021; Tomlinson & Moon, 2013 & Wiliam, 2011).

Operationalization of Dynamic Pedagogy in the Classroom

Learning Targets and its Criteria for Success

The operationalization of Dynamic Pedagogy in the classroom begins with the identification of learning outcomes students are expected to achieve by the end of lessons of a curriculum unit along with clearly defined success criteria. Where learners are in relation to the outcomes expected of them, as well as the progress they would need to demonstrate on their way to mastery, are also considerations in the operationalization of Dynamic Pedagogy. The learning targets and their success criteria guide both the teacher's and the learner's actions to support learning with understanding throughout lessons of a curriculum unit.

Teachers reflect on questions such as:

1. **What curriculum-embedded assessments will I use to ascertain where students are in relation to the learning target?**
2. **What curriculum-embedded instruction and assessment will I use to help students make progress toward the learning target?**
3. **What curriculum-embedded assessments will I use to ascertain whether students met the learning target?**

Learners consider questions like:

1. **Do I understand the learning target and the criteria for success?**
2. **Where am I in relation to the learning target?**
3. **What do I need to do to make progress toward the learning target and meet it?**

Research over the last two decades has affirmed the importance of these steps in the learning process (Brookhart, 2024; Moss & Brookhart, 2012; Wiliam, 2011; Wiliam & Leahy, 2015). Three additional factors are essential for operationalizing Dynamic Pedagogy in the classroom: teaching-learning transactions, a learning-centered environment, and a three-phase structure for linking the functional relationships of the interdependent pedagogical processes with learning processes.

Teaching-Learning Transactions

Teaching-learning transactions refer to the reciprocal relationship between teachers and students within instructional arrangements in the classroom (e.g., whole group, small group, dyads, and one-to-one relationships between peers or teacher and learner). It is within these arrangements that mediational teaching-learning transactions unfold and the mechanism for learning with understanding lies. It is here that dialogic exchanges about curriculum-embedded instruction and instruction-embedded assessments occur, and where learners, in collaboration with their peers, are encouraged by their teacher to make their cognitive and metacognitive thinking audible and visible as they build on their prior knowledge to construct, consolidate, and transfer new knowledge to other contexts. It is also here that the teacher helps students to broaden their cognitive and motivational schemas through curriculum-embedded instruction and assessment while being responsive to their preferred modalities of expressing what they know and can do. Both teacher and student thus share responsibility for fostering learning with understanding.

Learning-centered environment

The learning environment of Dynamic Pedagogy encompasses not only the physical space but also the emotional and social atmosphere of the classroom. It is thus a learning-centered environment where all learners are socially connected with their peers and teachers to engage in new or challenging activities with them. Characteristics such as personalization, trustworthiness, rapport, empathy, and care are essential for positive teaching-learning transactions, as these elements foster student engagement, confidence, and a sense of agency in and ownership of their learning.

Effective learning-centered environments that foster learning with understanding are also shaped by administrative routines (combinations that maximize active participation), the appropriate integration of pedagogical processes (which support goal-directed learning), and pacing (which regulates opportunities for student expression and interaction with the teacher and their peers). An elaboration of what Dynamic Pedagogy looks like in practice is provided below.

A Learning Focus of Pedagogical Functions

A three-phase structure is used to operationalize Dynamic Pedagogy at the classroom level—preactive, interactive, and postactive—as informed by the work of Jackson (1968) and Artzt & Armour-Thomas (2002). This structure describes a sequence of metacognitive thinking of planning, monitoring, evaluating, and revising lessons of a curriculum unit. The focus of these higher-order processes for the teacher is on the relationships of the interdependent components of the pedagogical components of curriculum, instruction and assessment with learning processes to: support learning with understanding while it is occurring and to determine how much learning is achieved at the end of lessons of a curriculum unit.

1 The Preactive Phase

In the preactive phase, the teacher engages in thoughtful planning of lessons within a curriculum unit (e.g., activities about the integration of pedagogical components of curriculum, instruction and its relationship with students' needs, assets and interests; the teaching-learning transactions where these activities will unfold; and the features of the classroom environment conducive to learning with understanding).

Key teacher metacognitive thoughts in the preactive phase include:

- The learning targets and their success criteria in a domain-specific area that students are expected to demonstrate by the end of lessons in a curriculum unit.
- The interdependent curriculum and assessment strategies that would be needed to diagnose where students are in relation to where they need to be at the end of a lesson as well as the combinations of curriculum, instruction, and assessment tasks that would be needed to support students' progress toward the learning targets of lessons within a curriculum unit.
- The misconceptions that may be uncovered from the diagnostic prompts and the combinations of curriculum, instruction, and assessment processes that would be required to address them.
- The differentiated entry points into the lesson that would be needed to help students build on their prior knowledge to construct new knowledge, to consolidate and transfer it to new contexts.

The modalities for representing curriculum, instruction, and assessment tasks, as well as the allowable modalities (e.g., oral, written, visual, or kinesthetic) for students to demonstrate what they know and can do in response to curriculum-embedded assessments.

2 The Interactive Phase

During the interactive phase, the teacher enacts the lesson plan, which incorporates various combinations of curriculum, instruction, and assessment, with learning processes as the focus and learning with understanding as its primary purpose. Diagnostic and appraisal assessments are also used to gather evidence about student performance, about how well students are making progress toward the learning targets and their criteria.

Key teacher metacognitive thoughts in the interactive phase include:

- The diagnosis of students' readiness for new learning by administering curriculum-embedded assessments to ascertain their prior knowledge and skills and their underlying cognitive processes. How well does the evidence from diagnostic assessments provide information about how close students' performances are to the learning targets and their success criteria?
- The appraisal of students' progress toward new learning by administering instruction and curriculum-embedded assessments to ascertain how they use their prior knowledge to construct new knowledge and skills and their underlying cognitive processes. Such assessments are also used to ascertain how students consolidate and transfer new knowledge and skills, as well as their underlying cognitive processes. Similar to the metacognitive thinking above, the teacher thinks about how well the evidence from appraisal assessments provides information about how close to the learning targets and success criteria are students' performances.
- The scaffolded learning experiences that enable students to engage with complex tasks while receiving timely feedback to refine their thinking and performance.
- Learners' choice of the use of multiple assessment modalities so that students can demonstrate what they know and can do in ways that align with their intellective strengths, interests, and needs.
- The use of inferences from analysis of assessment results to inform adjustments in subsequent relationships between interdependent pedagogical components of curriculum, instruction and assessment and learning processes to inform learning with understanding.
- The use of inferences from analysis of results of curriculum-embedded assessments to provide feedback to students about how well they are making progress toward the learning targets of the lesson.

3 The Postactive Phase

In the postactive phase, the teacher self-evaluates how well curriculum-embedded assessments generate evidence about the status of students' achievement of learning targets of the lesson. The teacher also self-evaluates about the degree of students' mastery of the learning targets at the end of the curriculum unit.

Key teacher self-evaluative thoughts in the postactive phase to ascertain the status of learning achieved at the end of a lesson and at the end of a curriculum unit include:

- The design of curriculum-embedded assessments with various formats and modalities of representation of items that are likely to generate evidence of the degree of learning achieved at the end of a lesson and the curriculum unit.
- Students' choice of modalities in responding to curriculum-embedded assessments to demonstrate what they know and can do at the end of a lesson and the curriculum unit
- The inferences made from results of curriculum-embedded assessments to inform revisions in subsequent relationships of pedagogical components of curriculum, instruction and assessment and learning processes to inform learning with understanding. Such revisions can be made in subsequent lessons of a new curriculum unit.

Assessment System at the Classroom Level

At the classroom level, an effective assessment system for Dynamic Pedagogy generates meaningful information about learning before, during, and after pedagogical interventions. These interventions reflect the synchrony of assessment, curriculum, and instruction—unified in their collective focus on supporting learning with understanding. Specifically, an assessment system fulfills three primary functions:

1. **Diagnosis**–identifying where learners currently are in relation to the outcomes of learning set for the end of a curriculum unit.
2. **Appraisal**–monitoring learners' progress toward mastery of those outcomes of learning.
3. **Evaluation**–determining the level of mastery learners have achieved by the end of a lesson as well as at the end of a curriculum unit.

These functions serve two overarching purposes:

4. To **generate evidence that learning is occurring** as students engage in lesson activities within a curriculum unit; and
5. To **generate evidence about the status of learning achieved** after the curriculum unit concludes.

Regardless of the assessment's purpose, the process typically follows a consistent sequence:

(a) Generate data on what students know and can do;

(b) Analyze assessment results;

(c) Draw inferences from the analysis of assessment results;

(d) Use inferences from the analysis of assessment results to inform next steps for the teacher and the student.

Purpose 1: Evidence to Inform Learning while it is Occurring.

When the focus of assessment is to seek evidence that learning is occurring during dynamic pedagogical interactions between the teacher and students, the following five design principles of assessment are proposed for formative purposes:

1. **Open-ended prompts** that allow students to choose their preferred modality of expression (e.g., visual, oral, written) to demonstrate what they know and can do as they make progress toward the learning targets and their success criteria.
2. **Complexity tracking** of cognitive and metacognitive processes as students engage with knowledge-based tasks of lessons within a curriculum unit.
3. **Observation of learning behaviors**, capturing nature and quality of student engagement in dynamic pedagogical activities.
4. **Rubrics** that yield qualitative and quantitative evidence of how students are making progress toward the learning targets and the success criteria of a curriculum unit.
5. **Inferences from assessment results** that teachers use as feedback to make adjustments in one or more combinations of interdependent pedagogical processes of curriculum, instruction, and assessment to support student learning with understanding.

Purpose 2: Evidence to inform the Status of Learning Achieved

When the purpose shifts to generating evidence about the **quality and quantity of learning achieved** after a curriculum unit ends, the design principles of assessment remain closely aligned with those for formative purposes, with slight variations in emphasis:

1. **Open-ended items** that give learners a choice of their preferred modalities of expression to demonstrate what they have learned at the end of a curriculum unit.
2. **Cognitively rich prompts** are indicative of a full range of cognitive processes, underlying knowledge-based tasks to ascertain what and how much students have learned at the end of a curriculum unit.
3. **Rubrics** that yield both qualitative and quantitative evidence of how much students have learned at the end of a curriculum unit.
4. **Inferences from assessment results** inform subsequent decision-making and actions by the teacher to improve student learning with understanding through dynamic pedagogical activities.

Situating Dynamic Pedagogy Within a Larger Educational System

While the conceptual and methodological foundations of Dynamic Pedagogy are anchored at the classroom level, it is essential that the model be situated within and supported by broader systemic structures. As research continues to illuminate how students learn and the conditions that foster learning with understanding over time, it becomes increasingly clear that school, district, and state-level policies and practices must play a role in ensuring that Dynamic Pedagogy does not operate in a vacuum.

For example, if teachers are to engage with and adopt the principles of Dynamic Pedagogy meaningfully, they must be provided with sustained professional development and resource support. Such enhancements should be coordinated by school and district personnel who are committed to advancing learner-centered practices throughout the entire educational system.

Although conventional large-scale assessments at district and state levels share certain design features with the assessment system of Dynamic Pedagogy—such as the incorporation of multiple cognitive processes and allowances for diverse response modalities, more systemic coherence is needed. Policymakers, assessment developers and curriculum and instruction experts must collaborate to align the design and implementation of classroom-based assessments with interim and end-of-year large-scale assessments. This alignment is crucial for building a balanced and integrated assessment system, one that is grounded in both theory and evidence about how learners develop understanding within meaningful contexts (e.g., Darling-Hammond et al., 2013; Evans & Marion, 2024; and Marion, Pellegrino, & Berman, 2024).

When the core principles and features of a classroom-based Dynamic Pedagogy assessment system are aligned with those of assessments beyond the classroom, both students and teachers stand to benefit. For students, sustained engagement with curriculum-embedded assessments designed to promote learning with understanding enhances their preparedness, not only for classroom-based summative assessments but also for standardized assessments administered at district and state levels. While this hypothesis warrants empirical investigation, it represents a promising direction for future research and practice.

For teachers, the thoughtful use of large-scale assessment data—when such data are meaningfully connected to curriculum and instruction—can enrich pedagogical decision-making. This alignment strengthens teachers' capacity to design meaningful curriculum and instruction embedded assessments that support students' deep learning and long-term academic growth.

Future Directions for Dynamic Pedagogy

It is one thing to make a conceptual argument for the perspective of Dynamic Pedagogy to inform learning with understanding at the classroom level, but quite another to demonstrate its efficacy in practice. Further research is needed to evaluate the effectiveness of its claims in practice. Suggested areas of inquiry include:

1. What validity criteria inform the design and use of assessments about the Dynamic Pedagogy model?
2. What are the essential components of a professional development program that support the planning, implementation, and evaluation of Dynamic Pedagogy?
3. What kinds of infrastructures are required to plan, implement, and evaluate Dynamic Pedagogy effectively?
4. How can stakeholders participate meaningfully in the development and sustainability of Dynamic Pedagogy interventions?
5. How can technology be used to enhance the planning, implementation, and evaluation of Dynamic Pedagogy?

Conclusion

This case study proposed an approach to teaching and learning defined as Dynamic Pedagogy, where curriculum, assessment, and instruction are interdependent pedagogical processes with the shared goal of fostering student learning with understanding. The operationalization of Dynamic Pedagogy calls for a shared responsibility between teachers and students to engage in teaching-learning transactions situated within a learning-centered environment that fosters students' confidence, agency, and ownership in their own learning. The case study proposed design principles of an assessment system oriented toward generating evidence of Dynamic Pedagogy's influence on student learning with understanding. Finally, it recommended a research and development agenda to validate and refine the practices associated with Dynamic Pedagogy, ensuring its positive impact on student learning and understanding at the classroom level.

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About the authors

Eleanor Armour-Thomas, Ed.D., is Professor Emerita at Queens College, CUNY, where she served in the Department of Secondary Education from 1987 to 2024, including 22 years (2000–2022) as Department Chair. She specialized in Educational Psychology, teaching pre-service and in-service teachers, and served as Principal Investigator and Co-Principal Investigator for programs aimed at enhancing mathematics teacher preparation and professional development in science education. Her books, journal articles, oral addresses, and reports focus on teacher and student cognition, metacognition, learning, and assessment. Additionally, she has evaluated educational programs designed to improve learning and academic achievement for students from low socio-economic backgrounds and has consulted on teaching, learning, and assessment in K-16 education.

About the Study Group

The Study Group exists to advance the best of artificial intelligence, assessment, and data practice, technology, and policy; uncover future design needs and opportunities for educational systems; and generate recommendations to better meet the needs of students, families, and educators.

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