

Five Standards of Authentic Instruction by Fred M. Newmann and Gary G. Wehlage

This is a summary of the research that guides the K20's concept of authentic teaching and learning.*

What types of instruction engage students in using their minds well? A framework developed at Wisconsin's Center on Organization and Restructuring of Schools may be a valuable tool for teachers and researchers attempting to answer this complex question.

Why do many innovations fail to improve the quality of instruction or student achievement? In 1990, we began to explore this question by studying schools that have tried to restructure. Unfortunately, even the most innovative activities—from school councils and shared decision making to cooperative learning and assessment by portfolio—can be implemented in ways that undermine meaningful learning, unless they are guided by substantive, worthwhile educational ends. We contend that innovations should aim toward a vision of authentic student achievement, and we are examining the extent to which instruction in restructured schools is directed toward authentic forms of student achievement. We use the word *authentic* to distinguish between achievement that is significant and meaningful and that which is trivial and useless.

To define authentic achievement more precisely, we rely on three criteria that are consistent with major proposals in the restructuring movement: (1) students construct meaning and produce knowledge, (2) students use disciplined inquiry to construct meaning, and (3) students aim their work toward production of discourse, products, and performances that have value or meaning beyond success in school.

The Need for Standards for Instruction

While there has been much recent attention to standards for curriculum and for assessment, public and professional discussion of standards for instruction tends to focus on procedural and technical aspects, with little attention to more fundamental standards of quality. Is achievement more likely to be authentic when the length of class

periods varies, when teachers teach in teams, when students participate in hands-on activities, or when students spend time in cooperative groups, museums, or on-the-job apprenticeships?

We were cautious not to assume that technical processes or specific sites for learning, however innovative, necessarily produce experiences of high intellectual quality. Even activities that place students in the role of a more active, cooperative learner and that seem to respect student voices can be implemented in ways that do not produce authentic achievement. The challenge is not simply to adopt innovative teaching techniques or to find new locations for learning, but deliberately to counteract two persistent maladies that make conventional schooling inauthentic:

1. Often the work students do does not allow them to use their minds well.
2. The work has no intrinsic meaning or value to students beyond achieving success in school.

To face these problems head-on, we articulated standards for instruction that represented the quality of intellectual work but that were not tied to any specific learning activity (for example, lecture or small-group discussion). Indeed, the point was to assess the extent to which any given activity—traditional or innovative, in or out of school—engages students in using their minds well.

Instruction is complex, and quantification in education can often be as misleading as informative. To guard against oversimplification, we formulated several standards, rather than only one or two, and we conceptualized each standard as a continuous construct from “less” to “more” of a quality, rather than as a categorical (yes or no) variable. We expressed each standard as a dimensional construct on a five-point scale. Instructions for rating lessons include specific criteria for each score—1 to 5—on each standard. Space does not permit us to present criteria for every possible rating, but for each standard we first distinguish between high and low scoring lessons and then offer examples of criteria for some specific ratings. Raters consider both the number of students to which the criterion applies and the proportion of class time during which it

applies. The five standards are: higher-order thinking, depth of knowledge, connectedness to the world beyond the classroom, substantive conversation, and social support for student achievement [replaced with Student Centered Learning] (see fig. 1.).

Figure 1. Five Standards of Authentic Instruction

1. CONSTRUCTION OF KNOWLEDGE: Higher-Order Thinking

lower-order thinking only 1... 2... 3... 4... 5... higher-order thinking majority of lesson

2. DISCIPLINED INQUIRY: Depth of Knowledge through Meaningful Questions

narrow questions, shallow knowledge 1... 2... 3... 4... 5... essential questions, knowledge is deep

3. DISCIPLINED INQUIRY: Substantive Conversation

teacher-led questions/activities 1... 2... 3... 4... 5... sustained, targeted conversation among students

4. VALUE BEYOND SCHOOL: Real World Connections

no connection beyond classroom 1... 2... 3... 4... 5... connection between topic and situations/experiences

5. STUDENT CENTERED LEARNING: Student Autonomy

instruction focused on curriculum 1... 2... 3... 4... 5... instruction provides student ownership of learning

Construction of Knowledge: Higher-Order Thinking

The first scale measures the degree to which students use higher-order thinking.

Lower-order thinking (LOT) occurs when students are asked to receive or recite factual information or to employ rules and algorithms through repetitive routines. As information-receivers, students are given pre-specified knowledge ranging from simple facts and information to more complex concepts. Students are in this role when they recite previously acquired knowledge by responding to questions that require recall of pre-specified knowledge.

Higher-order thinking (HOT) requires students to manipulate information and ideas in ways that transform their meaning and implications, such as when students combine facts and ideas in order to synthesize, generalize, explain, hypothesize, or arrive at some conclusion or interpretation. Manipulating information and ideas through these processes allows students to solve problems and discover new (for them) meanings and understandings. When students engage in HOT, an element of uncertainty is introduced, and instructional outcomes are not always predictable.

Criteria for higher-order thinking:

3 = Students primarily engage in routine LOT operations a good share of the lesson. There is at least one significant question or activity in which some students perform some HOT operations.

4 = Students engage in an at least one major activity during the lesson in which they perform HOT operations. This activity occupies a substantial portion of the lesson, and many students perform HOT.

Disciplined Inquiry: Depth of Knowledge through Meaningful Questions

From “knowledge is shallow” (1) to “knowledge is deep” (5), the next scale assesses students' depth of knowledge and understanding. This term refers to the substantive character of the ideas in a lesson and to the level of understanding that students demonstrate as they consider these ideas.

Knowledge is thin or superficial when it does not deal with significant concepts of a topic or discipline—for example, when students have a trivial understanding of important concepts or when they have only a surface acquaintance with their meaning.

Superficiality can be due, in part, to instructional strategies that emphasize coverage of large quantities of fragmented information.

Knowledge is deep or thick when it concerns the central ideas of a topic or discipline. For students, knowledge is deep when they make clear distinctions, develop arguments, solve problems, construct explanations, and otherwise work with relatively complex understandings. Depth is produced, in part, by covering fewer topics in systematic and connected ways.

Criteria for depth of knowledge:

2 = Knowledge remains superficial and fragmented; while some key concepts and ideas are mentioned or covered, only a superficial acquaintance or trivialized understanding of these complex ideas is evident.

3 = Knowledge is treated unevenly during instruction; that is, deep understanding of something is countered by superficial understanding of other ideas. At least one significant idea may be presented in depth and its significance grasped, but in general the focus is not sustained.

Disciplined Inquiry: Substantive Conversation

From “no substantive conversation” (1) to “high-level substantive conversation” (5), the fourth scale assesses the extent of talking to learn and understand the substance of a subject. In classes with little or no substantive conversation, interaction typically consists of a lecture with recitation in which the teacher deviates very little from delivering a preplanned body of information and set of questions; students routinely give very short answers. Teachers' list of questions, facts, and concepts tend to make the discourse choppy, rather than coherent; there is often little or no follow-up of student responses. Such discourse is the oral equivalent of fill-in-the-blank or short-answer study questions.

High levels of substantive conversation are indicated by three features:

1. There is considerable interaction about the ideas of a topic (the talk is about disciplined subject matter and includes indicators of higher-order thinking such as making distinctions, applying ideas, forming generalizations, raising questions, and not just reporting experiences, facts, definitions, or procedures).
2. Sharing of ideas is evident in exchanges that are not completely scripted or controlled (as in a teacher-led recitation). Sharing is best illustrated when participants explain themselves or ask questions in complete sentences and when they respond directly to comments of previous speakers.
3. The dialogue builds coherently on participants' ideas to promote improved collective understanding of a theme or topic.

Criteria for substantive conversation:

To score 2 or above, conversation must focus on subject matter as in feature (1) above.

2 = Sharing (2) and/or coherent promotion of collective understanding (3) occurs briefly and involves at least one example of two consecutive interchanges.

4 = All three features of substantive conversation occur, with at least one example of sustained conversation (that is, at least three consecutive interchanges), and many students participate.

Value Beyond School: Real World Connections

The next scale measures the extent to which the class has value and meaning beyond the instructional context. In a class with little or no value beyond, activities are deemed important for success only in school (now or later). Students' work has no impact on others and serves only to certify their level of compliance with the norms of formal schooling.

A lesson gains in authenticity the more there is a connection to the larger social context within which students live. Instruction can exhibit some degree of connectedness when (1) students address real-world public problems (for example, clarifying a contemporary issue by applying statistical analysis in a report to the city council on the homeless); or (2) students use personal experiences as a context for applying knowledge (such as using conflict resolution techniques in their own school).

Criteria for connectedness:

1 = Lesson topic and activities have no clear connection to issues or experience beyond the classroom. The teacher offers no justification for the work beyond the need to perform well in class.

5 = Students work on a problem or issue that the teacher and students see as connected to their personal experiences or contemporary public situations. They explore these connections in ways that create personal meaning. Students are involved in an effort to influence an audience beyond their classroom; for example, by communicating knowledge to others, advocating solutions to social problems, providing assistance to people, or creating performances or products with utilitarian or aesthetic value.

Student Centered Learning: Student Autonomy

This scale involves organizational, procedural, and cognitive autonomy. Student centered learning is low when the teacher focuses instruction exclusively on the needs of the curriculum while maintaining full control over the parameters of the lesson. Centered learning may remain low if the degree of student autonomy is not significant enough to impact the learning environment.

Student centered learning is high when instruction focuses on the personal experiences, prior knowledge, needs, and cultural background students bring to the learning experience. The teacher encourages student ownership of the learning environment by offering opportunities for students to be involved in decisions regarding the organizational, procedural, and cognitive processes in the classroom.

Criteria for student centered learning:

1 = Instruction focuses on the needs of the curriculum. The teacher has full control over the parameters of the lesson.

5 = Students and teacher demonstrate shared control over the learning environment.

**This document has been modified by A. McConnell and D. Mattox—University of Oklahoma K20 Center*