

What Is Understanding? A Deeper Look

What is understanding? When students attain understanding, what have they achieved? One could hardly ask a more basic question toward building a pedagogy of understanding. If the aim is a way of thinking about teaching and learning that puts understanding up front on center stage most of the time, we had better know what we are aiming at.

Knowledge, skill, and understanding are the stock in trade of education. Most teachers show a vigorous commitment to all three. Everyone wants students to emerge from schooling or other learning experiences with a good repertoire of knowledge, well-developed skills, and an understanding of the meaning, significance, and use of what they have studied. So it's worth asking what conception of knowledge, skill, and understanding underwrites what happens in classrooms among teachers and students to foster these attainments.

For knowledge and skill, a rough answer comes readily enough. Knowledge is information on tap. We feel assured a student has knowledge when the student can reproduce it when asked. The student can tell us what Magellan did, where Pakistan lies, what the Magna Carta was for, what Newton's first law of motion is. And if knowledge is information on tap, skills are routine performances on tap. We find out whether the skills are present by turning the tap. To know whether a student writes with good grammar and spelling, sample the student's writing. To check arithmetic skills, give a quiz or assign a problem set.

But understanding proves more subtle. Certainly it does not reduce to knowledge. Understanding what Magellan did or what Newton's first law means calls for more than just reproducing information. Understanding also is more than a routine well-automatized skill. The student who deftly solves physics problems or writes paragraphs with topic sentences may not understand much about physics, writing, or what's being written about at all. While knowledge and skill can be translated as information and routine performance on tap, understanding slips by these simple standards.

So what is understanding? In a phrase, understanding is the ability to think and act flexibly with what one knows. To put it another way, an understanding of a topic is a "flexible performance capability" with emphasis on the flexible. In keeping with this, learning for understanding is like learning a flexible performance—more like learning to improvise jazz or hold a good conversation or rock climb than learning the multiplication table or the dates of the presidents or $F=MA$. Learning facts can be a crucial backdrop to learning for understanding, but learning facts is not learning for understanding.

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