UNIVERSAL DESIGN FOR LEARNING

Who Is Martha Skidmore?

Why There Is No Average Learner

By Beth Stark, M.S.Ed., CPACC

About This Article

In 1945, a newspaper in Ohio went looking for the typical woman and could not find her. This article starts with that contest. It then traces where the idea of the average came from, how it shaped schooling and special education, and why UDL starts with variability.

About a 7-minute read.

The Search for Norma

In September 1945, the Cleveland Plain Dealer newspaper ran a contest with the Cleveland Health Museum in Ohio, in the United States. The goal was to find the Ohio woman whose body most closely matched Norma, a statue made by the sculptor Abram Belskie and the doctor Robert Latou Dickinson. Norma was built from the measurements of thousands of young American women, and those measurements came only from white Americans (Chaney, n.d.). Entrants sent in nine measurements, from height and weight down to ankle and foot (Chaney, n.d.). The woman who came closest would win a prize.



Martha Skidmore, photographed for the Search for Norma contest run by the Cleveland Plain Dealer, September 1945.

The paper received 3,864 entries. The winner was Martha Skidmore, a 23-year-old theatre cashier. Even she did not match Norma exactly. She was simply the woman who came closest, and only about 1 per cent of entrants came anywhere near Norma's measurements (Chaney, n.d.).

The contest set out to find the typical woman in the flesh. It showed that she did not exist. Much of the data behind Norma came from an earlier study that set out to standardise women's clothing sizes (Chaney, n.d.). That data was then used to make a claim about the female body that fitted almost no one.

The Invention of the Average

The idea of a measurable, knowable "average human" is not ancient. It is a 19th-century invention, and we can trace it to one person: Adolphe Quetelet (1796–1874), a Belgian astronomer who turned to statistics. Quetelet borrowed the bell curve that astronomers used to describe measurement error and applied it to people (Rose, 2016).

In his 1835 book, Sur l'homme et le développement de ses facultés, Quetelet introduced l'homme moyen, the average man, as the central value around which human traits cluster (Quetelet, 1835). He treated this average as the ideal. Anyone who differed from it was, in his framework, an error. The average man was the kind of person Quetelet believed society should aim for. The Body Mass Index, first called the Quetelet Index, came out of the same work.

Within a generation, Francis Galton took Quetelet's framework into eugenics, ranking people who differed from the average as either superior or inferior (Rose, 2016). The bell curve, once a description of measurement error, was now a statement about human worth. That move, from "this is the centre of the distribution" to "this is what people should be", still shapes how many of us think about "normal" learners today.

The Medical Model and the Average Learner

The idea of the average did not stay with bodies. By the early 20th century, it had moved into the mind. In 1904, the French government asked the psychologist Alfred Binet to find a way to identify children in Paris schools who needed extra help. His 1905 scale was built to sort children, so that those judged to be behind could be placed in special education. Binet himself warned against reading the scores as a fixed, inborn measure (Gould, 1996).

In 1916, Lewis Terman adapted the scale for the United States as the Stanford-Binet (Gould, 1996). It reported intelligence as a quotient: mental age divided by age in years. In 1939, David Wechsler replaced the quotient with a score placed on a bell curve, with an average of 100 and 15 points for each standard deviation (Wechsler, 1939). Most intelligence tests still use this scale.

Galton had ranked bodies against the average. Now minds were ranked the same way. The bell curve, applied to intelligence, became a way of ranking learners against an imagined "normal". A score two standard deviations below the average, an IQ of about 70, became one of the thresholds for an intellectual disability diagnosis.

In many countries, the discrepancy model was for decades the main route to special education services. In many places it still is. A student whose measured achievement fell well below what their IQ score predicted could qualify for a learning disability label (called a specific learning difficulty in some countries), and the size of that gap served as the threshold. The gap itself often became the diagnosis. This is the medical model at work in education: the problem is placed inside the person (Linton, 1998).

For many years, once we located a deficit inside the learner, the focus was on helping that student "get closer to average". Special education as a field did important work to make sure children who had been shut out of schooling were finally included, and we want to honour that history. The cost is that inclusion has often been offered through a deficit lens.

UDL turns this around. It treats variability as a predictable feature of every nervous system, so the question becomes whether our design accounts for it.

Standardisation as a Public Good

Standardisation in schooling, the school system itself, is not the same as designing for an average learner. The two are often confused. Standardisation at the system level was, for a long time, a public good. Many of the structures we now criticise made schooling fairer than it had been before.

The United States is one example. Many countries built public school systems in the 19th and 20th centuries, and the story of who was included and who was left out differs from place to place. Before the common school movement, schooling in the United States was a patchwork. Quality varied widely from town to town and with family wealth. Whole groups, including girls, working-class boys, immigrants, Indigenous young people and young people of colour, were often shut out or given poor schooling.

Horace Mann (1796–1859) became the first Secretary of the Massachusetts Board of Education in 1837. He championed the common school: publicly funded with no fees, non-sectarian and open to all children regardless of class. In 1843 he visited schools in Prussia and reported on them in his Seventh Annual Report (Mann, 1844). He pressed for trained teachers and a common experience of schooling across the state. The first public school for training teachers had already opened in Lexington, Massachusetts, in 1839 (Framingham State University, n.d.). Mann saw common schools as a way to unite a young republic and to prepare citizens who could govern themselves.

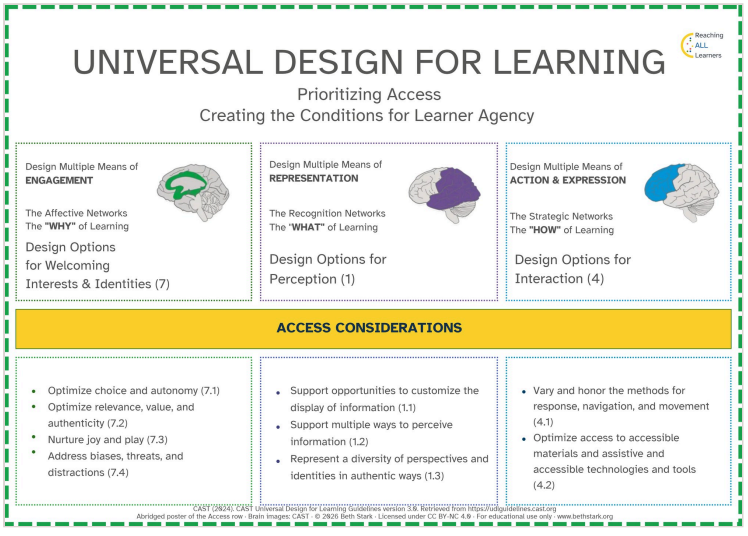
Standardisation at the system level made those goals workable at scale. A common curriculum meant a child who moved towns could keep learning. Trained teachers meant fewer children sat in front of an unprepared adult. Age-graded classrooms allowed a single school to serve hundreds of children. When written examinations first came to Boston's schools in 1845, reformers, Mann among them, used the results to show where schools were falling short and to press for change (Reese, 2013).

Standardisation opened schooling to many more learners, but not to everyone. Indigenous young people, young people of colour, disabled young people and many girls were excluded or underserved well into the 20th century, and in many parts of the world they still are. For most children, though, the move to common schooling was a real expansion of opportunity. That part of the story tends to get skipped when we criticise the so-called factory model of education (Watters, 2015).

The Mindset Shift UDL Asks Us to Make

Variability is the rule. As CAST puts it in UDL & the Learning Brain, "Variability is the dominant feature of the nervous system. Like fingerprints, no two brains are alike" (CAST, 2018). With this idea in mind, variability becomes the starting point for design.

The UDL Guidelines 3.0, published in 2024, build variability into the design itself. The Access row of the Guidelines (Design Options for Welcoming Interests & Identities, Design Options for Perception, and Design Options for Interaction) treats variability as the place we begin. It does not wait for a disability label or an accommodation request (CAST, 2024a). The International Baccalaureate makes the same commitment in its Diversity, Equity and Inclusion Statement: "We embrace learner variability so that our learners are not excluded on the grounds of any of their characteristics" (International Baccalaureate Organization, n.d.).



The Access row of the UDL Guidelines 3.0. The full text is on the Prioritizing Access page.

This is what we mean when we say that barriers are in the design and the environment, not in the learner. The design is within our circle of influence as designers of learning engagements and environments. Standardisation at the system level widened access for many children over the last two centuries. Designing for variability builds on that work, so more learners can take part from the start.

Where We Can Start

We can start with our next unit planner, assessment or class conversation. Before we design, we can ask: who in this room am I designing for, and who am I designing around?

Then we can name the predictable ways our learners vary, in attention, language, sensory access, prior knowledge, interest and identity, and build options for those differences into the learning experience from the start. A design built for an average learner fits almost no one, just as Norma fitted almost no one in Ohio in 1945.

Created by Beth Stark, Educator and Consultant · Inclusive Learning Systems · UDL · Accessibility. Licensed under CC BY-NC 4.0 (https://creativecommons.org/licenses/by-nc/4.0/). The UDL Guidelines are © CAST.