How to deal with students' individual differences

From tracking to adaptive teaching

by Hanna Dumont
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Around the world, every public school system is faced with the challenge of educating large numbers of students efficiently while also meeting the needs of each student. The waves of international migration taking place today make this challenge particularly daunting: Schools, teachers, and school systems have to respond to an increasingly diverse student body and very different needs.

The fundamental question is this: How can we ensure that all students have the opportunity to learn and reach their full potential—regardless of their place of birth, family of origin, religion, gender or cognitive abilities?

One common response to this challenge has been to group students with similar achievement levels into courses, study programs, or schools – a practice known as tracking. The aim is to create more homogeneous groups of students, with the assumption that this will make it easier for teachers to tailor instruction to students’ needs.

Tracking exacerbates educational inequalities

Most school systems in developed countries practice some form of tracking, in particular in secondary schools. In several European countries (e.g. Germany, Switzerland, Belgium), students of different achievement levels even attend separate secondary schools. In other countries (e.g. the US, the UK, Portugal), students go to the same school but are grouped by ability for some or all of their subjects.

While tracking is motivated by worthy goals, its effectiveness has been the subject of heated debate among both policymakers and researchers. There is empirical evidence that tracking exacerbates educational inequality. With less demanding curricula, lower instructional quality, lower expectations, and fewer resources, lower tracks provide less opportunity to learn. Even more alarming, the assignment to a given track is often biased by race or social class. So tracking is hardly an ideal solution for dealing with student heterogeneity.

So what to do? Policymakers and researchers are beginning to recognize that the success of a school system is determined less by its structure or institutional arrangements – such as tracking – than by what actually happens in the classroom. In recent years, more and more policymakers have been urging schools to personalize learning, individualize instruction and adapt teaching to students’ needs in heterogeneous classrooms.
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Researchers, too, have argued in favor of adaptive teaching, an approach that requires teachers to “micro-adapt” their instruction on a continuous basis. After assessing students’ strengths and weaknesses, teachers capitalize on strengths and compensate for weaknesses, with the ultimate goal of teaching students to become self-regulated learners.

Is adaptive teaching the better solution?

This approach is very different from what most of us experienced when we were in school. In an adaptive classroom, the teacher doesn’t convey the same content to all students; instead, students may be working on different tasks at the same time. Some may be working independently, while others are engaged in learning with their peers, and still others are being introduced to new subject matter by the teacher. Low-achieving students will receive more guidance and structured support from teachers than high-achieving students, who are more capable of working on their own.

To determine how much structure students need and how much difficulty they can handle, adaptive teachers are careful to determine what each student already knows, by engaging in informal teacher-student interactions, reviewing students’ assignments or conducting more formal assessments. The goal is to gradually reduce the amount of structure so that students can become more independent learners.

So is adaptive teaching the best way to deal with students’ individual differences and provide equal learning opportunities for all? We don’t know. There is very little empirical evidence on the effectiveness of adaptive teaching. From a theoretical point of view, adaptive teaching may be a promising response to an increasingly diverse student population.

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But we should also note that adaptive teaching involves certain risks. It places significant demands on teachers, and as a result they may be overburdened and less likely to provide high quality instruction, in particular for the low-achieving students who need more guidance. While adaptive teaching certainly seems promising, it is imperative to identify the conditions under which it is likely to be effective.

Letting practice inform research

Because adaptive teaching is still relatively uncommon, it has been difficult to conduct systematic observations. There are, however, a number of innovative schools around the world that are applying a micro-adaptive approach to teaching.

Interestingly, these schools are often located in areas with a highly diverse population, and in some cases they have made classrooms even more heterogeneous by creating mixed-age groups or
including students with special needs. Such schools have moved far beyond the current debate among policymakers and researchers.

“Maybe it's time to let practice inform research, rather than the other way around.”

Maybe it's time to let practice inform research, rather than the other way around. How do these schools deal with students’ individual differences? What does adaptive teaching look like in practice? Are students better able to reach their full potential in such classrooms? Is learning more successful than in regular classrooms? Let's find out.

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