

AVOIDING DEJA VU: NEW IDEAS FOR EDUCATION IN THE 21ST CENTURY

EVITAREA DEJA VU: NOI IDEI PENTRU EDUCAȚIE ÎN SECOLUL XXI

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Abstract. *What does the school of the future look like? If you're asking that question, you've framed the issue incorrectly already. Maybe the school of the future isn't a school at all. A better question would be, what does education look like in the 21st c.? How is it possible that in the last 200 years, everything in the world around us has changed radically except education. Even given the actual opportunity afforded us given the massive disruption caused by the COVID-19 pandemic, all most schools did was move traditional school online: students logged-in to zoom or google classroom and a teacher was there, primarily at the center of the classroom in much the same way as in school buildings. Many or even most students "joined class" with their cameras off, as a symbolic representation of tuning-out their teachers in the same way they would tune out in a traditional classroom. As we get deeper into the 21st c., we owe it to students to use technological tools available to us to transform education.*

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If you told a caterpillar that one day it would fly, it wouldn't believe you. But it's true, and it happens every year all over the world. It is nothing short of a miracle, if you really think about it. The transformation a caterpillar undergoes is the perfect analogy for the transformation that must happen in 21st c. education. A slow-moving creature which crawls on the ground or on a plant or tree changes itself into a beautiful butterfly that flies away. We should aim for nothing short of this transformation when we think about a future vision for teaching and learning.

As far back as the 1950s, people were speculating about the future of education in ways that resonate now. In his short story *The Fun They Had* [1], Isaac Asimov described education in 2157 with "mechanical teachers" that lived in the house with students. Each student had his/her own robot and nobody actually physically went to a school building for school. Actually, the story depicts Margie (11) lamenting to her brother Tommy (13) that the schoolkids in the old days must have had so much fun, coming together in the schoolyard laughing and playing: "Margie was thinking about how the kids must have loved in the old days. She was thinking about the fun they must have had" [1].

Earlier in the story, Margie and her brother speculate as to how silly individual books were, because their mechanical teacher must have a "million books" in it [1]. They also ponder whether humans are smart enough to be teachers. These are interesting questions to ponder but the crux of the story, for me, is how the mechanical teacher acts similarly to the AI features embedded even in simple learning apps like Duolingo. The mechanical teacher calibrates progress through a lesson based on immediate feedback from the student and individualizes learning. A crucial dialogue from the story reveals the fallacy of homogenized, age-based learning:

Margie: "And all the kids learned the same thing?"

Tommy: "Sure, if they were the same age."

Asimov was onto an important critique of schools as they still exist: students are all expected to be ready to start at the same age, are all expected to progress through learning materials at the same pace (whether they are lagging behind or leaping forward), and are expected to all engage with the generic topics that the textbook author includes. These are three (3) fallacies of education even in the current year.

Firstly, all students are not ready to start at the same age. There is a wide disparity of experiences in home life, preschool, and kindergarten. In America, federal programs such as Head Start are trying to make sure that all children are ready to learn at the beginning of first grade, but disparities in abilities and maturity are readily apparent, and perhaps even most apparently, in primary school classrooms. For a first grade teacher to walk into class on Day One and expect all students at the same levels of basic reading and math would be ridiculous. Those students would be easily ranked along quite a broad spectrum from underprepared to highly prepared. Even assuming a teacher moves through materia at an average pace, some students will get left behind and others will be bored.

Secondly, one of the biggest challenges of all teachers but especially primary school teachers is that all students don't learn at the same speed (or in the same style). It is self-evident that students do not learn at the same pace. Some students will be hands-on learners, some will be methodical processors, others will see material once and simply input it to their brain. In a class of 20-30 students, some will be auditory, some will be visual, some will be reading/writing, and others will be kinesthetic learners. But a primary school teacher standing in front of 20-30 students can only do so much in terms of varying their instruction based on the needs of the each one. In an ideal classroom, each student would have learning opportunities closely associated with their learning style.

Finally, when progressing through learning materials such as social studies or language arts, it is easy to understand how not all students will engage with all the material. Textbook designers aim to include material appealing to the broadest range of interests, but in this approach, they are guaranteed the following outcome: some students will engage with some of the material but not all students will engage with all of the material. The easiest example of this is books that junior high students are expected to read. In America, this canon usually includes *Diary of a Young Girl* (Anne Frank), *Animal Farm*, *Lord Jim*, *Adventures of Huckleberry Finn*, etc. but there have been some recent additions: *I am Malala*, *Life of Pi*, and *Twilight* amongst them [3].

All students are expected to read all the books and in fact are forced to read books not of their own choosing. Is it any wonder that so many junior high students "hate reading?" When I meet junior high students who hate reading—and I was one of them—I tell them they don't actually hate reading per se, they just hate being forced to read certain books that don't interest them. Everyone can love to read if they are reading something they are passionately interested in.

So, what does the school of the future look like? If you are asking this, you won't find the right answer. The school of the future probably won't look like a school at all. For hundreds of years, students have gone to schools that all look exactly the same. There are classrooms, there are desks lined-up behind each other in the classroom, and students sit in rows facing the teacher. I could take any students from 2024 and put them in a schoolroom in 1824 and they would know exactly what to do: walk in, take a seat, and sit there until the teacher tells them what book to pull out of their bag and what page to open up to.

How is it possible that everything about the world we live in has radically changed in the last 200 years except schools? In fact, most schools the way we operate them now were designed to train students during the Industrial Revolution to be the next generation of compliant workers: do as your told, don't make too much noise, don't ask too many questions, come to work/school on time, don't leave until it's over. In fact, even school bells replicate the classical conditioning factory workers need to be at their work station when the whistle blows and keep working until they hear another whistle for a break, for lunch, for another break, at the end of the day, etc.

But this isn't the world we live in anymore. Less and less jobs are routine, mundane factory jobs that require nothing more than obedience. Most graduating students will be expected to know

how to think creatively and not just follow instructions of their boss/teacher. Most graduating students will be expected to work both individually and on teams. And most graduating students will need to be able to work with co-workers from diverse cultural, linguistic, and national backgrounds.

One great curriculum that isn't getting enough attention comes from YouTube. Of course there are millions of videos that are a complete waste of time, but it is my belief that every lesson/every piece of content that any student would ever learn from a textbook, from a teacher, or in a school is available for free on the internet if a learner is curious enough and motivated enough to find it. YouTube is the greatest curriculum ever invented as long as people know how to use it. If they don't, or if they want a more structured course, many top institutions in the world either host their own websites (e.g., Harvard, M.I.T.) with much of their instructional content or have partnered with learning platforms such as FutureLearn, edX, or these universities who have put curriculum on Coursera [2]:

Duke University
Princeton University
New York University
Yale University
Cambridge University
London Business School

It is becoming necessary to wonder whether or not highly-motivated people need to attend schools at all or whether given a smartphone and unlimited data, if it would be possible to learn anything and everything imaginable. I tend to think this is the case. So, schools need to evaluate what they are contributing.

For teachers and schools to be relevant in the future, they need to analyze their model. Instead of teacher-centered classrooms—which are inevitable as long as students are in desks with learning materials chosen by the teacher—learning needs to be student-centered and individualized. One easy example is simply allowing students to have a greater say in the topics of their curriculum. With a local library card, students have access to tens of thousands of eBooks. The teacher can be the guide or the coach to help students find books that inspire them and spark their curiosity. In the 20th c., school district curriculum designers chose the books and the district ordered them. I can remember walking into junior high English classrooms and seeing 30 copies of Huck Finn, 30 copies of 1984, 30 copies of The Scarlet Letter. And the way the teacher used them was equally monolithic—everyone was expected to read at the same pace. We all started at the same page of the same book and progressed through it as a group. This was incredibly frustrating to people who read slowly as well as to those who read quickly.

Another example of homogeneous curriculum comes to mind when I was the Executive Director of ESL Programs at Ohio State University. One of the teachers in our pre-enrollment, Intensive English Program for English Language Learners—almost all of whom were from Saudi Arabia—came back to the office after class and I'll never forget the conversation we had about her class that day:

Bob: "Hey... how was class today... what did you teach"?

Teacher: "The lesson was about box turtles".

Bob: "Box turtles? That's peculiar. How did you end up teaching about box turtles"?

Teacher: "Well, yesterday we finished Chapter 4 the next chapter was box turtles".

I was stupefied and remember asking how the students engaged with the lesson. The teacher told me they weren't very interested in fact and shrugged her shoulders and went back to her desk. This reminded me of a meeting I had with a teacher at the end of summer, when I was appointed to be the Executive Director. Her job over the summer—since all the students went back to Saudi Arabia

that year for Ramadan and we operated a skeleton program for the relatively few students from non-Muslim countries—was to redesign our curriculum. This was 40 hours-a-week, 5 days-a-week, for 8 weeks. What she showed me for the *curriculum* was a list of books for each of the levels students were divided into. Our conversation went in a circle from there:

Bob: “What’s this? It just looks like a list of books to me”.

Teacher: “It’s our new curriculum”.

Bob: “So the curriculum is a list of books”?

Teacher: “It’s not just a list of books...it’s a curriculum”.

Bob: “Well, it looks like a list of books”.

Teacher: “It’s a list of books that are our curriculum”.

Looking back on it, I should have taken this opportunity to share with the teacher this definition of curriculum, from the Rhode Island Board of Education website: „Curriculum is a standards-based sequence of planned experiences where students practice and achieve proficiency in content and applied learning skills. Curriculum is the central guide for all educators as to what is essential for teaching and learning, so that every student has access to rigorous academic experiences. The structure, organization, and considerations in a curriculum are created in order to enhance student learning and facilitate instruction. Curriculum must include the necessary goals, methods, materials and assessments to effectively support instruction and learning.” [4]

Instead of just choosing off-the-shelf textbooks, teachers need to think about *learning materials*. Learning materials includes everything from low-tech to high-tech, informal or formal, local or global. This understanding can lead to a much more interesting and interactive experience for the learner. One example I always use with primary school teachers here in Moldova is Minecraft, Roblox, and Brawl Stars. Those are multiplayer online games that most primary students (and junior high students) are playing. The companies making the games have figured out how to spark the curiosity and engagement of children, so why can’t teachers capitalize on this and figure out ways to make those games into language lessons, math lessons, even geography or social studies lessons.

There’s a saying that teachers often repeat: “meet the students where they are... but don’t leave them there”. With this in mind, educators of the 21st c. owe it to students to construct learning opportunities for students that are not homogenized and in fact are just the opposite: completely individualized. When designing curriculum and pedagogy, educators need to transform from a caterpillar slinking along the ground to a butterfly flying through the sky. This transformation won’t be easy but it isn’t impossible either. If you think it is, just remember the caterpillar.

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