Paradigm Change in Education
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https://www.youtube.com/watch?v=_c8xqpKQhdc
Minutes 45 to 58 and 1:07 to 1:18

There are two sides of the coin for leading paradigm change in education. Leaders need to know something about what changes to make, and they need to know something about how to make those changes happen. In other words, they need to know what the new-paradigm schools should be like, and they need to know how to transform the current industrial-age paradigm schools into learner-centered paradigm schools. I will address both sides of this paradigm-change coin.

What the New Paradigm Should Be Like
There are three points I would like to make based on a study of new-paradigm schools in the United States that my research team at Indiana University conducted.

First, the schools were **learner-centered.** This means that **student progress** was based on learning, rather than based on a predetermined amount time with all learners in a course required to move on at the same time, regardless of whether or not they had mastered the content. Our industrial-age system's time-based student progress forces slower learners to have gaps in their knowledge that make it more difficult for them to learn related material in the future, which virtually condemns them to flunking out. It also holds fast learners back from realizing their potential, and can even bore them to the point of wanting to drop out. Why do we need this change from time-based to learning-based student progress? In the industrial Age, manual labor was predominant, so we did not need to educate many people to high levels, and indeed could not afford to. In contrast, in the digital age, knowledge-work is becoming predominant, and all aspects of life are becoming much more complex, so we need to educate far more people to higher levels. Unless your economy is primarily industrial – think assembly lines – you need competency-based student progress now.

But how can a teacher manage a class when all students are progressing at their own rate? Clearly, learning needs to be **personalized**, rather than standardized. The schools we studied customized the pace of learning, the instructional methods to support learning, and even the learning goals for each student. Why goals? Well, of course there is some common-core knowledge that all students should learn. But there are many more different kinds of careers today than there were during the Industrial Age, so it is counterproductive for all students to learn all the same things. Instead, we need to cultivate each student's individual interests and talents, in addition to some common core or standard curriculum. So, some parts of the curriculum need to be required of all students, while others need to be personalized, along with pace and instructional methods. Learner profiles are key to accomplishing this, and technology can automatically update those profiles.

But how did these schools personalize learning in a way that teachers could handle without being overburdened? The student's role needed to change from passive (that is, learning by listening and reading) to **active learning** (that is, learning-by-doing, or project-based learning). Consequently, the teacher's role needed to change from sage-on-the-stage to guide-on-the-side. Technology can provide immersive learning environments to make projects highly motivating to students, and it can also provide tutorials to ensure efficient mastery and transferability of the needed skills and knowledge immediately before they are needed during each project. Many such tutorials are already available online for free from sites like the Khan Academy. Students can also help each other learn in team-based projects with collaborative learning, which will help prepare them for the workplace,

where knowledge work is done primarily in collaborative teams. And students can be coached to be more self-directed learners, which is so important for becoming effective life-long learners.

All these features – competency-based education, personalized learning, project-based learning, collaborative learning, and self-directed learning, with student as active learner and teacher as guide-on-the-side – are systemically interdependent. None of them can be very effective without all the others. In other words, we cannot make piecemeal changes to the teacher-centered, Industrial-Age paradigm of education, any more than we could make piecemeal changes to a train to turn it into an airplane. The Industrial-Age and Digital-Age paradigms of education are incompatible. We need to change our mental model of education to think in terms of continuous student progress, which means doing away with grade levels. We need to think in terms of projects, which means doing away with courses. We need to think in terms of competencies or micro-credentials, which means doing away with grades. We need to think in terms of studios or workshops for conducting projects, which means doing away with classrooms as we know them. This has been a long first point, so I'll be quick with my next two points regarding the nature of the new paradigm.

My second point can be summed up by this. Ask a teacher, "What do you teach?" Think about it. How many teachers would say, "students"? Our students are more than what they think and know. Their developmental needs extend far beyond acquiring skills and knowledge. Their social and emotional development are also very important. Especially for younger students, educators must be concerned about their **full, well-rounded development**: cognitive, social, emotional, psychological, physical, and so forth. Daniel Goleman has presented convincing evidence that emotional intelligence is more important to one's success and happiness in life than is cognitive intelligence. The recent focus on social-emotional learning (SEL) is a welcome recognition of this fact. Furthermore, it has been said about students that if they don't think you care, they don't care what you think. So, increasingly in learner-centered paradigm schools, we are seeing that each teacher is responsible for a developmental stage of a child's life. The student stays with the same teacher for about three to four years, with the option to change teachers if they are not a good match. This means that each teacher has students of different ages (within a given developmental level) in their home room. This way, the teacher gets to know each student much better and can foster their full, well-rounded development. This is a highly effective way of incorporating human values into the educational system.

My final point regarding the nature of the new paradigm is that student projects should not be designed and selected just to better the student; they should also **better the student's world** (Prensky). This should start at a very young age to better their family and school, then gradually widening to bettering their community, state, and nation.

How To Lead the Paradigm Change Process

Now, to the second side of the paradigm-change coin. It is important to understand that paradigm change is much more difficult than piecemeal reforms, because virtually all the parts of the industrial-age, teacher-centered educational system need to change. I spent 11 years facilitating a paradigm change effort in a small school district in Indianapolis, with the support of a team of doctoral students at Indiana University, and that gave us a wonderful opportunity to advance knowledge about the paradigm change process in a small school district. I would like to share some of the most important principles with you here. But before I do, I would like to comment on the difference between transforming an existing educational system and designing a new school system. It is much harder to transform an existing system. So that is what I will talk about now.

My first principle is about the most important outcome of a paradigm-change effort. This may surprise you. The most important outcome is not the system features you have implemented, but the

extensiveness of **change in mindsets** – also called mental models – that takes place in the system's stakeholders. Without mindset change in stakeholders, no paradigm change can succeed in a school system, because the teacher-centered mindset is incompatible with the learner-centered paradigm. With changes in mindsets, teachers, administrators, parents, and even students will all understand how much better the learner-centered paradigm is and will push the system to transform. Furthermore, if it is only leaders, or administrators, whose mindsets change, everyone else is likely to resist the transformation, and it will not succeed. I have identified a variety of ways to foster mindset change, including having stakeholders visit a good learner-centered school, or watch a video about such a school, or even just read about such a school. And engage in small-group discussions about that school.

So, my second principle is **broad stakeholder involvement**. It is important to help *many* stakeholders evolve their mindsets about education, especially the opinion leaders in each stakeholder group – teachers, administrators, support staff, students, and even parents. In fact, people are much more amenable to change if they feel some control over both the nature of the change process and the nature of the changes. So, stakeholder participation and sense of ownership in the transformation process are very important for reducing resistance, increasing motivation to transform, and enhancing sustainability.

My third principle is **political support**. You must have support from the leaders of all stakeholder groups so that no group will try to sabotage the transformation effort, but also because the transformation process is going to require considerable money and expertise. The learner-centered paradigm is not more expensive to operate than the teacher-centered paradigm, but the cost of transforming an industrial-age system to a learner-centered system is high. It requires making one-time changes to facilities, technology tools, teacher skills, and even students' approach to learning. To get these resources for transformation, you need political support.

My fourth principle is **whole-system transformation**. I have seen many school districts in which one school is transformed with a lot of vision and energy from its principal and teachers, but 10 years later, the school had reverted back to the teacher-centered paradigm. Why? Because it became incompatible with the rest of the school district (like a railroad is incompatible with an airline), and powerful systemic forces constantly worked to make it compatible again. If you do not change the entire system, the changes will not endure. Guaranteed.

But, given that the transformation process is expensive, it is hard to afford to transform an entire system all at once. So, this leads to my next principle, the **parallel systems approach** to transformation. The air transportation system did not take hold by transforming railroads. It was created as a parallel system alongside railroads, and over time more and more passenger-miles switched from railroad to airplane. In a similar way, a school district can be split into two districts that operate independently of each other, with an agreement that students, teachers, and administrators can choose whichever paradigm they want. Those who are most interested in the learner-centered paradigm will be the pioneers who blaze the trail for those who are less committed to follow later. Eventually, the migration will be complete, and the teacher-centered schools will all be gone. This spreads out the transformation cost over time, making it more affordable while providing sufficient resources for the pioneers to succeed. And it reduces resistance by not forcing those who are most reluctant to change until they have more tangible proof of the greater effectiveness and better quality of life in the learner-centered paradigm.

I have identified many other principles for the paradigm change process based on my experience facilitating paradigm change, but also based on the experience of more than 1,000 transformed schools across the United States. These have been mostly charter schools, given that

those schools are so much easier to transform with the whole-system approach, because they are typically single schools not controlled by a larger district. Other important principles that I have described in my *Vision and Action* book include leverage, emergence, systems design, ideal design, process over product, consensus-building process, participatory leadership (also known as servant leadership or developmental leadership), readiness, capacity, culture, and prioritization of designing the learning experiences.

Given how difficult and expensive the transformation process is, I strongly encourage leaders to find a facilitator who has experience with this kind of school change, or at very least to find a facilitator who will read extensively on the topic. Paradigm change is hugely important to the future of our children, our communities, and our countries, especially given the growing threats of extremism, factionalism, climate change, and artificial intelligence. I admire you for your interest in leading paradigm change in education. I believe there is no higher calling.