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PAPERBACK ISBN: 978-1-4166-2157-7 ASCD product #116016  
PDF E-BOOK ISBN: 978-1-4166-2159-1; see Books in Print for other formats.  
Quantity discounts: 10–49, 10%; 50+, 15%; 1,000+, special discounts (e-mail [programteam@ascd.org](mailto:programteam@ascd.org) or call 800-933-2723, ext. 5773, or 703-575-5773). For desk copies, go to [www.ascd.org/deskcopy](http://www.ascd.org/deskcopy).

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### Library of Congress Cataloging-in-Publication Data

Names: Rickabaugh, James.

Title: Tapping the power of personalized learning : a roadmap for school leaders / James Rickabaugh.

Description: Alexandria, Virginia : ASCD, 2016. | Includes bibliographical references and index.

Identifiers: LCCN 2015042275 | ISBN 9781416621577 (pbk.)

Subjects: LCSH: Individualized instruction.

Classification: LCC LB1031 .R53 2016 | DDC 371.39/4—dc23 LC record available at <http://lccn.loc.gov/2015042275>

# Tapping the Power of **PERSONALIZED LEARNING**

A Roadmap for School Leaders

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## Introduction: Imagine Schools Where . . .

As you open the door to the elementary classroom and step inside, you are struck by the amount of activity and engagement you see and hear. Students are spread throughout the room. Some are huddled together working on a complex math problem. Two students are reading together. Several are sitting quietly on their own—some reading books, others engrossed in their electronic tablets. A small group of students is talking with the teacher about the next math skill they'll be learning and how they'll be able to use it to solve problems both in and out of the classroom. Still others are practicing new skills—some using pencil and paper, others on personal computers.

You approach a few of the learners and ask them what they're doing. One of them reports that he's about to finish his learning plan to add double-digit numbers with fluency and is scheduled to take an assessment the next day. Another describes her current learning goal to master partial product division; when she reaches her goal, she will demonstrate the process for the rest of the class. Still another student explains that her goal is to learn how math might be applied to gymnastics, her current

passion. So far, she has found a variety of applications, from tracking practice repetitions to plotting her floor routine on a mat. She says that she knows there are more complicated math connections that she might study later, and discovering these connections helps her to both understand and enjoy math more.

You wait until the teacher has finished her conversation with the small group and approach her. She explains that these students are all ready to learn a common skill, so she grouped them for strategic instruction—a short, focused form of direct instruction.

Your next stop is a nearby middle school. As you enter a classroom, you again see learners highly engaged in a variety of activities. You notice a few of them at low carrels in one corner of the room working by themselves, a small group that appears to be working on a joint project, some students in pairs, and others cycling through individual conferences with the teacher.

During a break between student conferences, the teacher explains that today his learners are meeting with him to update their goals and, in some cases, to set new goals for the next phase of their work. He notes that managing classroom behavior is almost a thing of the past; he spends much more time now managing learning processes instead. You ask about the key difference between the new model and the old way of doing things. The teacher smiles and explains that he used to spend his time planning, delivering, and following up on lessons and reminding learners to do what he expected of them. Now, he says, they play an active role in setting individual learning goals aligned to standards, planning what and how they will learn, identifying the resources they will need, and determining how to demonstrate their learning. As a result, learners feel a much greater sense of ownership and responsibility for their learning. The teacher works primarily as a coach and adviser, identifying resources and providing specific strategic instruction when necessary, but spends very little time disciplining students for off-task behaviors.

A high school classroom is next on your agenda. Your first impression is that it's much like the elementary and middle school classrooms, but here you see even more independence in learning activities. You learn that some students are out in the community collecting data and meeting with local businesspeople and government officials to gather information for later analysis. Students within the classroom appear to be organizing themselves according to the work they're doing. Some are deeply engaged with work on their computers; others are engaged in virtual conversations with fellow learners from other countries. You learn that this afternoon two students will be presenting their global issues projects to an audience of peers, a professor from the university, and three research scientists from a local biomedical company.

Your conversation with this teacher includes much of what you heard earlier, and you are struck by the extent to which students are planning and guiding their own learning. The teacher notes that learners are using standards to guide their work and measure their performance. Though she's actively involved, she's mostly in a support or even co-learning role rather than that of a traditional instructor.

Following your visit, you stop by a local coffee shop with WiFi access and check achievement data for the three schools you visited. You were not sure what to expect since there did not appear to be a major focus on traditional teaching or preparing for standardized testing. The emphasis seemed to be much more on broader and deeper learning and far less on memorization and rote practice that might be closer to what would be on these tests. To your amazement, the performance of students was very strong; among the highest in the region. You look back to see historical trends and note that five years ago, these schools performed at the average in the region and in some cases below. Over the past few years, their progress has been significant, especially when you reflect on the economic challenges of the communities they serve and diversity of learners in their classes.

What you have just experienced may feel like fiction, but it's not—thanks to the work of the Institute for Personalized Learning (IPL) and its member school districts, it is increasingly a reality across the Midwest, and hopefully soon across the country. The IPL approach to learning and teaching taps the commitment, imagination, and creativity of students and encourages them to serve as active partners in their learning. It focuses on building learning capacity rather than simply accumulating academic content that could be easily accessed online.

This book is about transforming the learning ecosystem we have inherited from our parents and grandparents to better prepare learners for their futures. The world has changed and continues to change dramatically—we can't afford to prepare today's learners for yesterday's challenges or even for today's. Over the past five years, our colleagues in the network and we at the Institute for Personalized Learning have learned a lot about what works in schools and what doesn't. We understand and appreciate the crucial role that education leaders play in determining whether to consider, implement, and sustain transformational change; our purpose is to help you maximize the likelihood of success.

The really good news is that the IPL model draws from the best research on deep and purposeful learning. This is not an approach that relies on “experimenting” with students; rather, it rests on what we have known about real, quality learning since before the creation of schools as we know them today.

In the coming chapters, we will describe the elements of conventional instruction that fall short or even get in the way of student learning and share strategies, practices, and tools to help you redesign your approach. Our goal is to make the model understandable, accessible, and usable regardless of existing conditions at your school. However, for the model to succeed, you must be willing to shift away from what doesn't work and open to trying something new.

## A Definition of Personalized Learning

*The philosophical shift that occurs when personalized learning transforms practices in a building affects everyone, including me as a school leader. Our roles become less focused on reactive ways to address concerns, whether academic or social-emotional. Instead, our efforts become more global and systemic—we are able to proactively support all students as they grow by investing our time and energies into systems that ensure they have the mindsets and behaviors to be successful in their current and future endeavors.*

—Randy Daul, principal, Asa Clark Middle School,  
Pewaukee, Wisconsin

You’ve probably heard the term “personalized learning” many times and discovered it to mean many different things. Currently, the best-known and most widely publicized definition is the one included in the U.S. Department of Education’s (USDOE) National Education Technology Plan (2010):

Personalization refers to instruction that is paced to learning needs, tailored to learning preferences, and tailored to the specific interests of different learners. In an environment that is fully personalized, the learning objectives and content as well as the method and pace may all vary (so personalization encompasses differentiation and individualization).

Though helpful, this definition misses a key element of truly personalized learning environments: repositioning of the student within the learning and teaching process. The USDOE definition stops short of recognizing the powerful role students must be allowed to play in setting learning goals, planning their learning paths, tracking their progress, and demonstrating their learning as partners and codesigners alongside educators. It misses the shift in instruction from something we do *to* learners to something we do *with* them, which accounts for the real power of personalization. In a truly personalized environment, learners play

a key role in planning, developing, demonstrating, and applying their learning, and in so doing develop greater self-efficacy, ownership, and learning independence—key preparation skills for the lives they will lead and careers they will build.

According to the USDOE definition of personalized learning, each learner pursues unique learning objectives and engages with individually tailored content at a pace that is personally comfortable. One might conclude that such learners may not develop a common body of knowledge or skills and, as a result, that educators are left without a comprehensive view of what learners need to know and be able to do before graduating. An absence of standards debated and adopted by the community risks depriving schools both of a common focus and of accountability to the community and could leave students ultimately unprepared for future success. Without question, learners need to move at their own pace and engage in classroom activities suited to their individual interests and levels of readiness, but alignment of instruction to appropriate standards remains enormously important.

We define truly effective personalized learning as follows:

An approach to learning and instruction that is designed around individual learner readiness, strengths, needs, and interests. Learners are active participants in setting goals, planning learning paths, tracking progress, and determining how learning will be demonstrated. At any given time, learning objectives, content, methods, and pacing are likely to vary from learner to learner as they pursue proficiency aligned to established standards. A fully personalized environment moves beyond both differentiation and individualization.

Our definition diverges from the traditional approach to instruction in the following ways:

**It shifts the roles of learners and educators.** Students and teachers move from a model in which teachers make all significant decisions and students are expected to comply, to one



where both parties work together to make decisions about learning aligned to standards and intended learning outcomes.

**It ensures purposeful learning.** Educators and learners actively consider the “why” of learning, and in doing so give meaning and focus to instruction.

**It supports individual learning goals and action plans.** Personalized learning goes beyond placing learners at the center to actively involving them in designing the learning path, identifying learning options and resources, monitoring progress, and demonstrating what they have learned.

**It varies the pace of learning while remaining focused on established standards.** Variations in how and how quickly students learn are respected and accommodated to ensure that learning, rather than instruction or curriculum, is the focus.

**It focuses on broader concepts and deeper learning.** Instruction that prepares students for their futures goes beyond asking students to memorize, organize, and sequence content to engaging students deeply in content and enlisting them to frame problems, design solutions, create models, and build lifelong interests and skills.

**It develops collaboration skills and strategies.** Personalization does not mean that students are isolated as they learn. To the contrary, working in pairs, in small groups, and as a whole class helps students to develop important social and work skills as they draw from other learners to design, solve problems, and build new knowledge together.

**It uses technology as a support.** Technology plays a key role in personalized learning, particularly as we work to scale the approach across groups and learning contexts. However, it is limited to a supporting role as a tool to explore, create, collect, analyze, and track data.

**It affords learners greater ownership of and influence over learning.** When students become more active partners in their learning, their level of commitment and persistence grows as

they increasingly feel a vested interest in learning outcomes. They develop the skills necessary to make decisions about and engage independently in their learning long after leaving the classroom.

**It supports a variety of learning approaches.** By placing learning rather than instruction at its center, the IPL model encourages collaboration between students and teachers in designing a learning path and thus rejects the “one-size-fits-all” approach that most of us experienced as students and too often continue to encounter as educators.

**It builds learners’ skills and capacity with the support of important content.** As noted earlier, personalized learning goes beyond the accumulation of academic content. Although content is very important, its role is to support the skill development and capacity building necessary for continued learning.

**It fosters learning independence.** Our ultimate goal is for students to no longer have to depend on us for their learning. Our purpose as educators is to support them as they become increasingly independent, accrue skills, and make choices in pursuit of meeting established standards.

## **Technology and Personalized Learning**

Advertisements presenting the benefits of technology in education might lead you to conclude that the more technology students have at their disposal, the more personalized their learning is. If this were true, you’d expect personalized learning to be well under way throughout the United States, given the amount of money we spend on technology in schools. Unfortunately, there is little evidence that investing more in technology has “moved the needle” at all in terms of academic achievement (Tamim, Bernard, Barokhovski, Abrami, & Schmid, 2011). Certainly, data on the effect of technology on academic achievement do not suggest that more technology alone will lead to better outcomes

for students. One of the problems is that educators too often employ technology to support conventional learning activities that have been around for generations—think worksheets and print reading. What’s more, educators often fear that technology strips them of control over instruction and leaves them unable to adequately assess student progress—a justifiable concern at a time when educators are confronted with demands to keep up with technology while simultaneously relying on assessment measures from bygone eras.

Nevertheless, technology plays an important role in personalized learning. One of the best descriptions of its role that we have encountered is from Mary Ann Wolf:

Personalized learning requires not only a shift in the design of schooling, but also a leveraging of modern technologies. Personalization cannot take place at scale without technology. Personalized learning is enabled by smart e-learning systems, which help dynamically track and manage the learning needs of all students, and provide a platform to access myriad engaging learning content, resources, and learning opportunities needed to meet each student’s needs everywhere at any time, but which are not all available within the four walls of the traditional classroom. (Wolf, 2010, p. 6)

Our experience implementing the IPL model over the past five years is consistent with Wolf’s description. We have found that technology typically plays the following roles in personalized learning:

- Providing immediate, specific, objective feedback on learning that can also serve as a dialogue trail about learning efforts and activities.
- Sustaining motivation by providing choices of relevant content, customized learning pathways, and varying levels of difficulty.
- Capturing real-time data that support analysis and tracking of student learning. For many activities, technology can

be used to record and share results immediately, helping teachers to analyze areas of struggle and intervene quickly before confusion and misconceptions set in.

- Supporting student reflection on learning strategies, challenges, ideas, and experiences and facilitating the sharing of reflections with others.
- Seeking out, identifying, and contributing additional learning content and tools to support individual and group learning. When students bring additional information and their own discoveries to bear on their learning, their sense of commitment to and ownership of the learning grows.
- Tracking progress on learning goals, action plans, student achievement, and assessments. Technology can place these activities in the hands of learners as well as educators and parents, thus supporting shared responsibility and ongoing student-teacher collaboration.
- Providing multiple means for learners to acquire, express, and engage with information and participate in a variety of assessment activities, leveraging principles such as Universal Design for Learning (Hall, Meyer, & Rose, 2012).
- Supporting skills practice and knowledge acquisition. Well-constructed applications can support learners to engage in independent practice with real-time feedback and track progress related to consistency and automaticity.
- Communicating and collaborating with others. Technology can facilitate ongoing dialogue, questioning, information sharing, and problem solving among learners or with adults without necessitating face-to-face contact.
- Introducing and supporting learning challenges and simulations. Students can be given the freedom and flexibility to engage in a variety of interesting activities that also generate a wide range of learning outcomes.
- Exploring and learning from perspectives beyond geographic boundaries. No longer must learners depend solely

on textbooks, field trips, or the knowledge of educators to explore and understand other perspectives. Technology allows them to see the marvels of the world, speak in real time with experts from around the corner or around the globe, and explore history from the perspective of others who have vastly different views and experiences.

- Supporting embedded assessments in the form of simulations, virtual worlds, augmented realities, and game-based performances. Technology can support assessment activities that range far beyond traditional paper-and-pencil tests. Well-constructed assessments can help learners to build clarity and coherence regarding what they are learning, thus adding value beyond simply measuring progress.

## ACTIVITY

### The Readiness for Change Rubric

**Time:** 30 minutes

**Type:** Reflective

**Who:** Administrative team

**Difficulty:** 2 out of 5

**This gets you:** A sense of how ready your school is to start designing for and implementing personalized learning. Don't worry if you find that most of your responses fall in the "not in place" category. The key is to understand where you and your school are now and where you may need to start.

**Keep in mind:** Just because you're ready as a leader to implement personalized learning doesn't mean that

your staff is ready. Be honest as you complete this rubric. You may find that you need to spend additional time on prerequisite activities before embarking on implementation. Every school's journey is different. The key is just to get started.

**Rating system values:**

1 – Not in place

2 – In process

3 – Substantially in place

4 – In place (implemented)

5 – Ready for adjustment or refinement

We have developed a clear and compelling picture of the need for educational change.	1	2	3	4	5
We have made a commitment to organizational change.	1	2	3	4	5
We have carefully and thoroughly examined the assumptions underlying the current system of educating learners and identified those that need to be altered or abandoned.	1	2	3	4	5
We have identified potential action steps in response to the needs and pressures for change.	1	2	3	4	5
We have developed new assumptions regarding how the system works or can work.	1	2	3	4	5
We have communicated the needs, pressures, and options for change throughout the school.	1	2	3	4	5
We are dedicated to nonlinear, fundamental change—not incremental change.	1	2	3	4	5
We have developed new ideas and approaches related to instructional practices and student learning.	1	2	3	4	5

We have shared information about shifting the system toward personalized learning with key staff.	1	2	3	4	5
School leaders understand personalized learning and can clearly articulate why it's being implemented.	1	2	3	4	5
The principal understands personalized learning and can clearly articulate why it's being implemented.	1	2	3	4	5
Educators understand personalized learning and can clearly articulate why it's being implemented.	1	2	3	4	5

If you indicated mostly 3s and above, your school is ready to start implementing the personalized learning model. If your school is not ready, in addition to reading on, be sure to

- Clarify your mission and vision statements to support personalized learning.
- Investigate examples of and explore research on personalized learning.
- Facilitate overview sessions to communicate the need for change (and the direction that the change will take) to staff. Explain that school is about meeting the needs of students, not adults, and that you will all be undertaking this journey together—with room for trying new things and the understanding that not everything will immediately work out.

Create a chart with three columns labeled “Action Step,” “Timeline,” and “Evidence of Progress” and fill it out with the steps you intend to take to get your school ready for personalized learning.

## **Reflection Questions**

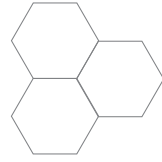
1. How would you compare the learning ecosystem at your school with the descriptions in the vignette at the beginning of the Introduction? What seemed familiar and what didn't?
2. Why is it important for any definition of personalized learning to address the role of learners?
3. What features of personalized learning do you find most compelling? Which ones might already be present in your school?
4. What role does technology play in the learning experiences at your school? To what extent does it contribute directly to improvements in learning?
5. How might technology contribute to learning growth and quality of work in a personalized learning environment?

## **Actions You Can Take**

1. Share the vignette at the start of the Introduction with a group of staff members and discuss the differences and similarities to your school. What benefits do the learning ecosystems described in the vignette offer? How do educator and learner roles and behaviors in the schools observed differ from those in traditional classrooms? How might shifting toward these types of roles and behaviors affect student learning?
2. Ask several colleagues and staff members how they would define personalized learning and listen carefully to what you hear. How do their definitions compare to the one on page 6? How easily can you identify any key differences? Use this information to clarify your thinking about personalized learning and begin discussions about how learning and teaching might change in your school.



3. Take an inventory of the ways in which technology supports learning in your school. To what extent does it replace or reposition traditional pen-and-paper practices? What examples can you identify of technology being used to show learners content and present experiences that were unreachable before? Are learners using technology to acquire knowledge and skills beyond what they're taught by their teachers? Where can you identify opportunities to better leverage technology in pursuit of improved student learning?
4. Develop your own position about the relationship between technology and learning, perhaps committing it to writing. Should you decide to walk the path of redesigning the learning environment in your school, your ability to clearly and consistently articulate the relationship between personalized learning and technology will be crucial to success.
5. Before going any further, take some time to reflect on your commitment to lead. Deciding to redesign the learning environment in your school to focus on learners and learning will require energy, stamina, focus, creativity, flexibility, and learning of you and your organization. You may be standing at a crossroads in your career and journey as a leader. The choice you make likely will have implications far beyond what you can imagine today. You do not have to decide now, but keep this dilemma in mind as you read further. Continue to ask yourself what is right for you and for the learners and educators whose futures depend on your choice.



# 1

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## Assumptions, Logic, and Levers: Changing Practices

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*As we continued to push new models, it was clear that everybody had an assumption about school: teachers, parents, principals, and students. These assumptions were so powerful that any changes were always met with a need for assurance that things would be “better.” This was the very moment that became the tipping point. I asked just one question: “Can you tell me about a time where you were part of an effective learning experience?” First of all, everyone had a story, but even more importantly, everybody could articulate a powerful personalized learning experience.*

—Ryan Krohn, assistant superintendent for curriculum and instruction/education accountability, School District of Waukesha, Wisconsin

*It’s funny how change can sneak up on you in unexpected ways. Our partnership with the Institute for Personalized Learning opened a door that allowed us to dream big—to rethink education as we had experienced it up to this point. We could overhaul our teaching strategies and the environment in which we support students. We were able to take the ceiling off of our teaching and reach our students in ways we never had before.*

*With administrative support to try new things, we have been able to take risks with our instruction and with our students. We are now free to “fail forward.” The power has now shifted from us being the sole deliverers of instruction, to our students giving voice to what that instruction will look like. They are now copilots in our learning journey. The results have been more than we could have expected: Our students are engaged, we are engaged, and the things that our students know and do truly show that they are on the road to being strong 21st century learners.*

*Now that year 2 of our personalized learning journey is coming to a close, we cannot imagine teaching any other way. We are invigorated. We are passionate. We are continually looking for ways to improve—not for us, but for the greater good of our students.*

—Kate Sommerville & Angela Patterson, 5th grade teachers, Swanson Elementary School, Elmbrook School District, Wisconsin



Three hundred years ago, if you were ill and visited a physician, you might have expected to have your blood drawn, but not to be tested—to actually treat your illness. Today we know that bloodletting probably contributed to the deaths of many patients and made many others more susceptible to illness and disease.

Although we might look back now and scoff, bloodletting was based on commonly held assumptions about the best ways to treat illnesses and was considered among the best medical practices of its day. In fact, much research was conducted to determine the conditions under which it should be applied and what other medical procedures might complement it.

Interestingly, there were physicians and researchers even then who questioned the efficacy of bloodletting. Still, the practice continued because it was generally assumed to be the right

thing to do. It was only when the medical community discovered the true causes of illnesses and began to apply more effective procedures that bloodletting fell into broad disfavor. It was never entirely abandoned, however: the practice is actually still being used today to treat certain blood-related ailments. The difference is that assumptions underlying its use are now much more sound, making it a very specifically targeted procedure (Greenstone, 2010).

So, what does bloodletting have to do with our practices in education today? It is disheartening to think of the number of school practices that are still supported, reinforced, and even expanded despite having consistently failed a large portion of learners. In many instances, these practices may have been suited to the context and purposes of education when they were first employed over a century ago. But today, when virtually all learners are expected to achieve at high levels, they are inadequate. Like bloodletting, some traditional practices may be effective under specific, limited conditions—and that's all.

## **The Power of Assumptions**

Assumptions, of course, are what we believe to be true. Whether we're conscious of them or not, the assumptions we hold can play a crucial role in how we form our perceptions and develop our beliefs. When our assumptions are correct, they help us to focus on actionable options rather than become distracted by impractical and unworkable solutions. When they are not correct, they confine us to a narrow set of possibilities and prevent us from charting new courses, practicing new behaviors, or setting new goals.

The world has changed enormously since certain existing assumptions about education first took root. For example, there was a time when we could afford to educate only a select few learners at high levels and allow the rest to leave school with

relatively low skills, knowing that the lower-skilled workers could still secure jobs that ensured a middle-class lifestyle. Today, most of those jobs are either automated or outsourced abroad. Our current economy requires an ever-growing portion of each graduating class to fill increasingly skilled and complex work roles, yet our schools operate in ways designed to serve an economy that existed 50 or even 100 years ago. Today we know much more about brain development and how people learn, yet we continue to manage schools as though more effort and accountability alone will somehow bridge performance gaps.

When redesigning a school system, we must first examine the assumptions upon which the current system rests and abandon those that are misguided. For example, consider the following assumptions about common school practices:

- **Practice:** Grouping learners by age and moving them through the system in batches.

**Assumption:** Students learn at the same rate and are ready for new learning at the same time as others born in the same year.

**Fact:** Each student learns at his or her own pace based on level of interest, learning history, maturity, and background knowledge.

**What if . . .** we gave students the support they needed to learn at a pace dictated by their individual readiness rather than by their ages?

- **Practice:** Using the same instructional approaches for entire groups of learners.

**Assumption:** Ability to keep pace with the class and learn from a set of standard instructional strategies is a good measure of learning aptitude.

**Fact:** Not all students learn in the same ways, and teaching them as though they did makes it inevitable that some will be held back when they're ready to move forward while others will struggle to keep up.

**What if . . .** we gave students the time they needed to learn and the support necessary to learn in the ways that best fit them?

- **Practice:** Waiting for learners to fail repeatedly before providing “remediation.”

**Assumption:** Failure is inevitable for some, and learners who fail need to be “fixed.”

**Fact:** We don’t have to wait for students to fail repeatedly before adjusting instruction to their learning needs, and “fixing” should begin with the instructional strategies.

**What if . . .** students were able to learn the way they learn best from the beginning and could receive the support they need in real time, as they’re struggling?

- **Practice:** Attempting to capture learning performance and progress through credits and letter grades.

**Assumption:** It isn’t necessary to be specific when reporting what students have learned; a general indication of what the educator judges as unsatisfactory, satisfactory, or exemplary is enough.

**Fact:** Credits and grades tell us little about the nature and level of current student learning. At best, credits are general indicators of progress, and grades are too often contaminated by factors unrelated to learning.

**What if . . .** learners had access to immediate feedback and were able to track their progress against standards in detail and in real time, all of the time?

- **Practice:** Using a system of rewards and sanctions to control student behavior.

**Assumption:** Students will not choose to learn without either the promise of rewards or the threat of sanctions.

**Fact:** Students show us constantly that they will choose to learn what they see as relevant, purposeful, interesting, and challenging. We only need to watch learners who appear bored and disconnected at school engage in social media,

video games, and extracurricular activities to see that they can be motivated to commit deeply. Further, when we send learners the message that we don't believe they will choose to learn without external motivators in place, we communicate that the learning isn't worthwhile on its own.

**What if . . .** the incentives and supports we offered to students were designed to develop self-regulatory skills and an internally driven commitment to learn?

- **Practice:** Administering standardized tests and assessments that focus almost exclusively on content knowledge.

**Assumption:** Knowing names, dates, places, sequences, and formulas is enough.

**Fact:** It isn't enough to define learning as simply memorization and recall of information. Technology has made memorization less necessary than it used to be, and much of what we might ask learners to memorize today may no longer be relevant or even accurate in the future. Further, when we allocate significant portions of learning time to low-level activities such as memorization and recall, we waste time that students could dedicate to building skills and learning capacity. These are competencies that will serve learners well in situations where problems are not neatly defined and challenges demand deeper understanding and creative, flexible approaches.

**What if . . .** learning and teaching were focused on building the learning skills and capacity necessary to thrive in a rapidly changing future, with specific content serving to provide context for learning application?

## The Logic of Personalized Learning

We know that learning begins with attention. Unless we are able to find relevance and draw connections, we are bound to let opportunities for learning pass us by. Sinatra (2000)

describes the learning process as autonomous, active, and self-constructed. Every day, we encounter innumerable stimuli that have the potential to result in learning. Because it is impossible to take in everything, we learn to pay attention to the stimuli that seem to hold meaning or relevance for us. This dynamic has important implications for the work of stimulating and nurturing learning in schools.

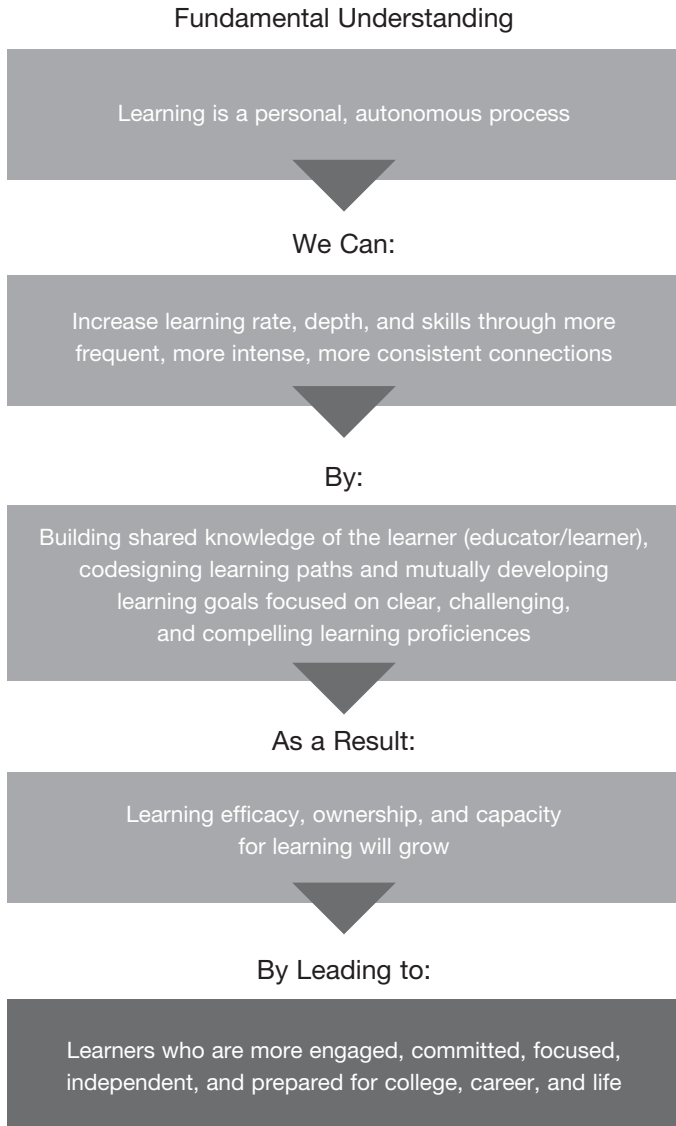
The traditional, “industrial” model of learning was designed to provide substantially the same learning stimuli to everyone in the class at the same time. Some learners would find a reason to pay attention—due to personal interest, perhaps, or because they wanted to please the teacher, or maybe because they knew they needed to do well to be allowed on the football team—and others wouldn’t. Such an outcome may have been acceptable in an era when most students were destined for traditional factory jobs, but today we need an educational system capable of supplying *all* students with a strong academic foundation. Our society requires citizens who can adapt to rapidly changing environments, think creatively, and critically analyze problems. Rather than a one-size-fits-all approach, we need an educational system built on the understanding that *all learning is personal* and with the flexibility to engage learners where they *are* rather than where the lesson, curriculum, or pacing chart assumes they *should be*.

Unless students are open and ready to learn, they aren’t likely to do it. The school leader’s challenge is to support educators as they create the conditions for *individual* learners to notice, engage with, and learn new content and skills. We can no longer be satisfied simply with sowing information like a farmer and hoping that the seeds of knowledge will take hold. We must actively ensure that students make frequent connections when learning and engage deeply as they learn. Unless we understand and accept the logic of this premise, there is no compelling reason to personalize the learning experience (see Figure 1.1).



Figure 1.1  
**Personalized Learning Logic Model**

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By increasing the frequency, intensity, and consistency of the connections students form with content, knowledge, and skills while also minimizing irrelevant stimuli, educators can have a dramatic effect on student learning. The intensity of the learning experience will be determined by students' levels of psychological readiness and emotional states, just as consistency in making connections will be determined by their levels of readiness, pace, and existing skills. When measuring student progress, we must do so against clear, compelling, and worthy proficiencies. Students will have little reason to commit unless the learning is challenging, purposeful, and ultimately useful. Given that *learning starts with the learner*, any connections that students make will be based on their experiences, interests, goals, and needs. The first thing we as educators must do to nurture these personalized connections is to really know our learners. Only then are we in a position to share knowledge and understanding with them.

## **Employing the Right Levers**

Though there have been myriad changes to our education system over the years—increased accountability, calendar and schedule changes, school choice, merit pay, ability grouping, smaller schools, increased testing, higher standards—few have resulted in improved outcomes for all learners (Payne, 2008). Decades of efforts have failed to meet the needs of our society. We deserve a system with the capacity to address current and emerging aspects of learning such as flexible thinking, systems awareness, and effective problem framing that are increasingly necessary for success in the world at large.

The good news is that we are beginning to understand just why previous approaches haven't worked and what we might do to change the situation. Recently, my colleague Tony Frontier and I completed a review of over 40 years of research on school improvement initiatives and created a simple framework

to determine the potential efficacy of efforts to improve learning (Frontier & Rickabaugh, 2014). Our framework identifies the following five levers for change to which policymakers and educational leaders typically have access when trying to make system improvements:

1. **Structures:** Organizational options, tools, and logistics
2. **Samples:** Student grouping options
3. **Standards:** Expectations and progress benchmarks
4. **Strategies:** Interactions that produce learning
5. **Self:** Student and teacher beliefs about learning and their roles in learning

Each of these five *Ss* holds varying levels of promise for supporting significant and sustainable improvements in learning. Interestingly, the levers most often employed by legislators, policymakers, and even some educational leaders are those with the least potential to affect student learning.

**Lever 1: Structures.** This lever refers to the manipulation of structural elements such as calendars, schedules, class sizes, grade configurations, improved facilities and equipment, and even technology to improve performance. Simply changing the structure of the educational system can help to support more powerful change levers, but is on its own a largely ineffective way to improve learning. Adjusting schedules to ensure adequate time for learning may be well and good, but unless learners are engaged in highly effective instructional activities, it won't improve learning outcomes (Zepeda & Mayers, 2006). Similarly, research shows that technology offers little benefits over traditional instructional activities unless it is strategically employed in the service of rich, effective learning (Tamim et al., 2011).

**Lever 2: Samples.** Many change initiatives have also relied on this lever, which posits that learning will increase if we group students strategically for instruction, whether by ability, age, interest, gender, or current performance. However, there is little

evidence that student grouping by itself leads to significant and sustained improvement in learning performance (Pahlke, Hyde, & Allison, 2014; Worthy, 2010). It is true that certain groupings can enhance or impede the effects of instructional strategies, but grouping strategies are not themselves drivers of improved student learning.

**Level 3: Standards.** Many educators and policymakers assume that simply raising or establishing new standards will result in improved learning, but a review of the research shows this is not true (Loveless, 2012). Standards can play a role by making it clear what students are expected to know and be able to do, but to make a significant difference in learning outcomes, we must align intended learning outcomes, instructional strategies, and teacher and student roles in the learning process.

**Lever 4: Strategies.** This lever is more powerful and dependable than the previous three. Well-chosen instructional strategies can help teachers to engage students, nurture their learning, and improve their performance. Examples of powerful, research-based strategies include those offered by Marzano (2007), Hattie (2009), and Hall and colleagues (2012).

**Lever 5: Self.** This is potentially the single most powerful lever for improving learning outcomes. It involves changing students' and teachers' existing beliefs about learning and their roles in the learning process. If educators see teaching as simply the transference of knowledge, then student learning will be confined to the educators' expertise rather than encompassing a wide range of resources that might be most impactful for learners. Similarly, if students confine their role in learning to following adult directions and learning to gain the approval of others, they have little incentive to become skilled, independent learners.

All five of the above levers play unique roles in driving and supporting significant change in our education system. The key to deploying them successfully is to tap the power that each can bring to improvement efforts.

## What We Have Known for a Long Time About Personalized Learning

Many assume that personalized learning is a new, untested approach. In fact, it is among the oldest methods of learning—Socrates employed it centuries ago. More recently, Benjamin Bloom proved many of the benefits and opportunities embedded in personalized learning (Bloom, 1984). Bloom and his graduate students at the University of Chicago conducted a series of studies in small groups and occasionally one-to-one, using mastery learning strategies and other techniques similar to those employed in personalized learning, to see if they could lift the learning of *all* students significantly beyond the level typically experienced in traditional classrooms.

The research uncovered some amazing results. Learners in the studies who received initial instruction in small groups using learner-focused strategies at a pace calibrated to match their readiness and who were offered feedback and support when necessary improved their average performance by two standard deviations—a 98 percent improvement. This level of performance was comparable to the top 20 percent of learners in traditional classrooms. The research also found that student engagement with learning ranged consistently between 85 and 95 percent across all ages of learners—an amazingly high level given that the average for U.S. students is in the 80 percent range for elementary school, 60 percent for middle school, and 40 percent for high school (Gallup, 2013).

You may be wondering why, if these results are so strong, we haven't been using Bloom's strategies for the past three decades. The answer is that Bloom couldn't find a way to scale the approach to reach all learners, and his instructional approach was too resource-intensive to fall solely on educators. But he showed that personalized learning *works*—that it's not a matter of *if*, but of *how*. Thirty years ago, Bloom didn't have

access to the technology available today. Learners no longer must depend on educators to introduce them to all new content or support all learning activities, nor must they rely solely on teacher-generated resources and assessments. Today we have a wide array of potential tools, supports, resources, and strategies to support learners on a personal learning path.

We also know more about how students learn than we did 30 years ago. We have more strategies for engaging and supporting them and we are learning more every day. We no longer need to ask, “Can personalized learning work?” Rather, we need to ask how we will make it work at scale.

## ACTIVITY

### Most Powerful Learning Experience

**Time:** 10+ minutes

**Type:** Reflective

**Who:** Implementation team

**Difficulty:** 2 out of 5

**This gets you:** Thinking about what’s important to you and your staff as learners and what the implications are for selecting common themes when designing new experiences for younger learners.

**Keep in mind:** This is a great activity to start a team meeting!

Ask participants to reflect on their most powerful K–12 learning experiences and answer the following questions:

- What was notable about the teacher?
- What was notable about the work?
- What was notable about the learning?
- How were you different in that situation compared to most days?

Allow the group time to reflect and discuss in pairs. Invite individual participants to share. Listen for elements such as clarity of recall, the effect of the experience on participants' lives, the emotional content of their recollection, and the power of the connection that participants made with both the learning and teachers involved. Facilitate a conversation around these elements and discuss how the experiences we offer students every day can have a lifelong effect, regardless of whether we know it or not. How can we create the conditions for such learning experiences?

## Reflection Questions

1. How can the assumptions we make prevent us from seeing opportunities that may be in front of us? Which of the assumptions discussed in this chapter have led you to question your thinking and practice?
2. Do you hold certain assumptions about learning that you need to examine and perhaps change to allow you and your school to improve?
3. How do you coach your staff to help learners make connections and see their learning as meaningful, purposeful, and useful?

4. To what extent and where are learner-based goal setting, action planning, progress monitoring, and demonstrations of achievement present in your school? How visible are these processes to learners?

## **Actions You Can Take**

1. Use the five-lever framework to analyze an initiative or reform attempt you tried recently. What levers were involved and what potential did they hold to deliver the outcome you intended? Now think about redesigning the learning ecosystem of your school. Which levers will you engage first, and which ones can be left for deployment later in the process?
2. Review the assumptions discussed in this chapter and note those that are driving educational practices in your school. Share the list with colleagues who you think might be willing to consider a new approach to learning and teaching and discuss with them how current assumptions and associated practices might be serving learners poorly.
3. At the next staff meeting, ask educators to raise their hands if they have students in their classes who are capable of learning at a faster pace than they currently are. Then ask if they have learners who would benefit from learning at a slower pace. Ask teachers what they're doing to meet the needs of these learners. Conclude by asking if anyone would be interested in exploring ways to redesign the learning environment to allow more flexibility for learners without increasing the workload of educators.
4. Conduct an informal survey of students at your school about their experiences. Sample questions might include: How often do you find that the pace of learning is too fast or too slow in your classes? What do you think the school values most—good grades or good learning? How easily



and quickly can you get the support you need when you struggle to learn something? How often are you invited, encouraged, and supported to think and act for yourself rather than wait to be told what to do?

5. As you visit classes and listen in on lessons, ask yourself whether the purpose of learning is clear and compelling and what could be done to make it more so. Does the learning seem to have lasting value? Will it serve learners well 20 or more years from now? As you debrief lessons with staff, explore these questions and discuss how they might make a more compelling case for students to invest their attention and energy in learning.
6. If there are staff members in your school who already set personal learning goals with students, schedule time to visit with them. Probe what prompted them to take this approach, what benefits they've seen, and how they would improve their current practice if given the opportunity and adequate support. What aspects of their current practice will you want to reinforce and how might you coach them to improve? Consider how these practices might be expanded to benefit more learners in your school.



## Bibliography

- Ames, C. (1992). Classrooms: Goals, structures, and student motivation. *Journal of Educational Psychology, 84*(3), 261–271.
- Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Englewood Cliffs, NJ: Prentice Hall.
- Bandura, A. (1991, February). Human agency: The rhetoric and the reality. *American Psychologist, 46*(2), 157–162.
- Black, P., & Wiliam, D. (1998). Assessment and classroom learning. *Assessment in Education: Principles, Policy and Practice, 5*(1), 7–73.
- Bloom, B. (1984, June/July). The 2 sigma problem: The search for methods of group instruction as effective as one-to-one tutoring. *Educational Researcher, 13*(6), 4–16.
- Brandt, R. (1992, December/January). On outcome-based education: A conversation with Bill Spady. *Educational Leadership, 50*(4), 66–70.
- Bramante, F., & Colby, R. (2012). *Off the clock: Moving education from time to competency*. Thousand Oaks, CA: Corwin.
- Brewster, C., & Fager, J. (2000, October). *Increasing student engagement and motivation: From time-on-task to homework*. Portland, OR: Northwest Regional Educational Laboratory.
- Bryk, A., Gomez, L., Grunow, A., & Lemahieu, P. (2015, January/February). Breaking the cycle of failed school reforms. *Harvard Education Letter*.
- Center for Research on Educational Outcomes. (2009). *Multiple choice: Charter school performance in 16 states*. Stanford, CA: Stanford University.
- CESA #1 (2010). *Transforming public education: A regional call to action*. Pewaukee, WI: Author.
- Corbett, D., & Wilson, B. (1995). Make a difference with, not for, students: A plea to researchers and reformers. *Educational Researcher, 24*(5), 12–17.

- Darling-Hammond, L., Chung Wel, R., Andree, R., Richardson, N., & Orphanos, S. (2009). *Professional learning in the learning profession: A status report on teacher development in the United States and abroad*. Stanford, CA: National Staff Development Council and the School Redesign Network at Stanford University.
- Duckworth, A., Peterson, C., Matthew, M., & Kelly, D. (2007). Grit: Perseverance and passion for long-term goals. *Journal of Personality and Social Psychology*, 92(6), 1087–1101.
- Dweck, C. S. (2000). *Self-theories: Their role in motivation, personality, and development*. Philadelphia: Psychology Press.
- Dweck, C. S. (2006). *Mindset: The new psychology of success*. New York: Random House.
- Fischer-Tubbs, T. (2015, June 5). Personal communication.
- Fletcher, A. (2008, November). The Architecture of Ownership. *Educational Leadership*, 66(3).
- Frontier, T., & Rickabaugh, J. (2014). *Five levers to improve learning: How to prioritize for powerful results in your schools*. Alexandria, VA: ASCD.
- Fullan, M. (2011). *Choosing the wrong drivers for whole school reform*. Victoria, British Columbia: Centre for Strategic Education.
- Gallup. (2013). *Fourth annual Gallup student poll*. Washington, DC: Author.
- Graves, J. (2010, May). The academic impact of multi-track year-around school calendars: A response to school overcrowding. *Journal of Urban Economics*, 67(3), 378–391.
- Greenstone, G. (2010, January/February). The history of bloodletting. *British Columbia Medical Journal*, 52(1).
- Hall, T. E., Meyer, A., & Rose, D. H. (2012). *Universal design for learning in the classroom: Practical applications*. Guilford Press.
- Hanover Research. (2015). *Program evaluation—personalized learning—next generation learning*. Arlington, VA: Author.
- Hattie, J. (2009). *Visible learning: A synthesis of over 800 meta-analyses relating to achievement*. London: Routledge.
- Hattie, J. (2012). *Visible learning for teachers: Maximizing impact on learning*. London: Routledge.
- Illeris, K. (2004). *Three dimensions of learning: Contemporary learning theory in the tension field between the cognitive, the emotional and the social*. Malabar, FL: Krieger.
- Jensen, E. & Nickelsen, L. (2008). *Deeper learning: 7 powerful strategies for in-depth and longer-lasting learning*. Thousand Oaks, CA: Corwin.
- Kay, K., & Greenhill, V. (2012). *The leader's guide to 21st century education*. Upper Saddle River, NJ: Pearson.
- Keller, J. (2000, February). *How to integrate learner motivation planning into lesson planning: The ARCS model approach*. Paper presented at VII Seminario, Santiago, Cuba. Available: <http://mailer.fsu.edu/~jkeller/Articles/Keller%202000%20ARCS%20Lesson%20Planning.pdf>

- Kohn, A. (1993, September). Choices for children: Why and how to let students decide. *Phi Delta Kappan*. Available: <http://www.alfiekohn.org/teaching/cfc.htm>
- Kohn, A. (2010). How to create nonreaders: Reflections on motivation, learning, and sharing power. *English Journal*, 100(1).
- Kotter, J. (2007, January). Leading change: Why transformation efforts fail. *Harvard Business Review*.
- Loveless, T. (2012). *How well are American students learning?* Washington, DC: Brookings Institution.
- Lumsden, L. S. (1994). *Student motivation to learn*. Eugene, OR: ERIC Clearinghouse on Educational Management.
- Marzano, R. (2000, May). Instructional coherence: Changing the role of the teacher. *Educational Leadership*, 56(8), 16–21.
- Marzano, R. J. (2007). *The art and science of teaching: A comprehensive framework for effective instruction*. Alexandria, VA: ASCD.
- Mitra, D. (2008). Amplifying student voice. *Educational Leadership*, 66(3), 20–25.
- Mynard, J., & Sorflaten, R. (2002). *Independent learning in your classroom*. Paper presented at the TESOL Arabia 2002 conference.
- National Commission on Excellence in Education. (1983). *A nation at risk: The imperative for educational reform*. Washington, DC: Author.
- North Central Regional Educational Laboratory. (1995). *Critical issue: Working toward student self-direction and personal efficacy as educational goals*. Available: <http://www.ncrel.org/sdrs/areas/issues/students/learning/lr200.htm>
- Northwest Evaluation Association. (2014). *Using MAP data to support a personalized learning model*. Available: <https://www.nwea.org/page/3/?s=Case+Studies/resources/west-allis-west-milwaukee-school-district/>
- Ontario Ministry of Education. (2010). *Growing success: Assessment, evaluation and reporting in Ontario schools*. Toronto, Ontario: Author.
- Osberg, K. M. (1997). *Constructivism in practice: The case for meaning-making in the virtual world*. Unpublished doctoral dissertation. Seattle: University of Washington.
- Pahlke, E., Hyde, J. S. & Allison, C. M. (2014). The effects of single-sex compared with coeducational schooling on students' performance and attitudes: A meta-analysis. *Psychological Bulletin: American Psychological Association*, 140(4), 1042–1072.
- Payne, C. M. (2008). *So much reform, so little change: The persistence of failure in urban schools*. Cambridge, MA: Harvard Education Press.
- Petty, G. (2009). *Teaching today: A practical guide* (4th ed.). Cheltenham, UK: Nelson Thornes.
- Pewaukee School District. (2015). *Pewaukee School District data report*. Pewaukee, WI: Author.

- Pink, D. H. (2009). *Drive: The surprising truth about what motivates us*. New York: Riverhead Books.
- Radcliffe, D. (2008). A pedagogy-space technology (PST) framework for designing and evaluating learning spaces. *Next Generation Learning Spaces*, 11–16.
- Rajagopal, K. (2011). *Create success: Unlocking the potential of urban students*. Alexandria, VA: ASCD.
- Ravitch, D. (2010) *The death and life of the great American school system: How testing and choice are undermining education*. New York: Basic Books.
- Roemer, M. (2015, February 16). Personal communication.
- Schlechty, P.C. (2011). *Engaging students: The next level of working on the work*. San Francisco: Jossey-Bass.
- Schmoker, M., & Marzano, R. (1999, March). Realizing the promise of standards-based education. *Educational Leadership*, 56(17–21).
- Schunk, D. (1991). Self-efficacy and academic motivation. *Educational Psychologist*, 26(3/4), 207–231.
- Sinatra, G. (2000, April). *From passive to active to intentional: Changing conceptions of the learner*. Paper presented at the American Educational Research Association, New Orleans, Louisiana.
- Spady, W., & Marshall, K. (1991). Beyond traditional outcome-based education. *Educational Leadership*, 49, 67–72.
- Springer, M. G., Ballou, D., Hamilton, L., Le, V., Lockwood, J. R., McCaffrey, D., Pepper, M., & Stecher, B. M. (2012). *Final report: experimental evidence from the project on incentives in teaching (POINT)*. Nashville, TN: National Center on Performance Incentives, Vanderbilt University Peabody College.
- State of Victoria, Department of Education and Training. (2009). *Making the most of flexible learning spaces*. (2011, January). Melbourne, Australia: Author.
- Stefanou, C. R., Perencevich, K. C., DiCintio, M., & Turner, J. C. (2004). Supporting autonomy in the classroom: Ways teachers encourage student decision making and ownership. *Educational Psychologist*, 39(2), 97–110.
- Tamim, R. M., Bernard, R. M., Barokhovski, E., Abrami, P. C., & Schmid, R. F. (2011, March). What forty years of research says about the impact of technology on learning: A second order meta-analysis and validation study. *Review of Educational Research*, 81(1), 4–28.
- U.S. Department of Education. (2010). *National education technology plan*. Washington, DC: Author.
- Wenger, E., McDermott, R., & Snyder, W. (2002). *Cultivating communities of practice: A guide to managing knowledge*. Cambridge, MA: Harvard Business School.
- Williams, M., Moyer, J., & Jenkins, S. (2014). *District conditions for scale: A practical guide to scaling personalized learning*. New York: KnowledgeWorks.

- Wilson, S., & Peterson, P. (2006, July). *Theories of learning and teaching: What do they mean for educators?* Washington, DC: National Education Association.
- Witte, J. R., Carlson, D., Cowen, J. M., Fleming, D. J., & Wolf, P. J. (2011). *MPCP longitudinal educational growth study: Fourth-year report*. Fayetteville: University of Arkansas.
- Wolf, M. A. (2010). *Innovate to educate: System redesign for personalized learning*. Washington, DC: Software and Information Industry Association.
- Worthy, J. (2010). Only the names have been changed: Ability grouping revisited. *Urban Review*, 42(5), 271–295.
- Zepeda, S., & Mayers, R. (2006). An analysis of research on block scheduling. *Review of Educational Research*, 76(1), 278–391.
- Zimmerman, B. J., Bandura, A., & Martinez-Pons, M. (1992). Self-motivation for academic attainment: The role of self-efficacy beliefs and personal goal setting. *American Educational Research Journal*, 29(3), 663–676.



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