Brain Rules

By Dr. John Medina, molecular biologist

What's a Brain Rule? It's one thing scientists know for sure about how our brains work. Dr. John Medina investigates 12 rules and how they apply to our daily lives, especially at work and school. Here are 3 of them.

Rule #4: We don't pay attention to boring things.

- What we pay attention to is profoundly influenced by memory. Our previous experience predicts where we should pay attention. Culture matters too. Whether in school or in business, these differences can greatly affect how an audience perceives a given presentation.

- We pay attention to things like emotions, threats and sex. Regardless of who you are, the brain pays a great deal of attention to these questions: Can I eat it? Will it eat me? Can I mate with it? Will it mate with me? Have I seen it before?

- The brain is not capable of multi-tasking. We can talk and breathe, but when it comes to higher level tasks, we just can't do it.

- Driving while talking on a cell phone is like driving drunk. The brain is a sequential processor and large fractions of a second are consumed every time the brain switches tasks. This is why cell-phone talkers are a half-second slower to hit the brakes and get in more wrecks.

- Workplaces and schools actually encourage this type of multi-tasking. Walk into any office and you'll see people sending e-mail, answering their phones, Instant Messaging, and on MySpace—all at the same time. Research shows your error rate goes up 50% and it takes you twice as long to do things.

- When you're always online you're always distracted. So the always online organization is the always unproductive organization.

- The 10-minute rule: Audience attention drops precipitously at about 10-minute intervals. You must do something emotionally relevant at least every 10 minutes to regain attention.

- The brain pays attention to patterns. Remembering things we've seen before (like, say, quicksand) is a useful evolutionary trait. Chunk content to emphasize the patterns.

Rule #10: Vision trumps all other senses.

- We are incredible at remembering pictures. Hear a piece of information, and three days later you'll remember 10% of it. Add a picture and you'll remember 65%.

- Pictures beat text as well, in part because reading is so inefficient for us. Our brain sees words as lots of tiny pictures, and we have to identify certain features in the letters to be able to read them. That takes time.

- Why is vision such a big deal to us? Perhaps because it's how we've always apprehended major threats, food supplies and reproductive opportunity.

- Toss your PowerPoint presentations. It's text-based (nearly 40 words per slide), with six hierarchical levels of chapters and subheads—all words. Professionals everywhere need to know about the incredible inefficiency of text-based information and the incredible effects of images. Burn your current PowerPoint presentations and make new ones.

Rule #12: We are powerful and natural explorers.

- The desire to explore never leaves us despite the classrooms and cubicles we are stuffed into. Babies are the model of how we learn—not by passive reaction to the environment but by active testing through observation, hypothesis, experiment, and conclusion. Babies methodically do experiments on objects, for example, to see what they will do.

- The method we use to explore our world? Hypothesis testing. You did it last time your lost your keys. You hypothesized that you'd left them on your dresser, you tested the hypothesis by checking there, and you came to a conclusion. Clever!

- Google takes to heart the power of exploration. For 20 percent of their time, employees may go where their mind asks them to go. The proof is in the bottom line: fully 50 percent of new products, including Gmail and Google News, came from "20 percent time."

Source: Brain Rules website: http://brainrules.net/

Drive: the Surprising Truth about What Motivates Us

by Daniel Pink

Myth: If you reward something, you get more of the behavior you want. If you punish something, you get less of the behavior you don't want.

Studies at places like MIT, University of Chicago and Carnegie Mellon have shown that the typical motivation schemes within organizations do not work. The idea of offering incrementally greater rewards for increasingly better performance may work to incentivize mechanical skills and simple straightforward tasks, but once the task calls for even rudimentary cognitive skill, *a larger reward leads to poorer performance*. This finding has been replicated over and over, by psychologists, sociologists, economists, in other countries, across different industries and different economies.

An incentive designed to clarify thinking and sharpen creativity ended up clouding thinking and dulling creativity. Why? Rewards, by their very nature, narrow our focus.

True Motivation

There are three key ingredients of genuine motivation— *autonomy*, *mastery*, and *purpose*. Neglecting these limits what each of us can achieve.

Autonomy: the desire to be self-directed

Traditional management is about compliance. For true engagement on the part of employees, self-direction is better. It requires resisting the temptation to control people — and instead doing everything we can to reawaken their deep-seated sense of autonomy.

- Example: Once every three months, Atlassian, an Australian software company, tells its developers to work on anything they want for the next 24 hours. The only ask is to show results to the company at the end of the allotted time. There is often beer, cake, and fun involved as people work together. This one day of undiluted autonomy has led to a whole array of new product ideas and fixes to existing software problems. Instead of offering a big "innovation bonus" (I'll give you $2500 if you do something cool and amazing), they're saying, "let us just get our your way" so you can do what you're already inclined to do on your own.

Mastery: urge to get better at something

People pursue hobbies to gain mastery; they play musical instruments, excel at sports, build things not necessarily for fame or fortune—why? Because it's fun and it's satisfying to get better at something. Positive feedback can have an enhancing effect on intrinsic motivation.

- Example: Linux was developed by hundreds of people (many who are technically sophisticated, highly skilled people who have paying jobs) volunteering thousands of personal hours to create a product that they give away free. Linux is now powering 1 out of 4 corporate servers in the Fortune 500 companies; Apache is powering the majority of web servers. To an economist, it sounds like a crazy business model but it worked.

Purpose: making a contribution to something

Related to mastery, people want to do things that make a difference. People are natural "purpose maximizers, not only profit maximizers." When the profit motive becomes unhitched from the purpose motive, service goes down the drain and products become crappy. Profit-driven companies become uninspiring places to work and people do not do great things. The companies that flourish are animated by purpose.

- Example: the founder of Skype wanted to be a bit disruptive in the cause of making the world a better place by eliminating phone bills and connecting people around the globe.

The big takeaway here is that if we start treating people like people and not assuming that they're simply like horses responding to carrots and sticks, if we can get past this ideology and look at the science, we can actually build organizations and work lives that make us better off. We should focus our efforts on creating environments for our innate psychological needs to flourish.

We also have the promise of making our world just a little bit better.

This summary of Drive was compiled from the following resources:
- Dan Pink's TED talk: http://www.ted.com/talks/dan_pink_on_motivation.html
- RSA Animate version: http://www.youtube.com/watch?v=u6XAPnuFjJc&feature=player_embedded
- 19 Top Ideas for Education in Drive by Daniel Pink: http://connectedprincipals.com/archives/2202

Changing the Tone through Motivation

By Brian Remer

My daughter, Tilden, is learning to play the clarinet and our house has been filled with squawks, squeaks, and groans for several months now. But, all that noise is not coming from her musical instrument. It's coming from my daughter! You see, she doesn't want to practice. She squawks and squeaks about what she would rather do and my wife and I groan about how we are going to motivate her to put in a little effort.

There are three factors influencing her behavior.
1. Competence: It takes a considerable amount of practice to even begin to feel competent playing the clarinet. Who would want to do something they don't do well?
2. Autonomy: The idea to practice is never hers. There is always someone else telling her what, when, and for how long. Other people, her parents, are in control.
3. Relatedness: Usually she practices in her room, but who wants to sit all by themselves doing something they didn't choose and can't do well?

Psychologist Richard Ryan has incorporated these three factors—competence, autonomy, and relatedness— into a theory about motivation. Through his research, Ryan found that when people felt competent at the task, when they were able to make choices about it, and when they had a strong connection to another person, their intrinsic, internal motivation increased. In short, the more competence, autonomy, and relatedness the person felt, the more likely they were to do the activity on their own. Rewards and punishments don't even need to enter the picture.

Experimenting with Ryan's ideas has changed the tone—both literally and figuratively—of Tilden's clarinet practice. As parents we now make a conscious effort to tolerate the squawks and give positive feedback in order to improve her sense of confidence and competence. We create opportunities for her to make choices and experience some autonomy. For example, she might choose to practice twenty minutes today or ten minutes today and ten minutes tomorrow. And we capitalize on the power of relatedness. One of us might sit next to Tilden just listening to the music as she makes it. The result has been much more enjoyable for everyone.

The implications of Ryan's research on motivation are profound. Whether we are parenting a child, supervising staff, or leading a cross-functional team, we can have a bigger effect on the motivation of others by building competence, offering autonomy, and supporting relatedness. You too can turn squawks and squeaks into beautiful music by focusing on motivation.

Just consider:

- What are the ways you can build competence in the people you supervise or collaborate with?
- How can you encourage those people to experience a sense of autonomy while accomplishing the many things that have to get done?
- How can you do all of this in a way that makes your relationship with them, and their sense of relatedness to each other, stronger?

The Five Moments of Need

By Connie Malamed

Are you able to convince clients, stakeholders and SMEs to cut back on the massive content they load into a course? Do you need to decide whether to include performance support rather than what seems like an entire curriculum?

You may find your answer in the Five Moments of Need model developed by Bob Mosher and Conrad Gottfredson. They have distilled our workplace requirements for knowledge and information into five special moments. The first two in the list typically benefit from formal, structured learning, particularly for novices. The final three typically benefit from performance support, including just-in-time information, micro-instruction, conversation and other less formal learning approaches.

When I first came across this approach, a light bulb turned on. This was exactly what I'd been looking for to cut through the content tug of war I often play. I've tried convincing course stakeholders that less content provides more learning. I've explained the limitations of working memory and cognitive load. All of this has brought limited success. But nearly everyone can relate to a moment of need.

The Needs

The five needs occur:
1. When learning for the first time
2. When wanting to learn more
3. When trying to remember and/or apply
4. When things change (I would add, when things change in a minor way.)
5. When something goes wrong

Fitting into Your World

So how can you fit this model into your world? After you've done some research and analysis to understand your audience and what they need to perform, you should be able to identify which tasks and content correspond to a specific moment of need. During course design, this should allow you to streamline the content. Include the skills and knowledge that involve learning for the first time or learning more (needs #1 and #2). And support tasks and knowledge that correspond to needs #3, #4, and #5 through other approaches.

For example, in an orientation course for new employees, you may want to present an explanation of the company's complex investment and health benefit options in a formal course. An audience of new employees would be learning this for the first time (need #1). On the other hand, it might be difficult to remember this complex information when it's time to invest or choose health options, so a simple support web page through the Human Resources Department would be appropriate for fulfilling the need to remember (need #3).

Using for Push Back

Once you get the hang of it, it's quite easy to use the Five Moments of Need to steer SMEs and stakeholders in the right direction. For example, I recently attended a meeting where I distributed the Five Moments of Need list to each person present. As we discussed the various elements of the course content, I would simply ask the group what type of need the content fulfilled. If it turned out to be a need from #3 to #5, we agreed to present the content in a performance support context. In this particular organization, the easiest approach was to distribute support information in .pdf documents as attachments in an eLearning course.

Lining Up Needs and Approach
There are many approaches for providing instruction or performance support that correspond to each moment of need. Here are some suggestions below for starters.

Moment of Need	Possible Approaches
When learning for the first time	eLearning, blended learning, virtual classroom, self-study
When wanting to learn more	eLearning, blended learning, virtual classroom, self-study, mobile learning
When trying to remember and/or apply	Job aid (online or offline), manual, mobile performance support
When things change	Job aid (online or offline), documentation, mobile performance support, microblogging (Twitter, Yammer), wikis, IM
When something goes wrong	Help Desk, FAQ, mobile performance support, forums, microblogging (Twitter, Yammer), wikis, IM

Source: Working With The Five Moments Of Need,
http://theelearningcoach.com/elearning_design/working-with-the-five-moments-of-need/

Teaching Adults Anything

By Sharon Bowman

- Adults remember what *they* write better than what the instructor writes.
- You will remember what you write better than what you read.
- Connections are the key to adult learning.

Step #1: Get learners connected.
At the start of the process, make these important connections:
1. To prior learning
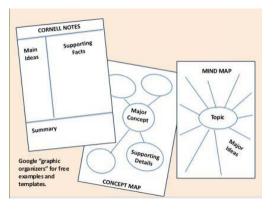2. To each individual's learning goal
3. To each other

Connection exercises:
- Quick-write: learners write a sentence describing what you want to learn and then tell your table group what you wrote.
- Pair-share: each person introduces his/herself to one other person and tells him or her three facts they already know about the topic.
- Mark-ups: learners read the list of learning objectives and circle the one most important to them; they tell the table group which one was circled and why.

Put the welcome, introductions, announcements, learning objectives, and anything else AFTER the connection activity.

Step #2: Content—chunk, show and tell

- Provide content in small "chunks" of 10-20 minute segments. Insert quick 1-minute activities between longer content segments.
- Use visual aids and tell stories to teach content
    - Visual aids include photos, props, icons, cartoons, videos, graphics, demonstrations, and skits.
    - Telling includes stories, case studies, analogies, and metaphors.
- Provide graphic organizers for learners to take notes.
- Follow each content chunk with a 1-minute review.

Review exercises:
- Each person writes and then shares a one-sentence summary of the main ideas presented so far.
- Learners pair up and ask each other a content-related question; discuss their answers.
- Each person writes a content-related question on an index card, then passes the card to another learner who writes the answer for a later group discussion.

Step #3: Let them do it.
Adult learners need to actively review content or actively practice skills at least six times and in six different ways (6X by 6W).

6X6W exercises:
- Pair teach-back: learners divide into pairs or triads and take turns explaining concepts or demonstrating skills they've learned in the class.
- Table teach-back: each table group chooses a concept or skill to demonstrate or explain to the rest of the class.
- Class teach-back: the class divides in half. Each half teaches or demonstrates a concept or skill to the other half.
- Skill skits: groups of learners create and act out a skit that demonstrates a concept or skill.
- Job-shadowing is also an effective way to practice new learning.

Step #4: Create an action plan.
An action plan is a commitment by the learner to use what has been learned or practiced. It allows learners time to evaluate what they've learned and think about how it applies to their work.

Concluding exercises:
- In pairs or triads, learners walk around the room discussing the most important concepts they learned and what they plan to do with this knowledge back on the job.
- Table groups write and perform short raps, poems or songs as content summaries.

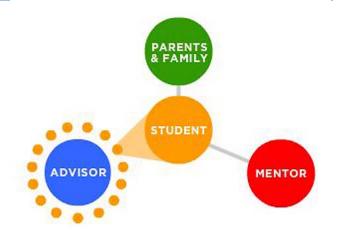Source: Teach it Quick and Make it Stick, http://www.bowperson.com/articles.htm

Learning to be Creative

By Sir Ken Robinson

Education has 3 core purposes:
- Personal: to develop students' individual talents and sensibilities.
- Cultural: to deepen their understanding of the world around them.
- Economic: to enable them to earn a living and to be economically productive.

Being a teacher is a creative profession. One of the reasons that schools fail and systems stumble is that teachers as well as students become disengaged. There many good teachers whose creative instincts are curbed by standardized education and whose effectiveness is diminished as a result. Creativity is possible in every discipline and should be promoted throughout the whole of education. There are three related tasks in teaching for creativity: encouraging, identifying and fostering. The following examples employ these principles in transforming education.

The School of One

One example of a radical innovation in schools is a pilot program in New York City known as the School of One. The school has developed a suite of computer programs, which include:
- *Student profiles* based on detailed assessments and input from parents and teachers;
- A *lesson bank* of materials from many providers in various formats suited to different learning styles;
- A *learning algorithm*, which generates unique daily schedules and resources for each student and for each teacher; they include group work, collaborative projects and individual study time.

The teachers are freed from most of the routine tasks of administration and can focus on providing quality support and instruction to the students. According to their own judgment and discretion, the teachers can override the schedules for themselves or particular students. The scheme is in its pilot phase but the School of One promises other innovation using IT; contributing, as the school intriguingly puts it, to the "mass customization of student learning."

Big Picture Schools

The founders of Big Picture Learning wanted to create schools in which students would take responsibility for their own learning and would spend considerable time doing real work in the community with volunteer mentors.

Big Picture schools believe that all students should have the opportunity to learn in a place where people know each other well and treat each other with respect. Schools must be small enough so every student has genuine relationships with adults and other students and no one falls through the cracks. The culture of Big Picture schools is an integral part of their success. Students are encouraged to be

leaders and school leaders are encouraged to be visionaries. "Our schools strive to create a respectful, diverse, creative, exciting, and reflective culture."

The first school opened in South Providence (RI) in 1996 with a freshman class of 50 students, mostly at-risk African American and Latino students who did not fit in conventional schools. That class graduated in 2000 with a 96% graduation rate: 98% of graduates were admitted to postsecondary institutions. By 2008, with support from the Bill and Melinda Gates Foundation, over 60 Big Picture schools were operating in fourteen states. All of these schools embody the fundamental philosophy—educating one student at a time in a community.

Big Picture Learning: http://www.bigpicture.org/schools/

The Blue School
The Blue Man Group is a world-renowned creative team who produces unique performances that combine music, elaborate improvised instruments, comedy and multimedia theatrics. Since it was founded in 1988, it has grown into an international creative phenomenon, travelling all over the world. When they had their own children, they and their wives faced the dilemma of where and how to educate them. They decided to start their own school. "We wanted to create a school that emphasizes creativity as much as anything else, that teaches kids a special way to treat one another through social and emotional learning."

The educational model of the Blue School consists of two main elements: the core curriculum, which represents the basic disciplines of the program: language arts, science fine arts, lively arts, social studies, technology and media literacy, math, physical arts and fitness. The second element of the program is the school's values: creativity and expression, family and community connection, playfulness, exuberance and fun, self-awareness and well-being, global and environmental explorations, multiple perspectives and differentiated learning styles.

Each of the values relates in some way to the idea of connections, whether it be the connection to a community, to one's emotions, to one's artistic voice, to one's body, to the world, to one's interests, or to one's sense of joy and wonder. "We're creating a launch pad where kids are the rockets and we're just trying to find the fuse."

Conclusion
Whether in the public or the independent sector, in schools or at home, being creative in providing education and promoting creativity are not dispensable luxuries. They are essential to enable us all to make lives that are worth living and to sustain a world that is worth living in. We cannot meet the challenges of the 21st century with the educational ideologies of the nineteenth. We need a new Renaissance that values different modes of intelligence and that cultivates creative relationships between disciplines and between education, commerce and the wider community. Transforming education is not easy but the price of failure is more than we can afford, while the benefits of success are more than we can imagine.

Excepted from Out of Our Minds, by Sir Ken Robinson, 2011

How the Flipped Classroom Is Radically Transforming Learning

by Jonathan Bergmann, Dan Spencer, Deb Wolf, and Aaron Sams

What it is

The traditional definition of a flipped class is:
- Videos take the place of direct instruction;
- Students get individual time in class to work with their teacher on key learning activities.

It is called the flipped class because what used to be classwork (the "lecture") is done at home via teacher-created videos, and what used to be homework (assigned problems) is now done in class.

The Flipped Classroom is:
- A means to INCREASE interaction and personalized contact time between students and teachers.
- An environment where students take responsibility for their own learning.
- A classroom where the teacher is not the "sage on the stage," but the "guide on the side."
- A blending of direct instruction with constructivist learning.
- A classroom where students who are absent due to illness or extra-curricular activities such as athletics or field-trips, don't get left behind.
- A class where content is permanently archived for review or remediation.
- A class where all students are engaged in their learning.
- A place where all students can get a personalized education.

Flipping Increases Student Interaction

Flipping the classroom has transformed our teaching practice. We no longer stand in front of our students and talk at them for thirty to sixty minutes at a time. This radical change has allowed us to take on a different role with our students. One of the greatest benefits of flipping is that overall interaction increases: Teacher to student and student to student. Since the role of the teacher has changed from presenter of content to learning coach, we spend our time talking to kids and observing how they interact with each other. We are answering questions, working with small groups, and guiding the learning of each student individually.

When students are working on an assignment and we notice a group of students who are struggling with the same thing, we automatically organize the students into a tutorial group. We often conduct mini-lectures with groups of students who are struggling with the same content. The beauty of these mini-lectures is we are delivering "just in time" instruction when the students are ready for learning. We also notice the students developing their own collaborative groups. Students are helping each other learn

instead of relying on the teacher as the sole disseminator of knowledge. It truly is magical to observe. We are often in awe of how well our students work together and learn from each other.

Some might ask how we developed a culture of learning. We think the key is for students to identify learning as their goal, instead of striving for the completion of assignments. We have purposely tried to make our classes places where students carry out meaningful activities instead of completing busy work. When we respect our students in this way, they usually respond. They begin to realize, and for some it takes time, that we are here to guide them in their learning instead of being the authoritative pedagogue. Our goal is for them to be the best learner possible, and to truly understand the content in our classes. When our students grasp the concept that we are on their side, they respond by doing their best.

Begin with the end in mind

A good teacher always knows where they're headed, and that is never more important than with the flipped classroom and for Mastery Learning. Ask yourself exactly what do you want your students to know and be able to do. What are the essential objectives that your students MUST master? What will "mastery" of that objective look like? It may be that some of these decisions are already made for you. But, you absolutely must begin by first deciding what the end product looks like.

If content is delivered outside of class time, it is up to the teacher to provide the students with opportunities in class to *place the content they learned into context*. Many teachers struggle with the "extra" class time that is created by removing direct instruction from the classroom, and do not know exactly what to do with their students. These in-class "activities" (for lack of a better term) must:
1. help support the student understanding of the stated learning objectives;
2. be designed to help students process what they have learned and place the learning into the context of the world in which they live;
3. be engaging to the students, yet flexible enough to allow students the ability to process and produce in a way that is meaningful to them.

Possible in-class work could include:
- student created content
- independent problem solving
- inquiry-based activities
- Project Based Learning

Compiled from the following articles:
- How The Flipped Classroom is Radically Transforming Learning: http://www.thedailyriff.com/articles/how-the-flipped-classroom-is-radically-transforming-learning-536.php
- Are You Ready to Flip?: http://www.thedailyriff.com/articles/are-you-ready-to-flip-691.php
- The Flipped Class: What it is and What it is Not: http://www.thedailyriff.com/articles/the-flipped-class-conversation-689.php

Khan Academy: The hype and the reality

Background of Khan Academy

Billed as "a free world-class education for anyone anywhere," the Khan Academy is a not-for-profit offering a collection of short instructional videos on math, science and a growing selection of other subjects. The Khan Academy's more than 3300 micro-lectures are available completely free of charge.

In 2004, the founder of the organization, Salman Khan, began tutoring his cousin Nadia in math remotely by creating short video tutorials for her. As his success and popularity increased, he quit his hedge-fund manager job in 2009 and concentrated full-time on building the academy and creating videos. The project now has significant backing from the Bill & Melinda Gates Foundation and Google.

The Hype and the Reality

By Karim Kai Ani

In a new profile in Time magazine, Sal Khan, founder of the popular Khan Academy, explains how he prepares for each of his video lessons. He doesn't use a script. In fact, he admits, "I don't know what I'm going to say half the time." And yet in the past year Sal Khan has been hailed as the "world's teacher;" the "Messiah of Math;" and the savior for everything that ails public education.

It's not Sal's fault. He didn't set out to become one of the biggest celebrities in education but simply to help his cousins with their math homework. But Ann Doerr, wife of venture capitalist John Doerr, picked up on it. Then Bill Gates. Then the San Jose Mercury, 60 Minutes, the New York Times ... and all of a sudden Khan Academy, a collection of low-res videos offering step-by-step instructions for how to solve math problems, was being hailed as the Next Big Thing in education.

Sal Khan has done something remarkable in creating such a vast and varied library, and he deserves to be recognized. His commitment to making the site free is a rare and selfless act, and he deserves to be praised. Sal Khan is a good guy with a good mission. What he's not, though, is a good teacher. Effective teaching is incredibly complex. It requires planning. It requires reflection. And it certainly requires more than just "two minutes of research on Google," which is how Khan describes his own pre-lesson routine.

Because the truth is that there's nothing revolutionary about Khan Academy at all. In fact, Khan's style of instruction is identical to what students have seen for generations: a *do this then do this* approach to teaching that presents mathematics as a meaningless series of steps. Khan himself says that "math is not just random things to memorize and regurgitate," yet that's exactly how his videos present it.

The real problem with Khan Academy is not the low-quality videos or the absence of any pedagogical intentionality. It's just one resource among many, after all. Rather, the danger is that we believe the

promise of silver bullets – of simple solutions to complex problems – and in so doing become deaf to what really needs to be done.
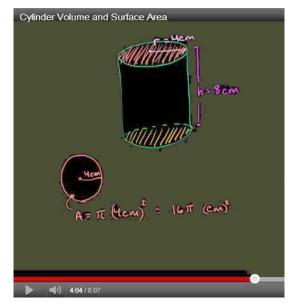
As Arne Duncan said, we need to invest in professional development, and provide teachers with the support and resources they need to be successful. We need to give them time to collaborate, and create relevant content that engages students and develops not just rote skills but also conceptual understanding.

We have to recognize the good, and then cultivate it. Before we can do that, though, we have to agree on what "good" is. *I don't know what I'm going to say half the time* isn't good enough, and we have to stop pretending that it is.

We face very real challenges in K-12 education today, and they will not be solved with just a Wacom tablet and a YouTube account. Instead, they'll be solved by teachers who understand their content; who understand how children learn; who walk into the classroom every day and think, "*I know exactly what I'm going to say, because that's what teaching means.*"

Khan's Response

We here at the Khan Academy appreciate a public discourse on education and really encourage as much feedback as possible. We believe that we are in the early days of what we are and feedback will only make that better. I agree with you that no organization should be upheld as a magic bullet for education woes. We have never said that we are a cure-all and think we have a lot to do just to fulfill our potential as a valuable tool for students and teachers. Unfortunately, some of the headlines on articles are more grandiose, but we have no say in this.

In your previous post, you talk about the value of experiential learning versus lecture-based. We agree 100% with you; that is what KA is about too—allowing classrooms to be more interactive and experiential. See this video: http://www.khanacademy.org/talks-and-interviews/v/ideal-math-and-science-class-time.

Sources:
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- Khan Academy, http://www.khanacademy.org/
- Khan Responds to a Critic, http://www.washingtonpost.com/blogs/answer-sheet/post/sal-khan-responds-to-critic/2012/07/25/gJQA83rW9W_blog.html

Learner-Centered Teaching

By Terry Doyle, Ferris State University

"Although it may irritate the teacher, one of the most intelligent questions a student can ask is, 'Why do we have to do this?'"—Robert Sylwester

The Rationale for Learner-Centered Teaching

New discoveries about how the human brain learns and the subsequent recommendations for how to teach in harmony with these discoveries have guided the learner-centered approach to teaching. We know from neuroscience research that the dendrites of our brain cells only grow when the brain is actively engaged and the neuron-networks formed in our brains only stay connected when they are used repeatedly (Ratey, 2002, p. 19). We want students to do more firsthand learning, group learning, practicing, reflecting, presenting and teaching of others, because all of these learning activities require active learner engagement.

We put students into small groups not only to promote a deeper level of learning but because learning to talk with or listen to others is, perhaps, the single most important skill needed to be successful in any career field. A rationale for asking students to make presentations before the whole class is that learning to speak in front of others is crucial to career success. Students are being asked to take on more responsibility for their own learning because they will be responsible for it the rest of their lives. If we don't prepare them to be lifelong learners, capable of independent, self-motivated learning, then we have done less than a satisfactory job with their education.

Why We Love to Lecture

There are many tried-and-true reasons for resorting to traditional lecture format:
- Lecture is expedient.
- We worked very hard to learn the subject(s).
- We know our students don't know most of what we have to tell them.
- We went into teaching to help students learn our subject areas.
- We feel powerful when sharing our knowledge—we like to show off.
- We remain in control of the learning process

Then, what are the drawbacks?
- Lecture is often uni-sensory which makes it a much less effective way to learn than many other learning approaches.
- Requires extended attention for the learner.
- Students' brains will begin to habituate the sound of our voice especially if it is unmodulated.
- Lecture doesn't cause the learners to do much work (except multitask).

Sharing Power with Students

We have been so conditioned by a teacher-centered approach that we must be the authority and control all of the aspects of the learning process that moving away from that idea makes many of us uncomfortable. It is this uncomfortableness that our students also feel when we ask them to take more control over their learning by making choices that increase their responsibilities for what and how they learn.

When we share power with our students by offering learning choices, the message is:
- we trust their judgment;
- we trust them to act in ways that are in their best interest;
- and we believe they will make decisions that are mature and reasonable

Trust is empowering and most students will rise to the occasion.

Four tenets of yielding power to learners:

1. Our students cannot improve their abilities to be more responsible for their learning without being given greater responsibility for it.
2. The more control our students take and the more choices we can offer them the greater their desire and willingness to engage in the learning.
3. When students make a choice, they also must learn to live with that choice. This is a very powerful life lesson.
4. When a student has some control over how they learn, they can also discover their strengths and weakness as a learner, a vital meta-cognitive skill they will use the rest of their life.

Facilitating Learning

The facilitator's job is to support everyone in doing his or her best thinking and practice. It involves supporting learning by providing an environment for engagement, initiating activities that get the full participation of learners, and cultivating shared responsibility for the learning between the teacher and the students. It is a learned skill.

Giving meaningful feedback to learners is one of the greatest skills of an effective facilitator of learning. Good feedback is the key to improved learning. Rather than being the sole domain of the teacher, the feedback process works best when both students and teachers are actively involved. Give feedback that focuses more on instruction rather than correction. The message is how to improve.
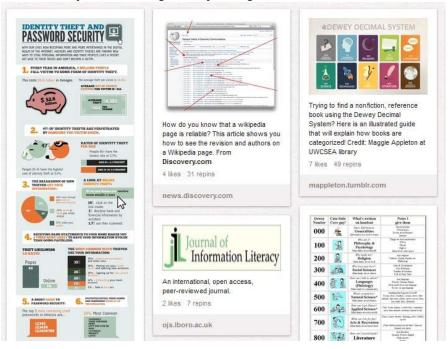

Compiled from the following sources:
- A Clear Rationale for Learner-Centered Teaching: http://learnercenteredteaching.wordpress.com/articles-and-books/the-learner-centered-classroom/
- How to Share Power with Students: http://www.scribd.com/doc/12701319/How-to-Share-Power-With-Students-to-Promote-Learning
- Learner-Centered Teaching Resources: http://learnercenteredteaching.wordpress.com/learner-centered-teaching-resources/

Very Pinteresting!
The hot social network is taking educators by storm

By Kate Messner

Everyone's buzzing about Pinterest, a new social media tool that connects people through the things they like—but for a growing number of users in classrooms and media centers, it's fast becoming a powerful resource where teachers and students share images, store lesson plans, read about current events, watch video clips, and collect their favorite apps. Pinterest bills itself as a virtual pinboard that helps users "organize and share all the beautiful things you find on the web."

Last January, Sarah Ludwig, a tech coordinator at Hamden Hall Country Day School outside New Haven, CT, started using Pinterest to create boards for her racially and economically diverse group of about 560 pre-K to 12th graders. "I use it to mostly promote books and reading," says Ludwig. "I pin favorite books, book trailers, new books, and upcoming books we plan to buy. I also have one board for research tools and technology resources, and one board that I call 'things to love' that just has cute or funny things that I think our students will like."

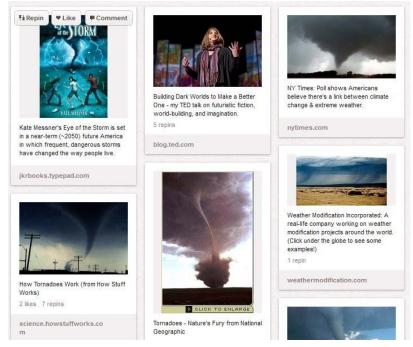*Screen shot of one small segment of Ludvig's Research Tools Pinboard:*

Her boards include an illustrated guide to the Dewey Decimal system, examples of how to use Glogster for an assignment, a tutorial on keyboard shortcuts, and a tip sheet on correct punctuation use. She also offers Book Trailers, Programming Ideas, and Booktalking: Spring 2012, so students can have quick access to book-talked titles.

High school media specialist Nikki Robertson, who started using Pinterest about seven months ago, is drawn to its visual appeal and uses it mainly as a way to curate resources for colleagues, parents, and the 1,400 students at Auburn High School, an International Baccalaureate/AP school in the university town of Auburn, AL. So far, the response has been positive.

Robertson gives her boards subject headings with links to math, science, social studies, and technology sites. There's even a "Copyright & Fair Use Resources" board, which she uses to help students find appropriate sites for research projects and images. Last February, Robertson introduced Pinterest to her colleagues at an informal professional development coffee gathering that she hosts at school each month. "Our teachers responded enthusiastically," says Robertson, explaining that her special education department has started pinning resources for parents and students to its own board.

Pinterest also creates a new dimension for online book study guides, offering classes and book groups access to discussion questions as well as images, videos, and websites related to books—all on a single board. My Pinterest board for Marty McGuire Digs Worms! (Scholastic, 2012), for instance, includes links to Earth Day activities, articles on composting, and directions for how to set up a worm composting bin, while the resource board for my weather thriller, Eye of the Storm (Walker, 2012), links to tornado videos, discussion questions, articles about weather manipulation, and features on climate change.

Section of the Eye of the Storm Pinterest study guide:

The Mobile Effect

By RJ Jacquez

Lesson 1: The Future is Mobile and Mobile Learning

When Apple announced the first iPhone and later the App Store in 2007, we actually began to see the potential and impact mobile would have on our generation. Since then mobile devices and Apps have only gotten better, faster and more innovative, and if there's something the App development community has shown us, time and time again, is that mobile offers new possibilities never possible on PCs. And this precisely how we should think about mLearning as compared to eLearning.

Lesson 2: We are just getting started with mobile and mLearning
We are just barely scratching the surface of what's to come. Amazing right? This is why I'm so excited about what the next few years will bring us and you should be too. This is why if you are an Instructional Designer and you haven't paid much attention to mLearning, you need to start now. Mobile is the future and we must to be part of it. For starters, you need to become a mobile user if you aren't already, you need to understand the mobile experience before you can start thinking about delivering the next generation of learning experiences through mobile devices.

Lesson 4: mLearning has vastly more potential than eLearning
I am fully convinced that when you couple the mobility and physicality of mobile, with all the other sensor superpowers inherent in mobile devices (i.e. digital compass, gyroscope, audio, dual cameras, bluetooth, proximity, etc), we will actually create better learning experiences on mobile as compared to what we have today through desktop eLearning. I recommend you hold weekly brainstorming sessions with your teams, where you start to re-imagine your learning on mobile devices.

Lesson 5: Thinking Mobile-first forces you to focus and prioritize
This is an important lesson for all of us transitioning from eLearning, where we have big desktop screens, over to designing for the smaller mobile screens, where screen real estate is at a premium. When you have a limited Canvas to work with, you prioritize and get down to what's really important for your learners and there's no room for all the extra fancy stuff you currently have in your eLearning courses today. I personally think that one of the biggest challenges we will have in this transition will be embracing simplicity**,** and letting go of all those bells and whistles we have in our eLearning courses today.

Lesson 7: Avoid thinking Desktop-first and Mobile-second
The problem I see with this backward way of thinking is that we will end up adopting HTML5 conversion tools, that promise to simply 'shrink' our eLearning in order to make it available on the iPad. This is simply wrong for so many reasons. Mobile offers an opportunity for all of us to think different, to hit the reset-button if you will.

Lesson 9: Don't wait until you're ready for mLearning, think mobile-first now
My point is that you shouldn't wait until your boss comes to you and says we need a mobile learning strategy, start thinking mobile-first now and become a mobile user yourself now. By doing so, your desktop eLearning will also improve.

Lesson 10: Embrace mobile constraints
And last but certainly not least, in my opinion, Mobile represents the biggest paradigm shift in the history of computing and as such, the transition is not going to be an easy one for any industry, including ours. There are lots of constraints we will need to deal with, but these shortcomings "force us to find new ways of developing learning experiences for mobile users, as well as to embrace new technologies, such as HTML5 and new principles, such as Responsive Web Design and thinking mobile-first." In other words, this change will get us out of our comfort zone and in a way force us to innovate, and that's a great thing.

In closing, here's one of my favorite quotes from Luke's book (Mobile First, Luke Wroblewski):

"Designing for mobile isn't just about embracing limitations, it's also about extending what you can do."

Excerpted from:
10 mLearning Lessons I Learned from Reading Mobile First by Luke Wroblewski [Book Review], http://rjacquez.com/10-mlearning-lessons-i-learned-from-reading-mobile-first-by-luke-wroblewski-book-review/

Designing M-Learning Solutions

by Mayra Aixa Villar

I have previously described mobile devices as multitasking tools that enable users to seamlessly collaborate and communicate with others, to consume and create content, and to research and manage information. These learning activities help the new generation of connected learners make sense of the world around them as they navigate and apply knowledge on the go.   As mobile devices provide a personal interactive experience with content in a new and appropriate context of use, it is important to consider the following matters when designing anytime, anywhere learning experiences.

Needs Analysis

Every well-planned learning initiative needs to start with a thorough needs analysis to clearly identify the learning needs that the solution must address. Why is m-learning the best way to approach a knowledge gap, skill training, or change of attitude within an organization? What pedagogical, logistic, and economic reasons indicate that m-learning will bring greater benefits? Can m-learning be part of an overall training strategy, and be deployed to enhance existing learning solutions? These are but a few of the initial questions that help us assess the target audience and available technologies. Habits, preferences, and background knowledge of the learners, as well as access to mobile devices and Internet connections (if necessary), are crucial aspects to clearly identify the purpose, the means, and the audience of m-learning solutions.

Pedagogical Issues

"Mobile learning is the first technology integrated fully into everyday activities to support lifelong [ongoing] learning" (Lavoie, 2006). Based on what Lavoie has to say, from a pedagogical perspective, m-learning allows for:

- urgency of learning
- instant knowledge acquisition
- mobility of learning setting
- interactivity of the learning processes
- "situatedness" of instructional activities
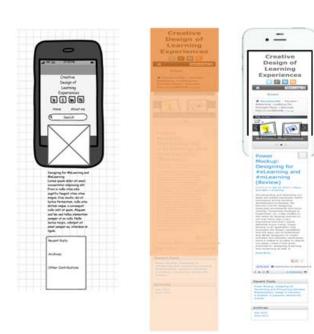- more meaningful integration of instructional content.

All these characteristics help define how mobile technologies can accompany learners and enhance learning processes by fully supporting:

- memory strategies, such as creating quick mental linkages
- cognitive strategies, such as receiving and sending messages, analyzing, and reasoning
- metacognitive strategies, such as planning and evaluating our own learning
- social strategies, such as asking and answering questions, collaborating, and fostering ideas with others.

Design Issues

In my experience, I have found that design aspects for mobile learning have been routinely neglected within our industry. Maybe some e-learning developers assume that they can apply the same principles and even "convert" old eLearning courses into m-learning through HTML5 publishing options. This is a mistake.

Mobile devices offer a much greater complexity and pose new challenges for designers. Natural user interfaces (UIs) or touchscreen interfaces enable new, spontaneous, and unconstrained interactions among users, content, and environment—by placing the right information at the users´ fingertips (literally). Such interaction requires a more sophisticated perspective on how to plan, select, organize, and deliver information.

Moreover, we need designs that are able to adapt to a variety of screen sizes through responsive layouts. We also need to design for each device´s different orientations. These are all essential considerations to bear in mind if our goal is to create more engaging, powerful, and seamless learning experiences through mobile devices.

In future posts, I will continue to explore the fundamental considerations for designing m-learning solutions by paying special attention to authoring tools and delivery methods, as well as tracking and security issues.

Source: Fundamental Considerations For Designing M-Learning Solutions (Part 1),
http://www.astd.org/Publications/Blogs/Learning-Technologies-Blog/2012/08/Fundamental-Considerations-for-Designing-M-Learning-Solutions-Part-1.aspx