



Photo by Deborah Coleman/Pixar

STEPPING OUTSIDE OF OUR COMFORT ZONE AND

Jumping into Pixar in a Box

By Peter DeWitt, EdD



Disney • Pixar

Comfort zones are places we stay in when we don't want to step outside our boxes. It's scary to veer away from what we know and try something new. In these continued days of mandates, heightened accountability, and evaluation scores, teachers and school leaders may hide behind their comfort zones, which seems counterintuitive given that we live in a time that provides us access to countless innovative resources. There has never been a more important time to show students that learning can be exciting, challenging, and relevant.

One subject that has been under increased scrutiny is math. Social media tools like Facebook have recently been the place where parents and teachers vent their frustration toward the new Common Core math. Too often those frustrated posts of homework examples come from a misunderstanding about how and why to do the new type of math. Maybe Common Core math is just a false attempt to change things around and flip education on its ear. But, is it possible that the new math students have to learn can lead to more creativity?

Let's face it, math has never really had the greatest marketing advisor. Can math really be creative? It's kind of an odd question because math is not often used in the same sentence as creativity. The old image of school doesn't always portray math as a creative art. Images that do come to mind are usually filled with students sitting at their desks writing their facts on a chalkboard, or the teacher standing at the front of the room calling out multiplication facts as a class filled with students answers in unison. Math is boring to some students and exciting to others. If schools change how it's taught, might it lead to more students loving math, or more students becoming disenfranchised with it?

Considering this is a publication for school administrators across New York, you're probably wondering what all of this has to do with school

leadership? Over the last few years there has been an increase in focus on Science, Technology, Engineering, and Math (STEM). Even news channels are promoting the focus on STEM like never before. With all of the promotion, and overpromotion, regarding STEM flying at school leaders, it's easy to get lost in the politics of it, as opposed to the importance of getting rid of the fear of math, engineering, and science. Technology, however, seems to be a no-brainer these days because students have more handheld devices than ever before. The real question regarding technology is whether students are consumers or content creators.

Along with the focus on STEM, schools have taken part in such things as an "hour of code" where students learn how to create their own code on computers. Additionally, more and more schools are jumping on board with the maker's movement, which means they dedicate a room and call it a "maker space" where students can design and create. Some schools have even gone as far as setting the ground rule that students can only create something that will make a positive contribution to society. Perhaps math can be creative after all?

Adding to the STEM focus, along with hour of code and the maker movement, is something that is meant to inspire students to see that math (and other subjects as well) can be a necessary creative tool, and it's called

"We had goals to create curriculum around the creative work that we do at Pixar, that matters to the Common Core and to what students have to learn in middle and high school. We wanted to make it relevant for them."

"Pixar in a Box" - a collaboration between Pixar Animation Studios and Khan Academy and sponsored by Disney.

Khan Academy is helping to bring Pixar in a Box into classrooms around the world. Khan Academy has long been a leader in offering online resources to provide "a free, world-class education for anyone, anywhere." They offer hundreds of thousands of videos that students, teachers, and parents can use at no cost.

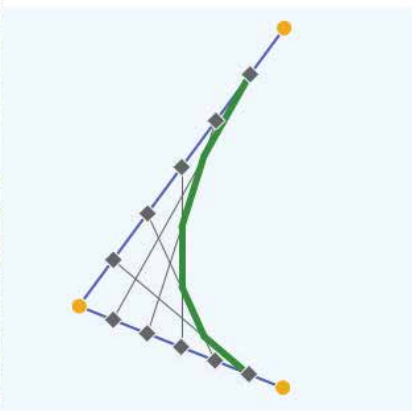
And let's face it, we all know Pixar. Whether we have children, or are children at heart, their movies have touched us in many ways with animated characters that seem to come alive on screen and in toy stores around the world. But, if more students understood the math behind all that Pixar animation, would they give math a fair shake and maybe, just maybe, get a little excited about it?

Pixar and Khan Academy hope so and are trying to help teachers bring education to the 21st century so that schools can truly engage more students, and focus on Science, Technology, Engineering, Art, and Math (STEAM), showing students that what they are learning in school has real-life application to some pretty cool stuff. When asked how the relationship began, Elyse Klaidman, director of Pixar University who led the initiative, said,

"For a number of years, my colleagues here were really thinking about whom we could work with. We had goals to create curriculum around the creative work that we do at Pixar, that matters to the Common Core and to what students have to learn in middle and high school. We

Environment Modeling

Explore how realistic *blades of grass* are modeled using *parabolic arcs*.



wanted to make it relevant for them. We knew what we wanted to do, and we knew where we had expertise and did not have expertise. And so we knew we wanted to work with someone in the educational space who had deep knowledge of working within the schools, with teachers, with Common Core, with curriculum, etc. And a mechanism to disseminate it online and for free."

Klaidman went on to say,

"We had looked at Khan quite a few years back, and I think they weren't yet in the place where they had any partnerships or that they had much access in the world. So we kind of looked at various options and then we came back to Khan – a former Pixar colleague had been working at Khan and we contacted him, and then it was right. The timing was right for them, the timing was right for us. They had progressed to a place that they really had the audience and the capability, the internal capability, to partner with us, and they were interested in creating a new kind of partnership different from anything they'd done before."

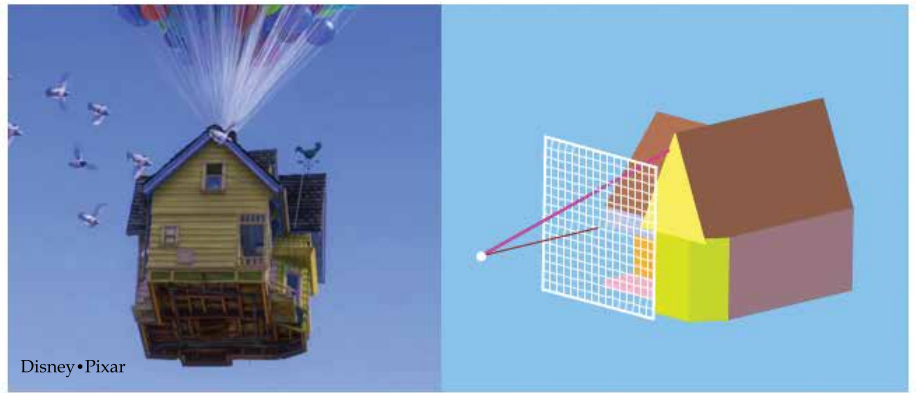
When it came to a starting point, Klaidman said,

"If we add the 'a' into STEM for art, then we were starting with STEAM. My experience with Pixar University is that I have had educators at every level contacting us asking if we could help them incorporate some of what we do into their curriculum; into their learning. They asked how we could help to support their creation of curriculum around animation and around what it takes to do what we do."

Those teachers understood the power of making math relevant using a product that students knew. Brit Cruise, content producer at Khan Academy, said Khan also had the mission to motivate students. "The place we

Rendering

Explore how *pixels* are painted by solving systems of *linear equations*.



aligned really was, how do we motivate kids to get excited about math," which was partly inspired by Walt Disney's focus on math and animation arts, as he used to do television programs on it, noted Cruise.

Cruise went on to say,

"So that the authentic connection to math is where this really started making sense. From the perspective of Khan Academy, there was a potential to create online modules which are appropriate for a really general audience, so anyone can come and dive in and learn."

Pixar in a Box is designed for students from fifth grade to high school, and a little beyond high school.

Cruise said,

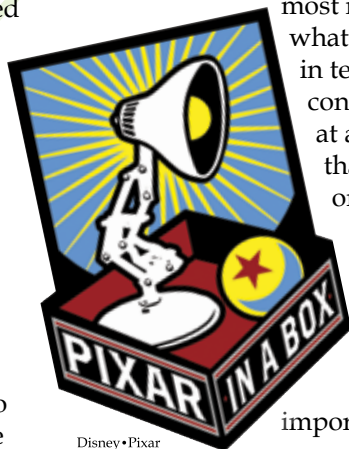
"From the outset here, our guiding principle was to ask what math are we teaching? Our guiding principle was to tell the most authentic story, or the most natural story; whatever feels natural in terms of the context of Pixar. So at a very high level that means we've organized our content around the production pipeline of how a movie gets made. That was an important decision

because at the beginning we had tossed around the idea of having a mathematical view at the highest level. So here's our geometry module, here's our algebra one module, but we quickly threw that away in hopes of, again, always keeping the general audience in mind."

Klaidman added,

"We have often heard things like, 'Why do I have to learn this math anyway?' And had some students learned that math was really creative, maybe they would take a different path and find it fascinating while learning it. At Pixar, we have this gift of this great work we get to do, and we know that it matches up with the content students learn in school. Why not allow them to learn it in context of reality?"

It all needed to be done in a way that would make it accessible and user-friendly to teachers. Cruise said, "The most practical, obvious thing we did first is that we created one-hour, hands-on extensions of all our initial lessons that could be done alone or in groups, and we optimized it for classrooms and tested it in classrooms. So that at least there is a piece that was very much designed for classrooms. It's up to the teacher how the students go through that lesson, if students do it at home, or if they do it together in class. We tried to create some pieces that provided



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Overview of Pixar in a Box: <http://bit.ly/1Kwe4Fb>

the opportunity for teachers to take creative actions.”

However, math is just the starting point. Klaidman says,

“Our first year is focused on math. However, in our minds our second year is focused on finance and computer science, and our third year is going to be focused on the arts and humanities, which gives us really a wide range of variants that we can go in to.”

COLLABORATION IS KEY

According to John Hattie, who has done the largest meta-analysis (*Visible Learning*, 2009) ever completed in the world, collaboration is one of the most important learning tools that can be used in the classroom. Clearly, this all takes a culture of trust in each teacher’s classroom where they can model collaboration in the classroom. One of Hattie’s 150 influences on learning that yields a high-effect size is that of teacher-student relationships. This does not mean that teachers need to be the fountain of all knowledge, but that they can learn along with their students, which also

makes Pixar in a Box an exciting tool because Klaidman says that teachers do not have to know it all before they dive in with their students.

According to Klaidman,

“I think that it can be an exciting place for students and teachers to learn together, because there will be new content for all of them.

Yet, the teachers will have real expertise in certain areas, and all of them will have creative ideas that can complement each other. We know through a focus on 21st century skills that collaboration and the ability to learn from each other and work together is vitally important, which is certainly what we do at Pixar.”

When asked how school leaders can help, Klaidman says,

“I guess it’s just really to encourage teachers to see that this is a creative opportunity to get to the same place they need to get. We want to make sure that their students recognize that what they’re learning has applicability out in the real world, but it might take them slightly out of their comfort zone.”

She continued by suggesting,

“It might involve working with teachers to think up new ways of working with their students or amplifying the content we’ve made available. School leaders can help teachers encourage the lifelong learning for their students, and see how all of this connects to the real world.”

Cruise ended the conversation by

saying, “We’re always working with teachers in hopes of creating a feedback loop between the consumers of the content and the producers. I always cringe when I know certain educational products or

programs require a whole bunch of training. I tried to simplify this project into a single educator guide, it’s just maybe two or three pages long, that should provide all the information a teacher would need to do this. It’s all there in one place, and each lesson comes with a briefing.”

IN THE END

A friend who is a principal brought his son to a museum in New York City recently. On Facebook the principal posted pictures of his son creating animated characters, and in some of the photos his middle school-age son was controlling the movements of some Pixar characters on the screen.

Many times children accompany their parents to those museums in hopes to gain an experience that they cannot typically get in school.

It would seem as though Pixar and Khan are trying to inspire students and teachers to have that experience in the classroom without ever needing to go on a field trip.

To learn more about Pixar in a Box visit: <https://www.khanacademy.org/partner-content/pixar>.

REFERENCES

Hattie, John (2012). *Visible Learning*. Routledge: London.

Hattie, John (2012). *Visible Learning for Teachers: Maximizing Impact on Learning*. Routledge: London.



Photo by Deborah Coleman/Pixar

From left to right: Brit Cruise, Elyse Klaidman, Tony DeRose, Sal Khan, Ed Catmull, and James Tynan celebrate the launch of Pixar in a Box.

PETER DEWITT, EdD, is an independent consultant working with schools in the U.S. and internationally as a learning trainer. He is an instructional coach with Jim Knight and student voice with Russ Quaglia. Peter is the author of three education books including *Flipping Leadership Doesn’t Mean Reinventing the Wheel* (Corwin Press, 2014) and *School Climate Change* (ASCD, 2014). He is the series editor for the *Connected Educators Series* (Corwin Press), and is working on a new leadership series with Michael Fullan, Yong Zhao, Pasi Sahlberg, Andy Hargreaves, and Russ Quaglia.