

In the Classroom 17

Animation in the Classroom

SEE THE SHOW NOTES AT: <http://tubarksblog.com/itc17>

Stan Skrabut: Thanks a lot for joining me once again, I really appreciate it. I know you can be doing other things and you're hanging out with me. I can't tell you how much I do appreciate that. This is pretty much the last instructional piece for my multimedia development class. In it, we are talking about animation. Animation, like cartoons, like graphic representation, but it could also be stop motion, where you have those claymations. I don't know if you've ever seen those, but they are able to demonstrate different concepts and they can be used in the classroom for educational purposes. We're going to explore that today.

The things that we're going to be talking about, what is animation? Why use it? There's a couple of principles that Disney has pointed out in using animation and how they were so successful. We'll talk about some tools that you may want to use and ideas that you may want to incorporate into your classroom. We have a little full schedule of things, but I think this will actually go pretty quick today.

I have to admit, I don't use animation. I'm not sure. I don't use animation as much as I used to. When I was in the Air Force and in Civil Air Patrol, I would look for animations or create my own animations to illustrate different concepts. Since I've been out of those organizations, I have not used it as much. I'm not sure why. It's probably something that I can certainly look at, but I think the concepts I'm working with are a little different and I haven't really thought about it.

It used to be that concepts or creating animation was very time consuming, but with digital tools, we have moved that process up and it's a lot quicker. Also, it is within the range of normal folks like you and I. I do not have artistic bone in my body, but there are things that I can do with animation. That I could pull it off and you would think that I had some skills. I think others are in the boat, but I will not kid you, it still takes a little bit of time and so weighing that time versus return on investment, that's something that you have to do.

The cool thing about using animation is once you've created it, you can use it over, and over, and over again. You can also have other people use it. Fortunately, there are people out there who are creating animations and allowing us to use them. I want to extend my appreciation because that is an important tool at our disposal.

What is animation? Animation is a graphical representation of movement. As in a cartoon, you can demonstrate movement. There's a lot of reasons why we want to do this. If you think about animation, you've probably already created your own animation. If you think about the time when you were in elementary school or secondary school, maybe you created a flipbook, where you created a little stick figure and on every

page, you changed it. Then, when you riffled through the book, it would change. It would animate and do something. I remember doing that. That was a lot of fun.

Those same concepts also apply and you can create animations using those same concepts. There's programs that will allow you to do that. I remember getting a program a long time ago. I don't even remember the name of it, but it was an animation tool and it had onion skin paper that you would draw on and you would go through this whole animation process. I was not very good at it, so I left it behind, though it's definitely a powerful tool that you can use.

Why would you want to use animation in your classroom? There is an article out there by Janelle Vargo and gave 10 reasons to use animation in the classroom. I'm not going to talk about all of them, but there was a couple that jumped out at me that I really appreciated. One was that a well-designed animation can really simplify a concept.

That there are some things that are really hard to demonstrate. Like things that I would use for Civil Air Patrol to show the workings of internal combustion engine. Really hard to demonstrate, but an animated animation could show how that when you move the cylinder down, it would pull in gas, and then it would compress it. You put a spark to it, that would force it down, force the air and push it out.

You could go through and explain this in a book, in step-by-step, but have illustrations. Really, when you put an animation to it, when you showed how this all worked together, it was absolutely fascinating. You can show this on a radial engine. It was just wonderful to see and students really got it. The cadets in that program, they really understood immediately what that concept was. Animations can really simplify a hard-to-understand concept.

That animations, you can also demonstrate empathy. I don't know if you've ever caught a video on YouTube, but there's one that's in mind of this young girl. Just a really young child. She was watching a cartoon and she was crying because she really felt for the character in this cartoon. It's possible through well-created animations to get this character. Disney and Pixar, absolute masters of doing this. That the animated films that they create evoke emotion and you can really empathize with the characters. They're just master storytellers and masters at using animation to tell those stories.

Animations, they can be a great hook to a concept that. One of the things that you probably want to do at the beginning of a class or on the beginning of a topic, is to get some interest and engagement with that particular topic. Animation can be a very useful tool for doing that. By showing that animation, that it may just resonate with your students and get them moving in the direction that you want to go.

Animations also help you isolate a specific action in a complex sequence. Talking about this engine, I can certainly show the whole engine and how that works, but I can really just get down to a very specific part. Maybe the carburetor and how the carburetor work and really isolate that. With a good animation, I can do that. You can certainly do it with graphical images or even photography, but showing how it works, those moving pictures allow you to do that.

With animation, you can also model data. You may have a very complex data set. For example, a certain animation that we see every day is from our meteorologists. Our weathermen, weatherwomen, what they are displaying on the screens is animation, in effect. They can put those animations on there and show how our weather front is moving through. Those weather models are projected in the future. They haven't really happened, so they are, in effect, animations that we're able to see. Immediately, you can see it and look and know that you have to roll up the windows on your car. That's how useful they can be.

As I mentioned earlier, Disney are definitely masters of animation. Their animators, when they are putting together a new animation, consider a number of principles. In a book, they created-- I don't have the title in front of me, I just have the article. They talked about some of these principles. The article was 12 basic principles of animation in motion design. James Pannafino wrote the article and talks about these 12 principles.

I'm not going to talk about all of them, but when you are creating animation, you can create simple movement, but for some reason, it just doesn't seem right. You can use PowerPoint, for example, to create an animation and it's like, "Wow, why doesn't that look realistic?" What Disney found out over a period of time was there are certain things that happen that when you incorporate those in your animation, it makes it more realistic, it makes it more believable.

If you're out there creating animation, I certainly encourage you to study up on these principles. Here are some of the ones that I'm talking about. There is a principle called squash and stretch. The most logical way to explain this is when you have a ball. When the ball hits the ground, it will squash. It means it gets wider, it'll start stretching left and right as you're seeing it, and it'll get wider, but it'll get thinner from top to bottom. It's squashing, it's going down. Then when it starts to bounce, it will unsquash and it will expand, it'll get thinner from left to right, but get taller, from top to bottom.

It may get back to its original shape of a sphere. As it's falling or as it's going upward, it may actually get more thin left to right and taller, top to bottom. You can see a ball in motion when it squashes and then it stretches. As it's moving-- You ought to see my hands, I'm throwing my hands around showing how this is done, knowing that you can't see them, but it's helping me explain this. That squashing and stretching makes it more realistic instead of just having a ball that never changes shape moving. That is not very realistic.

Another concept that's related to this is slow in and slow out. That things don't immediately go from zero to 60 when you start to animate something. That it will pick up momentum and this is how things naturally work. That they pick up momentum to get to full speed and then they will also lose momentum as they come to a stop. If you have an animation that just moves from zero to 60 and then moves to another place, it just jots across, that's not very realistic and your mind doesn't accept it and doesn't make it believable. You need to be able to change the momentum both in and out of that animation.

Also tied to this is the natural movement of an object. Very seldom does it move in a perfect straight line. That a lot of the motions that we have, he mentioned in the article, even your natural motions, if you open and close your hands, it's done in an arc. If you watch your fingers, they move in an arc as you're opening and closing them. The same if you throw a ball, the ball moves in an arc. To have something move directly in a straight line to your mind is not believable. This is what-- Just little things that you can weave into your animations to make them more plausible.

Another concept that they work on when creating animations is this idea of pose to pose. They will create different shot or part of their storyboards where the movement is in one shot and then in another shot and then in another shot. That you're, you're catching it at the beginning, maybe at the middle and maybe at the end. The idea is that you are going to animate from one pose to another. Those three shots are called your keyframes and in-betweens that that's what you're doing. Is you're creating in-between frames to connect those dots and you're trying to make that as fluid as possible but you start out with these keyframes so you have an idea of what the motion is supposed to look like.

A way that you can think of this is when you write an outline. That you may start with I, and ii and iii and those are your major topics. Then under them, you have sub-points that you're trying to connect those major topics together. You may put sub-points one, two and three or A, B and C. Then under A you'll get more fine detail of one, two, three. You'll keep doing this and you'll keep adding this content that just flushes it out. The same thing works with animation and that's what you're trying to do. Those are some of those little tips. Things that you just probably wouldn't think of when you're creating an animation, but that you will if you want to create a believable animation.

There's some tools out there. I found an article, *50 Resources to Use Animation as a Teaching Tool* by Lisa Chesser. She has a collection of different tools and resources. The different tools as I was working through them, trying to identify different tools, a lot of them are no longer in existence. That they couldn't create the business model to keep them going, so they are out of circulation. The resources for finding animations if you're looking for good animations to use in your class, a lot of those still work. I will leave that in the show notes so that you can look at those.

Some of the tools that they had there that I want to mention that are useful, one is called Do Ink, and this allows you to create a vector art flipbook animation. They also have a green-screen application so you can throw in other film and put animations on top of it, which I thought was pretty cool. I haven't ever worked with it, but I understand the idea for creating these different vector art flipbook animations and how that would work.

Another program and one that I have used is called Voki, and this allows you to use text-to-speech. It's actually possible that you can go write something, type it out, give that to Voki and it will animate a character. It just makes it a little fun maybe for introducing a topic, something like that. I've used it in other classes but it does get a little pricey after a while so you need to have a budget for it.

Powtoon is another program that you can animate that is quite popular and you see a lot of-- If you go on to YouTube and just do a search for Powtoon, you will see a lot of animations that were created with that program. That looks like a fun program.

One that I think everyone can use that's mostly at your disposal is PowerPoint. I haven't looked at whether Google Slides-- How much animation can do with Google slides. I suspect you can, but I do know with PowerPoint you can make some really wonderful animations and even animation films with PowerPoint. That is a tool to check out. I found a really wonderful example of a video showing how to do that. Once again I will make sure that it is in the show notes for you. Ideas that you can use in your own classroom, ways that you can use the animation.

One is you can create your own animations to illustrate concepts. That you can build your own, but I would first encourage you to go look to see what other people have created. Maybe there you can find an animation, because they do take a serious amount of time and I know for educators that time is a valuable resource. Hunt out different animations to illustrate concepts that you're talking about and build your own library of these different animations. If you can't find the one that you're looking for, you certainly can go and use a program like PowerPoint or maybe one of these others to do these animations.

Some types of animations that you may want to consider are these stop-motion animations. A good example of this are Common Craft. Common Craft has examples of how they've created video of these animations by using the stop-motion concept. There is definitely examples on the internet on how to do that. Once again, it'll take time so you really need to storyboard what you're doing to make sure that you can get your concept across.

Another way to do this is have students do it. This is a great way for them to show what they know in a different way than just simply writing an essay. Having them go create an animation is a rewarding project that they can work on and something they can put into their portfolio for later. It also creates just another way for them to express themselves and it really ties into this idea of universal design for learning, which I have talked about in certainly previous episodes. That universal design for learning, what you're trying to do is provide choice and supports for students. Allowing to go create an animation, this will allow them to do that.

If you go check out episodes eight, nine and 10, I talk about universal design for learning. Very much, it ties into being able to do that. That is a little bit about animation. That there are certainly tools out there that you can do it. It's a great way to illustrate concepts and I think I need to go out and start doing a little bit more with that. Hopefully, you found this useful. Before I let you go, I want to tell you a little bit about my book because I am just a little proud of it.