

ANALYTICAL THINKING

This paper is not necessarily geared towards art, though that's where the majority of people who read it will apply it. However I believe it can be applied to any and all areas someone is looking to improve. This is a sort of "self help" article, it's nothing special, I'm just trying to verbalize those qualities I have noticed and tried to cultivate in myself. It's going to be a mishmash of advice crammed together in one place. Much of it will be theoretical, so I will try to elaborate with examples when I can think of them. As with everything I write, take it with a grain of salt, compare it to what you know, and figure out what you want to use from it for yourself.

Why do some artists progress faster than others? I know several artists younger than myself who have a much better handle on many things I struggle with. I also know many artists older than myself that struggle with things I already have a strong grasp on. Many people might credit the amount of practice as the difference. Others will cite talent as the reason. I personally believe the difference between them is the quality of practice, and the mindset they have.

I don't believe in "talent". Not the definition most people give it anyway. No artist was born knowing how to draw, but some pick things up exceedingly quicker than others. Rather than this being some inborn ability surfacing, I think it's that their practice is more effective. Everyone has to practice to get better, but like anything, practice can be done well, or poorly.

Your goal of practice is to get better, to get more familiar with the subject, and to get faster. So plan it out, like you would anything, but do it mentally. I have a saying I like to remember often, "Work smarter, not harder". I try to make everything I do an exercise in getting better. Whether it's cleaning my room, cooking, riding to work, navigating the mall, or painting a texture, I want to focus myself on improving in all areas. Some people do this innately. They might not consciously label it or identify it as a quality they have, but I think it's a common trait amongst the most intelligent and fastest learners. I'll liken this trait to "learning how to learn". Always question everything you do. Evaluate what you have done, predict the outcome of what you are currently doing, and see if you can mentally branch out the many areas it could go if you were to do things differently. Everything you do should play out like a game of chess. There are an infinite number of moves you could make, all with different results. Try to predict the most effective path, try to label branching paths that might be worth exploring now, or in the future. When you make wrong turns, if you find something valuable that could be worth using later, file it away. Every choice you make should be sampled in your mind for it's value. Make this evaluation of choices in everything you do, so that it becomes second nature. I know I can't turn it off in myself.

Evaluate what you have done:

Every time you finish something, whether it's an entire piece, or a single brush stroke, evaluate it. Was it successful? Could it have been better? Was there a quality to it that you want to repeat? If yes, verbalize it so you really understand that quality. Was there something not quite right to it? If yes, try to figure out what that thing was.

While you are doing something, predict the outcome:

If you were to head down one choice, what would it look like. If you were to head down another, what would that look like? While you commit to one action, think about what would happen if you chose one of the other options you were considering. Many times you might change your mind because you see it going in a different way. Is this stroke heading the way you want? Are you going to hit your target polycount the way you are going? Is this model going to read well for the camera distance of the game? Are the colors I'm using harmonious? I

I was helping a friend make a pie crust the other day, and my job was to crush graham crackers. While I was doing it, I could have put my mind on auto pilot and crush them endlessly with a rolling pin till all was powder. Instead I was focused on this stupid bag of crackers wondering how I could do it better. I realized I was doing it, how dumb it was, yet couldn't stop. I noticed that when I picked the bag up, the larger pieces shifted to the top (something I learned a long time

ago). I realized that the larger pieces were what needed crushing, and that the small powder of the already crushed grahams would cushion them if they were all mixed together, so I shook the bag till the large pieces rose to the top, and crushed only them. Wash, rinse, repeat, and I had them all crushed rather quickly. I might have saved a minute on crushing crackers, which didn't need to be done hastily, but I apply that same mindset when I'm modeling, texturing, laying out UVs or even taking care of naming conventions (the bane of my existence).

I am essentially teaching myself, which is where the vast majority of my knowledge over the years has come. I spend so much time writing tutorials and papers because I remember how hard it was when I was trying to get into all of this. I had to find my own way for the most part, and I want to share my hard won knowledge with newcomers so that they can benefit. My other tutorials talk about process and how-to's but this is probably the most important information I can impart. When you can teach yourself in everything that you do, you can become one of the forerunners who are always figuring out new things and new ways of doing things. Obviously take advantage of the knowledge available through the more traditional means as well; school, forums, tutorials, coworkers, etc.

Think of it like watching yourself. When you do something, evaluate it the same way you would when you watch someone else. When you see someone do something, you don't always know why they do something a certain way, so you puzzle it out. Why would they do that? What was their reasoning? And if you can't figure it out, you'll verbally ask them so you can hear their reasoning. Do that to yourself. When you go to pick your color for the shadows, ask yourself why you darkened it, and how you decided on what color to add to them. What did you want to accomplish with that choice. After you laid down the first stroke, did it work the way you wanted it to? Was it the best choice? Did it look off for this material, but you notice it makes it look like another material you might want to use later on another project? If so, file that color/value/saturation choice away for when it's needed.

When you learn something new, or recognize the reasoning behind a choice you made, try to figure out if it would combine with another piece of knowledge to create something new. I was making a high poly model in max, and I brought up the chamfer dialog box. I know that you can leave dialog boxes up while you add to or remove from the selection, as well as toggle on and off the stack to see how it looks turbosmoothed. That was my old piece of knowledge. Then it came time to make several chamfers in a row, and I remembered that even though I wanted to make a different value for each set, that I could speed my work flow up if I didn't close the dialog box, but just went around chamfering edges at their different values, till the last one was done and I could close. I never read this exact thing in a tutorial, or had someone show it to me, but my conscious is used to trying different pieces of knowledge together to see if they fit, much like puzzle pieces.

Harvey Brown says in one of his books, that we should try new things every day. Take a different route to work, or order something different from your favorite restaurant. If you are used to making different choices and breaking out of potential habits in your every day life, you won't hesitate to try new things in your art as well. When you are late for work, by all means take the tried and true quick method. Likewise, if you have a deadline looming, finish your texture or model the way you know will work quickly. But when you have time to meander, try different things whenever you can. You might find a happy accident that will lead you to new ways of doing things.

Verbalization:

Talk to yourself whenever possible. I like to use my bathroom mirror. Being able to see yourself as well as hear yourself is important. Practice matching your facial expressions with what you mean and are trying to convey. Not only will it make you evaluate whether you truly mean something or not, but it will also benefit you when you are actually talking to someone else, as you know how to convey yourself and your emotions. The benefits of doing this are immense. When you think about something in your mind, your thoughts are so fleeting, you don't have time to analyze them, because thoughts are so much more efficient than words, and you always know exactly what you mean, so you don't ever question it. When you go to verbalize your thoughts, you first have to choose the right words to express yourself correctly, and then you can hear what

you are saying to test it with your ears for truth and logic. In the same way your literature teacher taught you to proofread your papers out loud to catch grammar mistakes, speak your theories and ideas out loud to test them for logical flaws or unsureties. The best part about speaking to yourself, is that if you find you want to change what you said, or pick new words, or reevaluate your ideas, you can without losing face, because you're the only one present. Stop and rewind to an earlier part of the conversation, and say what you now mean, use the word you really meant. Try to convince yourself of your own ideas. You will either succeed and reinforce your belief, or you will fail and question what you really mean so that you can be convincing. I know I've sat in front of a class lecturing, and I'll say something that just came to me, and it's as much directed towards myself, as it is the students, and sometimes it's something I hadn't even thought of before, it just came to me. This happens when I'm talking to myself as well. You will all of a sudden verbalize something you "knew" subconsciously, and by giving it the power of words, you will finally think about it and test it for it's truth.

Getting better is about the quality of the practice, versus the quantity. You can and should change your thought process, and hone your abilities to reason and analyze. Work on it in everything you do, and it will be second nature when you focus on art. Being mindful of your thought process allows you to improve it and change it. If you don't think about it, it could be layed out inefficiently. Think about your thought process the same way you would a piece of art, and work on improving it.