

Teach What You *Don't* Know

by Sweta Patel

Science teachers teach science... Math teachers teach math... We're all familiar with teacher licensure dictating our course load.

But what if... an English teacher taught a fine arts class? Or a math-related class?

As a teacher at an alternative high school in Minnesota, the state grants us variances to take on classes outside of our licensure areas. Some might balk at this and slam an educational ethics textbook at our door.



Therese Huston, the author of *Teaching What You Don't Know*, would reply: "Can you be a good teacher before you've mastered the subject matter? Or perhaps while you're mastering it? I believe the answer is yes." And I agree.

In these past two years, I became aware of a growing need for more elective options for our students. I wanted to be a part of the solution. In a Googling session, I perused a variety of high school course catalogs in search of a topic that would engage both the students and me.

This past year, I--an English teacher--was approved to teach Cell Phone Photography for a fine arts elective credit.

The next minute, fear set in. Ah, crap. What did I get myself into? I don't even know where to begin. My own photos are often a blurry mess (and sometimes, my own finger makes an appearance). I'm such a fraud, and the students will pick up on it. I quickly spiraled down the Drain of Negativity and Anxiety. Fortunately, the "fool factor" soon set in.

In her book, Huston writes, "Content novices are often more effective learners because of the 'fool factor.' The fear of having nothing to say, or, perhaps worse yet, the fear of saying something that is contradicted... is highly motivating." She adds, "Instructors who were happy teaching on the edge of their expertise often diffused the imposter problem by finding a way to be honest with their students about their limited knowledge."

For a period of time prior to the first day of class, I browsed dozens of syllabi for high school and online photography classes, lesson plans, websites with project ideas, forums, and more. I decided to teach students one composition technique at a time, eventually leading to longer projects that would require combining techniques. I was highly motivated to build up knowledge so that I could confidently guide my students' learning (and not appear the fool). For instance, to prepare for teaching the Rule of Thirds, I turned to article after article for descriptions, tips, and sample images. But I was very up front with my students as well - This was my first time teaching this class, that I was a cell phone photography novice myself... that we would have to help each other grow.

So... my students also researched and studied articles, collected and imitated examples, experimented with their cell phone camera tools, and helped each other to carry out their vision for a particular project. We spent an equal amount of time projecting our photographs, offering self-reflection, and giving each other feedback about what was or wasn't working and why. This feedback helped to shape the choices we made as photographers.

JAY - PHOTO #1 - BLACK & WHITE

Highlight 3 techniques that you really thought about while taking this picture.

- **Background**
- Texture
- **Angle** (high, low, eye, close)
- **Editing** (cropping, filters, lighting, colors, etc.)
- Rule of thirds
- Negative Space
- Patterns / Symmetry








JAY - PHOTO #1 REFLECTION

I really tried to focus on the angle, to make sure that when you look at the picture you can see the foot kicking the board. I also tried to focus on the editing so the foot was still visible even with the B&W filter on. Without it on, the foot was kind of hard to see so I had to lighten up the effect.

GRACIE - FEEDBACK: BACKGROUND & ANGLE



- **Tianna Windless**
9:44 AM Apr 15
I love the angle of the flower because I can see the side more clearly
- **Ethan McFarlin**
9:46 AM Apr 15
I like the angle, it focuses on all the flowers pedals
- **Deja Krier-Delton**
9:52 AM Apr 15
I really like your background choices, they matched the items in the pictures very well, especially the first one, the white background compliments the grapes
- **Braydon Baier**
10:42 AM Apr 15
I really like the focus and backgrounds in both photos.
- **Sweta Patel**
11:37 AM Apr 15
Wow! I like the eye level angles here. Helps us to really see the shape of the grapes and petals of the flowers. I'm
[Show more](#)

Some might say that our school's art teacher should have been the one to teach this class. She has the content knowledge after all. I would agree that she's an exceptional teacher and would have created an engaging class. In fact, she was my mentor and sounding board throughout my course planning.

However, I disagree that *only* the art teacher is qualified to teach an art class. Huston writes, "The obvious assumption is that students learn less from faculty who know less about the subject matter and learn more from faculty who know more. But that assumption isn't correct. Evidence from cognitive science, organizational behavior, and optimal environments suggests that experts are not always the best teachers. If you've ever had a brilliant professor drone on at the chalkboard about something no one understands, then perhaps you're not surprised."

With search engines at our fingertips, we can build our content knowledge. A good teacher is one who can create an engaging learning environment. *That's* the art of teaching. Huston feels content novices bring three strengths to the classroom:

- (1) "Being an expert can get in the way of seeing the issues from a student's perspective. After all, when you're the expert, you're fascinated by the inner latticework of the issues and often can't formulate questions that beginners will relate to.... The beauty of being a content novice is that you have an outsider's level of excitement and curiosity... You see what's interesting and what matters to someone who is new to the topic because you're new to the topic, too, and you see how the topic relates to other problems and questions in everyday life."

With the endless topic of photography before me--where library shelves are filled with volumes and volumes of thick books--I had to make choices about what aspects to cover in the 9-week class. I thought about the end goal that excited my students and me - to become better cell phone photographers. This would require learning the most popular composition techniques and practicing them. We would have to take lots and lots of pictures. I could have included lessons around the history of photography or studying famous photographers in depth. A content expert may have made that decision. But as a content novice, taking pictures was priority #1. And my students--also content novices--were inspired by the same.

- (2) "We know that teacher expectations impact student achievement. High expectations are motivating when they are realistic about how much effort and time a task requires... What's surprising is that people who have a lot of experience and are regarded as experts are much worse at estimating the amount of time a task will take for beginners than are the beginners themselves. In fact, the experts' predictions are worse than those of someone *who has never performed the task at all.*"

- (3) "Concrete explanations lead to more efficient problem-solving - If you're teaching students how to solve a problem that you recently learned to solve yourself, research shows that you will probably provide a more basic and concrete explanation than would a content expert. As a result, your

students will probably experience fewer frustrations and more successes when they sit down to work on that problem.”

As a content novice teacher of this Cell Phone Photography course, I made sure that I completed every task, assignment, and project that I planned to assign to my students. In doing so, I had a better understanding of how long they would take my students to do. I worked through the same challenges I knew they would encounter. This often led to breaking down longer assignments into smaller chunks, including specific brainstorming tasks, clarifying written directions, adding more examples and links to resources for help... essentially, creating a more supportive learning environment. As students came across challenges or questions I didn't account for, we problem solved them together. I also often asked them for feedback on the class itself and let them help shape the direction we took with our projects.

Step #1: Choose a title for your storytelling project. See above. Take your time. Choose one that you really care about sharing with others.

Type here

Why is the title/message important for you to share with others?

Type here

Step #2: Search for photographs that relate to your topic that spark something in you... that you may consider imitating for your project. Post FIVE pictures below.

Step #3: Complete the chart below with your three photograph ideas that relate to your title. These are the three photos that you'll be taking for your final project.

Photograph Idea	How would this idea help to tell the story of your title?
#1 -	

But it's another point that Huston makes that excites me the most about teaching what you don't know: "It would seem, at first glance, that content experts would be in a better position to foster deep learning. They know so much more about the field than the content novice; they have a sense of the big picture; and they've invested a lot of their own time finding meaning in the material.... Not necessarily. Keep in mind that a deep approach to learning involves helping the student find meaning in the material from the student's vantage point. It's the student's discovery of meaning, not the teacher's that makes or breaks the deep

learner. So who is better equipped to create that kind of environment of discovery?"

She and I would both argue that it's the content novice. We say that we believe that teaching isn't imparting knowledge into empty vessels. But if we truly believed this, there would be more widespread acceptance of content novices teaching what they don't know. I believe the biggest strength of the content novice is our full acknowledgment that we don't know all of the ins and outs of our class topics ahead of time and that we will have to co-construct our understanding of them through outside resources - print, online, and people.

Because of this acknowledgment, content novice teachers have to think outside of the lecture box (as knowledge givers) and have more of a push to create collaborative, engaging learning environments.

Perhaps you've reached this point of the article and are left wondering, "Well, we don't all work at alternative schools. This isn't relevant." But there can be creative scheduling moves that can be made to allow for more teachers to teach what they don't know.



A mainstream school in our district used to schedule an "e-term." For one full week, teachers would stop their regular classes and host different seminars that students could sign up for. A history teacher with an interest in children's literature might offer a weeklong seminar in "Writing and Publishing Children's Books." A math teacher with an interest in cars might offer "Basic Car Care & Maintenance." A Special Education teacher who coaches baseball after school could offer "Building a Workout Plan." (At our school, we used the "e-term" as inspiration for our own "j-term" in January - here's a copy of [our course guide](#).)



Rochester ALC
J-Term 2020 Course Guide

Tuesday 1/21/20 - Thursday 1/23/20

Course Title	Winter Recreation
Instructor	Rud
Days	Tuesday, Wednesday, Thursday Students sign-up for individual days Students can sign-up for up to all 3 days
Hours	1st-6th (8:00am - 2:15pm)
Driving Question	In what ways does the environment around us give clues to the interactions between all living things? How can we use this information to increase our enjoyment of the outdoors?
Course Description	Tuesday & Wednesday - Students will be going ice fishing. While ice fishing, students will learn about winter lake ecology. Students will learn different techniques and riggings for different fish and fish identification. Thursday - If the student interest is greater than the number of students sign up are able to go fishing days 1 and 2, then day 3 could be another fishing day. Students will go hiking and participate in forest and fauna identification.

Course Title	Basket Weaving
Instructor	Petersilie
Days	Tuesday-Thursday Students must sign-up for all 3 days
Hours	2nd-6th (8:55am - 2:15pm)
Driving Question	What are the basics of basket weaving and how can we use the history of basket weaving to create our own style of basket?
Course Description	This class will start with teacher-led projects for students to learn how to use flat reed and the different types of reed. This will result in the creation of one or both of the baskets below. Students will then research history of different types of basket weaving, leading them to create their own basket of choice.
	
Round Reed	Flat Reed

Course Title	Indoor & Outdoor Climbing
Instructor	Pencille & Truelblood
Days	Tuesday-Thursday Students must sign-up for all 3 days
Hours	2nd-6th (8:55am - 2:15pm)
Driving Question	How do I become a safe and conscientious indoor and outdoor rock climber?
Course Description	Students will engage in research about rock climbing. Students will push their physical limits and boundaries while practicing climbing skills. Climbing skills will be practiced on the ALC rock wall on Tuesday and Wednesday. On Thursday, the group will travel to ROCA Climbing Gym to practice their climbing skills in a professional gym.

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Then perhaps, these initial, brief dips into unknown waters could lead to something longer. Our district requires 24 credits, 8.5 of which are elective. Why not offer quarter-long elective credit opportunities? Teachers could teach around a topic they have some interest in (or a topic that students are requesting), like basket weaving, East Indian Music & Dancing, Podcasting 101, music production, tattoos & storytelling... By graduation, imagine all of the different experiences students would leave with... and a class topic could even lead to a lifelong hobby or interest. I know I'm not considering all of the logistical issues in scheduling and staffing, but that's purposeful. There are always reasons we can find that a new idea won't work. The key is to find a way around all those "but we can'ts."

Another "but we can't" might be this: We don't all have the time it takes to learn and develop the content for brand new, unfamiliar classes. In my case with the photography class, I did do a lot of research to develop a course plan and then again for my daily lessons.

However, I think I did that primarily out of the "fool factor" fear. Instead, I think teaching what we don't know could lend itself very well to student-led project based learning, where the teacher is a facilitator or guide. I could have said this to my students on day one: This class is called Cell Phone Photography. What are some of our goals for ourselves around this topic? How do we get there? As the teacher, my job would have been to guide students to form questions, develop a plan of action, self-reflect, and seek feedback. Perhaps the class could have generated a list of techniques they wanted to learn about, and then each

student could have been responsible for teaching that technique to the rest of the class. I think when we teach what we don't know, we can help our students learn how to learn. And that's a skill they can carry with them well past graduation.

Finally, as content novice teachers think about their unfamiliar topic, they should be reminded that they aren't alone. With technology like Zoom and Google Meet, professionals are easier to access than ever. Teaching what we don't know offers a bonus opportunity of networking with others who can serve as our mentors, or checks for our instruction. In my course, I not only had the support of our art teacher, but we also regularly conducted Google meets with a former photographer for the Post-Bulletin (our local paper). She got to know my students and we developed mini-portfolios for her constructive feedback.

She was as proud as I was over my students' (and my own) growth in our photography composition skills over the course of nine weeks. I can now confidently say that I'm no longer *just* an English teacher.

(Student work is below)

