Khan Academy in My Classroom
(Philadelphia, 2011-12)

Background About Me and my School in 3 sentences:

- I am a Teach for America alum. I taught 9th and 12th grade math in Philadelphia
- I implemented the usage of Khan Academy while teaching 12th graders at Olney Charter HS
- Some students were ready for Pre-Calc, others needed to practice single digit multiplication. And of course, there was everyone in between

Me - Tal Sztainer

The following walks through my desire to implement Khan Academy in my classroom, my route to computer acquisition, the improvements in my classroom as a result of Khan Academy, and the specific methods I used to implement Khan Academy. I would like to note that there are so many different ways that Khan Academy can be used in the classroom and what I did was just one small example. But it worked wonders.

The Road to Khan Academy

After my first year teaching, without any computers in my classroom, I noticed the following:

The **range** of content knowledge varied very drastically in the class. I made big efforts to **differentiate** and to have work available for higher level and lower level students. When I did this, it often meant a huge addition to my **workload**

> "It's annoying when I want to learn something new, but we can't, because we have to go over stuff again and again"
>
> - Joe

There was a multitude of **behavioral** issues that clearly stemmed from a misalignment between classroom content and students' levels - lower level students misbehaved because the material was out of reach, and higher level students misbehaved out of **boredom**

My classes were too big for me to give the **attention** I wanted to for each student

Acquiring Computers

Over the summer, after my first year teaching, I was determined to acquire a classroom set of computers and figure out ways of using them in my classroom. I found a non-profit company in

Philadelphia (Nonprofit Technology Resources) where I could buy very inexpensive used computers. I spent two days contacting family and friends and was able to raise the money I needed for 10 computers. Two days. The point is: if you want computers in your classroom, you can get them.

Leap of Faith

My biggest challenge, even after I had the computers set up and ready to go, was feeling comfortable trying out completely new methods in my classroom. I was afraid that my efforts would backfire and I was nervous to change what I had become used to. I came to the realization that with 180 days of the school year, a few bad days are worth it if as a result, incredible methods are discovered. This slight risk taking led me to a classroom in which the students learned more, behaved better, and I had less work to do.

Don't be fooled, there wasn't a magical moment that instantly transformed my classroom. It took some time for both the students and I to get comfortable using the computers. When I first introduced Khan Academy to the students, they viewed it as extra work and were reluctant and uncooperative in using it. Only after several times, they began to enjoy KA and to benefit from it. Likewise, I had to go through a trial and error phase regarding the inclusion of KA in my lessons. At first I only had lower level students on the computers. I quickly realized that not only was this isolating for them, but other students were missing out as well. Once I figured out several ways of effectively running lessons in which most or all of the students were using KA, the transformations in my classroom began.

How my classroom changed

- Differentiation - KA addressed the varying academic levels and the different styles of learning among students. I could have two students sitting side by side practicing topics at completely different levels. This allowed me to accordingly teach to the students' levels and help fill in foundational gaps, instead of merely teaching to the middle.

"I like working on challenging topics and if I can't get it, I'll watch the video

-Sam

- Confidence - Students felt comfortable working at their own levels. This was specifically evident among students who were at lower levels. Struggling students felt comfortable revisiting skills that they should have mastered years ago. At the computer, they could work at their own pace, without feeling embarrassed or judged.

- Attention from teacher - I could work with smaller, more focused groups while students on KA continued learning and practicing their skills. This was a huge benefit because I could manageably work with every student. Advanced students enjoyed this very much because we could work at a faster pace, on a deeper level.
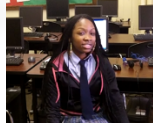
> "I like having a list of topics to choose from . . . I can see what I have accomplished"
>
> - Sarina

- **Excitement** - The level of excitement toward learning increased noticeably. My students became more engaged and invested in their own learning. Khan Academy is equipped with a myriad of features that allows students to see their progress. There was also a fun, healthy level of competition between the students and between classes.

- **Behavioral Issues** - Behavioral management issues reduced dramatically. My students stayed on task and better behaved for longer periods of time. The fact that students had work at their own levels kept them much more engaged in the classroom.

> "I behave better when I have something to do that's at my level"
>
> - Kedron

How I used Khan Academy

My classroom had 10 desktop computers in the back of the classroom. (with the monitors facing me) Khan Academy was used in some capacity at least 4 days a week. Initially, KA was aimed to fill in gaps for struggling students and help advanced students work on more challenging topics. Eventually, all the students were using KA to enhance classroom content understanding. There were several ways that I implemented Khan Academy:

- <u>Aligned Checklist</u>: Students had a checklist of topics to complete on Khan Academy. These exercises aligned with the topics we were learning in class. When they became proficient in a topic, they signed off the topic on their checklist. This simple task gave the students a strong sense of ownership over their learning. I would often split the class in two (usually by level) and work with one half of the class on new content or projects while the other half was practicing their skills on KA.
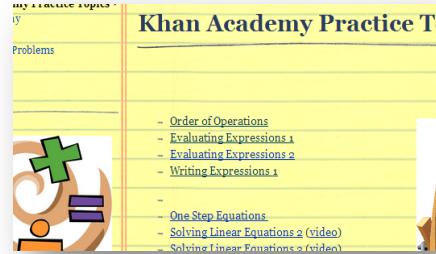
- <u>Filling Gaps</u>: For my struggling students, I prepared additional checklists, and spoke with them each in private. We determined that when class material was far too hard, they would go work on filling foundational gaps on Khan Academy. For many of these students, it was the first time that they made progress in a math classroom in years. They were as excited if not more so than I was!

Part of a topics checklist that I made for struggling students

A simple website that I created on Google Sites with links to KA exercises

- <u>Making Leaps</u>: For my advanced students, I gave a bit more flexibility in which topics they would work on beyond the classroom topics. Every once in a while, I would ask them to choose a topic they want to master (I gave them several options.) We would then put together a list of topics and they spent time mastering these topics on their own. Advanced students were happy to be challenged and this was great when they finished classroom material early.

- <u>"3D Classroom"</u>: Otherwise known as 'stations' this was a fun, but sometimes challenging way of running the class. I had 3 stations: students working with me; students working on Khan Academy; and students working independent of a teacher (either individually or in groups, students worked on projects or out of a textbook.) This was a lot of fun when it worked, and quite chaotic when it didn't. If you have a well run, well behaved class, running these stations can truly empower the students with control and excitement over their own learning.
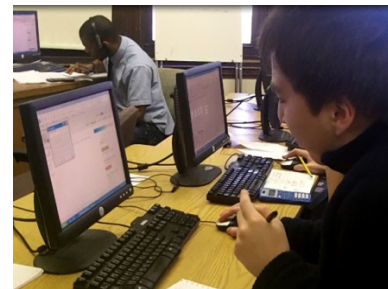
My few ways of implementing Khan Academy were just the tip of the iceberg. There are so many great ways of utilizing this incredible and free program. I'm not claiming that it solved all the issues that arose in my classroom, nor am I suggesting that teachers should be replaced by computers - but Khan Academy noticeably and positively changed the environment in my classroom, increased student learning, and reduced the work I had to do.