The Analytic Geometry Resource Website

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**Description**

Villa Rica High School is located in Villa Rica, GA, which is approximately thirty-five miles west of Atlanta. Villa Rica High School has a total school enrollment of 1469 students, 59% are white students and 28% are black students. In addition, Villa Rica has 61% of the students eligible for free or reduced lunch. Villa Rica High School is the only high school in the city of Villa Rica. It is the largest school in Carroll County Schools district.

The capstone project focused on the need of both students and teachers in the new common core math classes. A website would be developed for use as a free resource to students and teachers who are dealing with the consequences of a new curriculum and limited budgets. The one-stop website for Analytic Geometry would be a place that students and teachers could access in order to get resources by topic.

As this one-stop website for Analytic Geometry was being assembled, it was discovered that the students were not interested in resources provided on the website. Students did not like to listen to the videos provided on the Internet from sources such as Khan Academy. The students expressed that they preferred to hear their own teacher’s lessons. After talking to and gathering data from students it was decided to shift the focus of the website. The decision was made to create a place where students could watch lessons on topics from class in a flipped classroom style. Videos were to be created in the teacher’s style of instruction so the students would use them to help them review for the End of Course Test. The flipped classroom idea revolves around the notion that students can watch lecture outside of class and practice in the class while the teacher is there for help. There have been positive results from using the flipped classroom approach, including a study by Talley and Scherer that showed improved results by students in courses that utilized flipped videos over a traditional course (2013). David Raths presented “Nine Video Tips for a Better Flipped Classroom” that were useful when starting my website and videos (2014). Of particular note is to keep the videos short and have more than just the video for students to use (2014). There is also evidence that students have a more positive view of a flipped classroom course over traditional courses (Butt, 2014).

Work began by creating the website and searched for the perfect website creation company. It was decided to start with Google Sites because the school district uses Google accounts with all students. However, it was soon found to be not as user friendly as desired. The Google Sites URLs are long, random characters and would require the use of a url shortner that the students were unlikely to remember. It was decided to switch to Weebly because it was easier to use. The website URL was easy for the students to remember and the Weebly interface made setting up each of the pages within the website much easier than Google Sites. Weebly was blocked on our school network filter, so work began to have it unblocked by the county office. The county quickly fixed the problem so students could access the website on their devices while on the school filter. Research also began on how to make flipped videos for the website. After much research and trying different scenarios, it was finally decided to use the iPad and the application Showme. After the selection of the application, videos were created alternating between a video from the first semester of Analytic Geometry and the second semester so that the students could use it to review and learn new material.

**Results**

The website was shared with colleagues in order to ask about their opinions on the matter. Based on those results, new ideas were incorporated into the website. Second semester materials were created based on the suggestion of the math turn around coach. Another teacher wanted to use the videos with students at a different High School. After collaboration, it was decided to implement a form to check if students were watching the videos. A Google Form was added to the pages that would serve as practice for the students on the particular topic. Based on their result to each question, it would take them to a new page that indicated if they got the correct answer or incorrect answer, giving them instant feedback. It was also decided to use problems from the videos in the practice to see if the students watched the videos. They have the option to take the practice as many times as they would like, but it would be logged in Google Docs for data collection.

The project will continue after the End of Course Test in May with the hope that all topics will have a video and practice by that time. The website will continue for the next school year and it is hoped to extend the website to the Coordinate Algebra course as well. The project will be determined a success based on students results on the End of Course Test compared to their results from the Coordinate Algebra End of Course Test last year.

**Reflection**

After completing the project, I have learned that there will be some individuals who are more receptive to integrating technology with their students and others who will not. However, the students seemed to be overwhelmingly responsive to the flipped videos and being able to watch them online. It was obvious the flipped videos were a success when the students began to ask me if there was a video of this on the website. That meant that they were using them and found them to be helpful. The website was shared with a close friend of mine at another high school in the same district. She immediately began using it with her students and was inspired to start making her own videos for her students. Modeling what technology integration can look like with students is the best leadership skill to get other teachers to implement with their students.

Through this website and capstone project I demonstrated the ability to continuously learn new topics and technologies and implement them with my students. A website was utilized to make communication and collaborations much more efficient. Appropriate tools were selected for my project after trying out multiple types in order to find the one that worked the best for my needs. iPads were brought in on certain days for students to have equal access to technology and used those tools for classroom management and to maximize student learning in a class period. Above all, the use of the website provided differentiation for my students based on their needs. Students could watch the video of the lesson they were struggling with so that their instructional time with me was maximized.

The best advice to give someone who is going to implement flipped videos in their classroom is to start small. There is no possible way to get all of these topics completed in a short amount of time. You have to learn to deal with disruptions and other distractions while you are making the videos. Be willing to stick with it and put the time in to make the website in order for it to be successful with your students. Ask your students what they need, they will tell you and it will make your product much more useful. Plans are under way to make more videos for my website with the hope of extending this to the Coordinate Algebra course in the future. I am so happy that I did this and feel this will always be a part of my teaching in the future.

**References**

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