Statement of Purpose

The unit I decided to cover is dealing with polynomials and factoring. Teaching in a high school I see a lot of overlap with topics being covered and wanted to detail how the unit is covered in our Algebra 1 curriculum. Many problems with the Mathematics curricula in the high school, is that there is a lot of have common characteristics within the courses. Many teachers do not realize that this problem exists because they do not teach all of the courses and do not realize that much of the material overlaps. The specific unit I decided to cover deals with polynomials, quadratic functions, and factoring/solving trinomials. It is the largest unit covered in the Algebra 1 curriculum for Penta Career Center.

The design of this project is to outline what is actually covered in the class. The Algebra 1 book that is currently used does not cover the material that is supposed to be covered by the standards. I think because of the book, that is what creates the confusion among teachers as to what to cover. The factoring section is crucial because of the implications the students will need in later math courses. Curriculum comes from the Latin word for career which makes sense because that is one of the main goals of high schools (Kilpatrick, 2009).

The design of the unit needs to apply a more real-life application to it. Part of the problem with higher level math is that it is nearly impossible in some instances to relate it to real-life problems that relate with the students. Many higher level math topics, like factoring, are used but not in anything that the students would relate to. Because it is so difficult to relate to current issues, many math teachers do not have the time or resources to find ways to relate it. This lesson is designed around relating all of the various topics to real-life applications. I have found that when you relate it to the students, they are apt to remember it long-term and later on in the course, you can recount the application that was related to it, rather than the actual math.

The other part that is used in the design is algebra tiles. Most students first see the tiles and remember them from fifth grade but after I present them with complex problems, they realize that they are helpful. Many students would never understand the content in depth and be able to apply it without the use of algebra tiles. The teacher has the ultimate role in how the message is being relayed to students no matter what the design of the curriculum is (Chiarelott, 2006). I believe that with the hands-on approach and utilizing real-life examples are the keys for students to master the lesson. Ideas are learned from interaction with adults in the surrounding environment (Geist, 2010).

References

Chiarelott, L. (2006). *Curriculum in Context*. Belmont, CA: Thomson Wadsworth.

Geist, E. (2010). The Anti-Anxiety Curriculum: Combating Math Anxiety in the Classroom. *Journal of Instructional Psychology*, 37(1), 24-31. Retrieved from EBSCO*host*.

Kajander, A. (2010). Teachers Constructing Concepts of Mathematics for Teaching and Learning: “It's like the roots beneath the surface, not a bigger garden”. *Canadian Journal of Science, Mathematics & Technology Education*, 10(2), 87-102. doi:10.1080/14926151003778274

Kilpatrick, J. (2009). THE MATHEMATICS TEACHER AND CURRICULUM CHANGE. *PNA*, 3(3), 107-121. Retrieved from EBSCO*host*.

Wette, R. (2009). Making the instructional curriculum as an interactive, contextualized process: case studies of seven ESOL teachers. *Language Teaching Research*, 13(4), 337-365. doi:10.1177/1362168809341528