

Chapter 1. SPIKE Pedagogy for a wonderful math education.

Pedagogy means: “The method of teaching a subject”

SPIKE Pedagogy is an essential ingredient of delivering an optimal math education to any student as you will learn. Any good tutor knows this.

The SPIKE Pedagogy is virtually impossible to practice in a group environment for reasons that will be obvious.

However, Homeschool Parents can easily practice SPIKE Pedagogy for each of their children.

Public school teachers teaching a group of students in a typical classroom environment have a much more difficult time doing this. This is the first reason Homeschool Math can be Superior to PublicSchool Math.

In later chapters you will learn that “can be vastly Superior” is because of Content which is what most of this book is about.

So, just what is SPIKE Pedagogy?

Go to www.HomeSchoolerToday.com/C1 for my video discussing Chapter 1.

You may also go to the Free Resources at www.HomeSchoolerToday.com and click on the Educational Tab and then go to: The Five Essential Ingredients to a Successful Math Education.

Or, just read on.

You will learn about SPIKE Pedagogy which is one of the essential ingredients in a great Math Education.

Pedagogy is the way you teach Math to a student. Any experienced math teacher or tutor will tell you there are five ingredients of good pedagogy for Math expressed by the acronym SPIKE. Here they are in a nutshell.

Self-pacing Each student will learn math at his or her own pace which is determined by myriad factors. It is extremely difficult for a student to have self-pacing in a group environment where the Math is being taught on a schedule.

Any good tutor realizes this, and this is one reason why rich parents use good tutors to teach their children math when they are struggling with a school's math taught in a classroom to a group of students.

That is why companies like Sylvan thrive, and private tutors thrive. Indeed, that is how I made a good living during my school years from 15 – 27, high school thru graduate school.

Proper Content. A student should be taught Math topics in a sequence so that the student always has the necessary pre-requisite math knowledge for each new topic.

Furthermore, it is desirable that the Math topics chosen are of interest and relevance to the student. This is a horrible failure of our current Standard Math Curriculum taught in most of our public schools.

Part of proper motivation is to explain to the student how a given topic will serve the student well in the future given the student's larger potential interests in life.

This is discussed extensively in many of the Chapters in this book.

Unfortunately, this is also a huge weakness of most public school math education. It is a complex subject that can only be really understood by people who already understand Math.

Just realize that Math is a HUGE subject. No single Human understands or knows all of the Math there is.

Different people need different math topics depending on their broader interests in life. This will be explained in much more detail in later Chapters.

Interactivity. Math is like a sport or game. To learn math You must do math. You must practice. You will make a lot of mistakes. You will struggle to overcome hurdles. But, with the right attitude Math can be one of the most Fun and Rewarding sports or games you can ever play.

This is why the psychology of the student is so important. The student must enjoy the sport or game of Math.

This is why having both a great Teacher and a great Coach is so important. The Teacher explains the Math and selects the proper topics for the student. The Coach guides and encourages the student.

Mistakes are celebrated as evidence of effort, just like in a sport.

Personal achievements are celebrated as the student climbs the ladder of Math topics. The Coach must be sure the student doesn't miss any rungs of the ladder. The Coach must be sure the student practices.

This is a very brief discription of the responsibilities of the Teacher and the Coach. See Chapters 7 and 8.

Keeping Score. It is very important to keep score of a student's progress and recognize the student's progress and achievemants, just like any game or sport.

This is an important responsibility of the Coach. Keeping Score is a powerful motivator for a student. It is like ranks and merit badges in scouting. It is important to create and maintain a good psychology for the student.

Math can sometimes be frustrating for virtually any student. I have a Ph.D. in Math, but I can tell you that many many times I was frustrated.

I probably have made more mistakes in Math than anyone you know. Remember, Babe Ruth was the Strike Out King, as well as the Home Run King.

Remember always, The Proper Math Content will vastly improve most student's lives. Keeping score will prove this when you compare it to the student's other achievements.

Empathy and Humor. A good math student will practice a lot, and make a lot of mistakes. When I make a mistake, I just chuckle a little and correct it and go on. If I make a big mistake I laugh out loud.

Life is funny if you approach it right. In your life you will make a lot of mistakes. It is up to you to decide how to deal with them. This is very important if you want to maintain a good psychology. I would not have earned a Ph.D. in

Math IF I had not learned to laugh at myself and my mistakes.

Summary:

OK, you now have a quick view of the SPIKE Pedagogy which is necessary for a good Math Education.

Now, the facts are that it is very difficult to deliver the SPIKE Pedagogy for each student in a group setting of many students which is how math is still being taught in many of our public schools. That is why Homeschool Math can be Superior to Public School Math.

In a typical classroom, the teacher will be going too fast for some students and they will fall behind and FAIL. Any grade less than an A is essentially failure. You either understand a Math Topic or Concept or Tool, or you don't.

Grading on the Bell Curve is a HOAX. Math performance is essentially Bi-modal. Either you understand it, or you don't.

So, if a teacher tries to slow down as much as possible to keep fewer students from failing, this then makes the Math boring for the good students. Boredom with a subject again creates bad psychology and bad ultimate results.

Indeed, often the primary "motivation" for a good student is to just get a good grade. We'll discuss this more a little further down.

But, the bottom line is that a good Homeschool Teacher and Coach can deliver SPIKE pedagogy and, thus, a superior math education even IF the same math content is taught.

However, in later Chapters you will learn how much better Math Content can be today due to new Tools and technologies which have not yet been included in the Standard Math Curriculum.

And, this is why Homeschool Math "can be vastly Superior" to Public School Math. That is what the bulk of this book is all about.