# Math – It's Not Just for Shamans Anymore

We're all deeply concerned about the direction of our present education system. Poor incentives for our teachers, apathy in our students, and the intrusion of national standards into our classrooms is crushing what little joy of learning still remains in our children.

These conditions are affecting every student and every subject, but one subject is considerably less affected. This is not a positive statement. The subject less affected by classroom chaos is Mathematics; the reason it is less affected is that struggling students have long been shuttled off to non-Mathematics courses of study as quickly as possible.

We have disguised that tendency as "choice" for the student, but in reality, I believe we have created non-Mathematical concentrations (ways to graduate without taking Math courses) because we simply give up trying to teach Math to certain children. And the reason we give up is that our culture subtly instills the myth that some people have a knack for numbers, and others don't. Attempting to teach the un-anointed is futile.

It's one thing to offer various courses of study in order to honor differences in students' talents and interests – surely this approach is to be applauded. It's quite another to give up on teaching an enormously important topic because we can't find a way to communicate it well to certain children.

I was one of those children. Blessed with a supportive family and a good mind, I succeeded wonderfully in my early school years. Reading, writing, counting, and adding came quite easily. Unfortunately, when first introduced to the concept of multiplication, nothing was explained about what it meant to multiply two numbers together. Little equations were just written on the blackboard and we were all expected to autonomously understand them. For the first time in my fledgling school career, I felt utterly lost. Worse, the few children who had been introduced to multiplication at home were making quite a happy fuss about how they understood it, how easy it was. They were inside; I was outside.

It wasn't long before the teacher did explain the concepts of grouping and, of course, I then understood it, but the damage was done. I had experienced Mathematics as my unfathomable enemy and my fundamental attitude was locked into place.

Who can say how well I might have done in Mathematics courses had I not had that initial negative experience? Was it bound to happen eventually? Was I one of the un-anointed? Or did that moment shift my life like a railroad switch redirecting a train along its tracks? I cannot answer, but I can tell you that I spent the rest of my school career, from second grade to my second year in college, sensing that I was performing drastically behind my potential. After my Sophomore year, I finally surrendered and dropped out. My dream was to be a Scientist, and that's simply not possible without Mathematics.

Fortunately, my dream drove me onward. I knew that the only thing holding me back from fulfilling it was my block concerning numbers. My appreciation of scientific concepts and methods, and my level of personal curiosity all aligned me with my desire. So instead of giving up, my subconscious continued to work on this obstacle in the background of my mind.

Suddenly, after spending a few years away from the pressure of trying to learn Math without success, the answer came through. My subconscious meanderings on the subject created a realization that many of us – myself being one – are "top-down thinkers". We need a structure, a goal, a point to learning. Once that structure is in place, we're comfortable fitting the details in. This is the opposite of people who readily learn Mathematics; those who are "bottom-up thinkers" are quite comfortable absorbing facts and rules without necessarily caring about the point of the exercise. The joy is in gathering the details.

At that time, I had no structure, no idea what the "point" of Mathematics might be. But I made a decision that, in that instant, threw a second railroad switch. I was snapped back on track, not only completely capable of learning Mathematics, but in doing so at what felt like breakneck speed. The decision? To simply have faith that some point existed and that the point would eventually come clear to me once I'd gathered enough bits and pieces about it to form a whole – or at least, developed enough of a whole to see a form.

I was stunned at my newfound skills. I happened to have a Calculus book on my shelf, so I pulled it down and started working through it. Every sentence was utterly clear. Solving the problems was obvious. I couldn't understand why I didn't see it before!

In order to hone my abilities, I went back to Algebra and worked my way through Trigonometry, and beginning Calculus. Then I started back to college, finishing with a 3.9 GPA in Physics, a brutally Math-intensive major. I loved every moment of it.

Anthropology pointed to another cultural obstacle, though, and I am convinced that this was the true obstacle for me. Again and again, I sensed that there was something deeper to Mathematics that I wasn't grasping. Certain that everyone else was getting that deeper meaning, I continued to re-experience being "outside". That hopelessness depressed me into giving up, time and again. (By the way, I was mistaken. Others were not grasping deeper meaning; they were just comfortable learning as bottom-up thinkers).

This cultural myth that weighed me down, this shadow of our past, haunts us all, teacher and student. Looking back through Archeological findings, and through our own recorded histories, it leaps out that numerical skills have long been the sole domain of the elite. Priesthoods, shamans, the inner circles of Kings; only these have had access to the sacred knowledge of Mathematics. And these are the ones in whose hands power was consolidated.

Let me say that again: Those with Mathematical knowledge are the ones in whose hands power is consolidated. If individuals have access, they then have the power to confidently make their own plans and decisions, inventions and ideas. Moreover, they have the power to communicate them precisely. Each man is then his own leader. Each man is then empowered to challenge authority.

This is why Mathematics is intensely important to every human being. If everyone is to have as much power to control his own destiny as any other, then each much be brought into the inner sanctum of numeracy. And we have a responsibility to communicate to each student that this is what Math offers to them.