"CRACKS IN THE FOUNDATION"

OVERVIEW

This is a two-part project. Both parts cover the same subjects but accomplish different goals. The film is aimed at refocusing the question about what's wrong with the American education system so that we look at the entire problem instead of just one symptom. Find the causes before you find the cure. The website, on the other hand, is aimed at trying to fix the problem.

The film follows the quirky spikey haired cartoon character, Sputnik, as we ask what we want out of an education and all the ingredients that go into it – teachers, environment, diet, economic issues, psychological and sociological issues, family… the whole gamut. It teaches and demonstrates how all these issues work and are interrelated. It is aimed at the general public and is filled with tons of interviews with parents, teachers, scientists and specialists, peppered with the South Park-ish animated Sputnik who illustrates these issues.

The website goes into much greater detail including dozens of hours of interviews with scientists and specialists suggesting both theoretical and practical ideas on what might work in the future, what has worked in the past and what has failed. These interviews will be organized both by subject matter and by the interests of the users (users are divided into Students, Teachers, Principals, Parents, Politicians, and Potential Employers of the kids coming out of our universities) Included in the website will be downloadable sample lessons as demonstrations of effective and ineffective learning techniques including interactive games. It will also have a forum where professionals can post ideas and discuss things that have worked or failed for them. Because there are a lot of great resources out there, we also include links to texts, websites, non-profits and other resources of interest.

Visually speaking, the website interviews will be a little more sparse simply because it would require too large a budget to create animations for dozens and dozens of hours of interviews aimed at teachers and administrators who hopefully don't need that much spice. Of course, illustrations will be added where needed and the material for the student viewers will be a bit more visual. Because of the nature of the website, additions and improvements can continually be made as funding comes in from other sources.

This project is in stark contrast to films like "Waiting for Superman" or "The Lottery" that are nice pieces of drama but focus the blame too simply on one or two issues and provide little help to fix even those.

You can't just look at sugar and think you know all there is to know about layer cakes. Similarly, you can't look at any single issue and think you know all there is to know about education. Every neighborhood, every classroom, and every child has different needs that have to be filled. The film explores those ingredients to get you

thinking, and the website digs deeper showing things to try, things that have failed, examples of using technology in learning, and going into detail about the science of learning.

Narrative:
What are we trying to accomplish with our education system?
In order to see if we are accomplishing our goals, we must first establish what those goals are. We want our kids to be "educated'... well what does that really mean? Do we want them to be good at Math? Reading? Writing? History? Science? Art? Can we really expect every kid to be great at everything we can imagine? What does being "better" at those subjects even mean? It's like saying you want a "better car". That could mean: more fuel efficient, beefier acceleration, more capable of carrying lots of people and tons of gear, more capable of fitting into small parking spaces in the city, looser suspension to better handle off-road conditions, tighter suspension to better handle racetrack turns... If you try making a car that does all of these things, you'll make a car that ends up meeting none of those requirements. So first and most importantly, you have to decide what "better education" means – and the answer is probably different for different communities. So the solution should be different too.

Let's take Math for example. Stephen Hawking has been called a genius as a direct result of him being incapable of doing the problems that other people do. His physical handicaps prevent him from writing out long formula extrapolations, so he had to turn to thought experiments in an area of Physics that few dealt with before.

We all heard the saying "If you don't learn from History, you are doomed to repeat it." Well how useful is the knowledge that in 1492 Columbus sailed to America? Are we teaching our kids the reasons why he sailed? Are we teaching about the motives of the people who lived where he landed? Is that on our tests or are we only placing value on memorizing names and dates? With my understanding of History and human interaction, I was able to predict to within 3 months the second gulf war ten years before it happened, but this isn't the skill we are teaching our kids.

What about Gym and Health Education? These classes are often considered a joke by many students and are sometimes taught by whoever is available. Now with obesity and other diet related issues, we have the first generation of kids who are not expected to live as long as their parents. In 1990, no state had an obesity rate over 14%. By 2009, ALL states had obesity rate over 18% and in 35 states at least 25% of their citizens were obese. That sort of rapid change does not happen naturally. It's a serious problem.

Art in schools is fast going the way of the Dodo bird. Many districts think of it as a luxury. But if taught the right way, art can teach kids to appreciate the beauty around them and how to get actively involved with their environment. It can teach the kids how to look at things in a different way – to think outside the box and foster the inventiveness that once made America a leader in technological innovation. If

taught as a way of relaxing, then it can be used to make kids forget the stress of living in a violent neighborhood so that their brains may be better prepared to learn the rest of the day. Often times, though, art is taught as A plus B equals C – follow these rules and you can make a bird the "right" way.

So, we need to find our priorities. And those priorities aren't simply which subjects are more important, but rather what skills do we want our kids to have?

We will interview parents to see what they want for their kids, businessmen to see what skill sets they are looking for in an employee, and sociologists to discuss what makes an effective citizen. We will also talk with teachers to brainstorm about which of these qualities they could best get out of the process of learning particular subjects. Notice we said, "the process of learning" not simply "learning." For example, most people aren't going to use Calculus in their daily lives. However you can teach the subject in a way that creates team building, problem solving, independent thought,, or many other skills that are much more important than the subject itself.

Perhaps History should be taught as cause and effect. Parables. Lessons learned from History would then be placed on current events and kids would be asked to predict what was going to happen three days, three weeks, three years, three decades down the road. Then they would be asked to talk about their home lives and asked to make similar predictions. Getting them to constantly think about cause and effect from the first grade would reduce a teenager's likelihood of steeling a car for a quick one hour thrill if it would put them behind bars for years, and it would reduce adult decisions that could lead to things like global warming, the oil crisis and war.

Perhaps math could be taught as logic and applied problem solving. Instead of memorizing trigonometric functions, more time would be spent on word puzzles that need math to solve. This way, kids learn how to look at challenges, break them down into their core elements, and find solutions – in math and outside it.

We often ignore the opportunity to teach our kids how to think. This is a problem -a problem we can fix.

What are the elements involved with a child's education?
We often blame the schools for failing our kids, but this can cause us to avoid looking at the other elements that play into a child's education. A child is affected by the teacher, the principal, his fellow students, his books, the building, his parents, what and if he has eaten, drama outside the school, and other activities outside the school.

If we are truly concerned with the child, we can't just look at the teacher and administration. We have to ask what parental and environmental elements have changed over the decades and how have these affected children?

These influences include:
-Parents and their changing roles.
-Environment. (Home, school, neighborhood – physical, sociological, psychological, and economic. How has the changing neighborhood structure/move to internet culture/physical isolation affected kids? Etc…)
-Moving. (poor student tracking, stress of a new environment,….)
-Reversal of desegregation (parents choosing to put their kids with "their own kind"…)
-Body and mind. (stress, disabilities, diet, legal and illegal drugs…)
-Fellow students (clash of learning types/personalities…)
-Teachers (team work vs solo work, stress, burn out, good techniques….)
-Principals (what are their challenges and successes..)
-Politicians (their goals and difficulties in funding the right issues)
-Role models (who and what are they and how have they changed over the years? What are the expected norms for people to live up to?)
-Learning materials – books, videos, games…
-Employment (changing needs, changing world, changing challenges…)

A brief look at some of these influences:
1. Sociology – The goal of this piece is to make people look at the purpose of education in our society, and then to look at what the education system is made up of. This includes not only students and teachers, but the families, neighborhoods and cultures in which they interact. The system. The whole system.
    a. What is the purpose of education? What skills do we need in order to be hopeful, helpful, happy, successful members of society? This is an incredibly important question that we often forget to ask.
    b. Class warfare – The disparity between rich and poor becomes glaringly obvious in the schools of rich and poor communities. What aspects of class struggle contribute to this?
    c. Family structure and community – family structure and sense of community have changed dramatically since the era of the one room school. How do these support structures affect education?
    d. Authority structures – "Spare the rod and spoil the child" has been replaced with "Boys will be boys". With the changing family structure and changing employer/employee loyalty, children are often moved from one school district to another. When you combine this with the litigious American society and the rules that handcuff schools, there is little sense of clear authority for a child. A rule only has meaning if a child chooses to be bound by it. Detention doesn't work if the student never shows up to it, and suspending too many students causes the state to remove funding

from the school. Parents want stricter controlled schools but fight hard when that means punishing their child.

e. Racism – as much as we'd like to believe we've grown beyond it, racism and reactions to it affect educational choices including bussing.

f. Culture- What are the major cultures in America and what aspects of each affect learning in different ways?

g. Peer pressure and small group structure – students have an incredible influence on each other's learning. Whenever you have a group, people tend to find roles for themselves – the leader, the jokester, the quiet mouse…. There is also a bit of a Lord of the Flies effect where people behave to the group expectations. These expectations can be lowered (as shown in the Blue Eyes vs. Brown Eyes experiment and the Holocaust), but they can also be raised.

2. Psychology- Societies are made up of people so it becomes important to see how these people tick.

a. Developmental psychology – if we are interested in creating good adults, we have to pay attention to the normal development of a child. At certain ages kids tend to form different parts of their personality and abilities. We need to take a careful look at these so that the right kind of help can be given at the right moment.

b. PTSD- In some neighborhoods and in some family structures, kids show signs of Post Traumatic Stress Disorder. While this is an extreme case, many other children are affected to a lesser extent, so examining PTSD and its affect on learning can inform us about other children. These symptoms have to be reduced before kids can absorb what they hear.

c. ADHD – Attention Deficit Hyperactive Disorder has become a diagnosis very much in vogue.   Pills are handed out almost as much as milk and crackers. Is this over-diagnosis? Is ADHD nurture or nature? Can kids be taught to deal with or take advantage of their ADHD, or are they doomed to a life of pharmaceuticals?

d. Displacement -"It's not MY fault"- there is a lack of personal responsibility shared by parents and children and also, to some extent, teachers and school administrators. This is both a psychological and sociological problem. Parents tell their children "It's ok to not be perfect… but you are." This has created a society of people who have egos far beyond their abilities. They blame all their problems on other people. A number of years ago, a woman sued McDonalds for serving her coffee that was hot – and she won. In other countries, geysers at tourist sites have no safety ropes around them with no problems, but in America if you have a pool with no fence around it, you can pretty much expect kids to set up a ramp and ride their bikes into it fully clothed. We are teaching away common sense.

e. Instant gratification – another psychological and sociological problem. With instant gratification, we have lost the ability to have far reaching goals that need hard work to accomplish. People want to win the lottery or be "discovered" as a movie star or a sports hero instead. This helps

> create a generation of students and employees who feel entitled to things they didn't work for.

3. Biology
    a. Memory function. We will be talking with scientists about how memories are stored in the brain. Short term memory. Cramming. And stress.
    b. Diet. How does nutrition affect energy level, concentration, brain and body development and good life practices.
    c. Exercise. How does exercise affect stress, energy level, concentration, brain and body development, eye hand co-ordination, and good life practices?
4. History
    a. The history of the educational system
    b. The history of the American family structure
    c. The history of the American workforce
    d. The history of American business and economy

Here's a closer look at just one of these factors….

Environment
What are the kids doing with their time outside of school? Are they doing things that stimulate their minds? What sort of recreation could re-enforce learning or refresh the mind to prepare it for the next day's learning? How can parents get involved to encourage good practices? For students in well off neighborhoods, summer vacations could mean trips to far off places, while for poorer kids, it could mean three months in front of a TV.

With kids spending so much time in front of the TV, should we be creating more educational TV? Sesame Street is great for the wee ones, but what do we have for older kids? Canada has some great educational cartoons designed to teach Physics. Should we learn from what other countries are doing? What kind of TV did we have back when our kids were doing better versus today? What about educational gaming?

Kids are making a move from physical contact and interaction with neighbors to online neighborhoods. How are these different physically, psychologically, and sociologically? How can we best make learning a part of online communities?

What about building design? There is some evidence to show that the mood and utility of a building help relieve stress and encourage both physical and mental health.

Kids in low-income neighborhoods seem to be more negatively affected by their surroundings than kids in well off neighborhoods. What elements of these neighborhoods are most deeply affecting these children? Is it the low expectations of their peers? Improper diet? Crowded living conditions? Noise? Parents that are overworked? Violence and crime? A perception of a wider gap to cross to success?

Ben Franklin was well off for his day, but he didn't have a car to get around in, or down Gortex jackets and oil heat to keep him warm in the winter, so material comforts alone cannot be seen as the predictor for success.

Teaching Practices:
Education
a. Theory and practice
b. Comparison of other countries to our own

We will discuss many teaching practices, talking not only about their effectiveness in a vacuum, but also how they affect learning in other classes. A couple brief examples include:

Repetition is a time-tested technique. How effective is it?

Hands-on learning tends to excite students and make memorable experiences.   But hands on experiences tend to go slower than lectures. What is the memory retention rate of something heard by lecture versus a hands-on experience? Can either work alone, or should they always be hand-in-hand? Do hands on experiences in one class create unachievable expectations in other classes? If so, how does this adversely affect other classes? What useful skills/personality traits can be developed with hands on experiences that can't be developed with other methods?

How do we make the subjects seem important and relatable? For some subjects, making this leap can take more work than a teacher has time to research. However, the bulk of it could be done by textbook writers. Of course, if the references are so culturally different than the child's experiences, it might just add confusion by relating one abstract idea to another abstract idea. On the other hand, being able to deal with abstract ideas is an important life skill. How can we make sure that both relevance and abstraction are taught? What are the costs and benefits of relating material to the real world? If all subjects were related to the real world, would this reduce the child's ability to think abstractly?

Team teaching – when teachers from more than one subject work together to form learning activities, the learning outcomes seem to improve. Why? Is this because anything novel and fun increases morale? Is it because teachers normally work in isolation and working with another adult increases their morale? Is it because concepts are shown to have universal use? All of the above? Can we use other easier techniques to increase morale or show universal utility and get the same results?

Phonics – How effective are they and why? If it is because of the novelty, can they be continually effective? How does hearing singing from down the hall affect morale and concentration in other classes?

And many others….

 INTERACTIVE GAMES
So I've stated that this is a multi-format media project and yet there hasn't been much mention yet of the interactive game elements. There are many different kinds of learning and many different kinds of students. Oftentimes, interactive gaming can be a useful tool – if used correctly. For illustrative purposes and to promote the project, we will be creating games that demonstrate both good and bad educational game design. If a game is no fun, the student won't play it long enough to learn. If the student doesn't have to use the lesson as a tool to win the game, then they can skirt learning. If the game has no emotional stakes, then it doesn't sit in the student's memory as long. One of our samples is a lesson on sonar and the increasingly noisy environments that whales live in. In the game, the user would play a whale that has to look for a moving object using both high and low frequency. The user would have to avoid fishing gear (not visible with low frequency) while searching for objects that are in the distance (only visible with low frequency sonar) and then get up close to them and read the details (only visible with high frequency sonar). Other levels of the game will include decreased visibility caused by additional noise in the environment and having to eat jellyfish while avoiding similar looking plastic bags. The player would also have to go up for air without getting hit by a boat and hear the calls of their young over the din of other boats, sonar, etc.. So we have the student using the lesson to play the game with visual and auditory reinforcement along with emotional elements. The quantity of learning is low, but the quality of learning is high. The student doesn't learn a lot, but they have learned it so well that it becomes a part of them that could expand into increased interest in the subject and other lessons. (So the lesson has benefits outside of the self contained lesson).

Wrap up:
So once again, the film includes as much material as we can entertainingly put in two hours to refocus how we think about solving problems with education. The website goes into far more detail and has many other tools to help people improve their educational situation. The website will continue to evolve as funding trickles in over the years.

All in all, it is a relatively inexpensive way of making a significant positive impact on education. It helps teachers, students, parents and principals directly while at the same time clearly showing the issues to those outside education and shows them how they can volunteer or otherwise help.

It's a great way to make a difference. Please contribute your ideas, your time, your money or anything else you think might help bring this project to fruition.

Thank you.