Learning Unboxed: Hacking School, part 2

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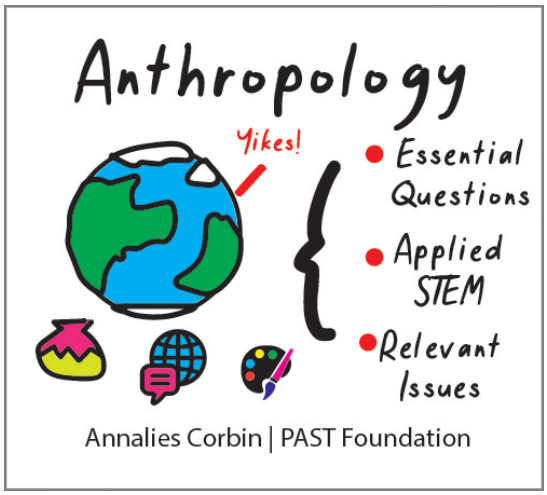
Well before educators and industry were talking about STEM (Science, Technology, Engineering and Math) education and the infamous leaky pipeline that was driving the conversation from a workforce-needs perspective; my fellow PAST Foundation founders were seeing a massive disconnect between the preparation of students coming out of K12 education, postsecondary persistence, and career success. Everyone involved in the founding of PAST came from an applied research background – this is just a fancy way of saying we were all scientists of some description who worked in labs, industry, higher education, museums and so on. Our backgrounds, experiences, and knowledge base were as diverse as our areas of science. Yet we found common ground in one very disturbing and profoundly meaningful area.

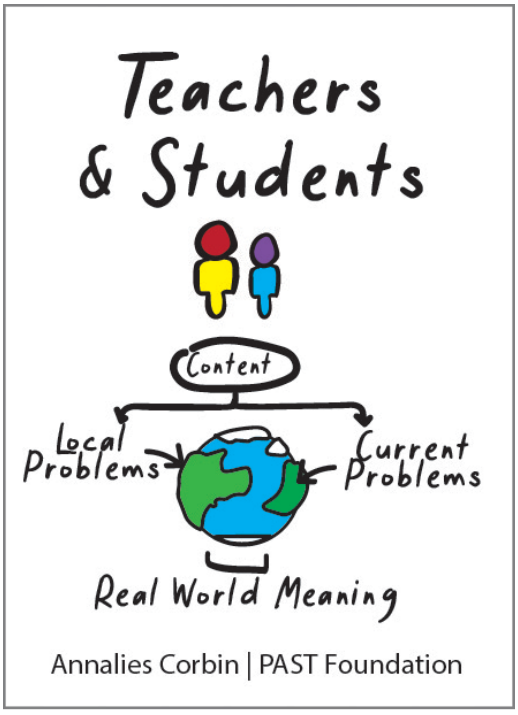
The young students, scholars, or employees who were showing up to work in our labs or on our projects were intelligent, great test takers and interviewed well, but when we got down to the "roll up your sleeves and work" phase – we found these young people were missing some key skills and understandings. As we began to ask each other "why do we think this is happening?" – we repeatedly came back to a single concept that seemed to hold true regardless of geography, culture, and experience. The K12 or foundational education system, in many parts of the developed world, was rooted in a 19th century factory-based model that is now obsolete. What we were preparing kids for at the dawn of the 21st century was no longer the same as it was 50 or even 10 years before. Our social, technological, and workforce needs were very different. It was time for a systemic shift, or a radical recalibration of the traditional education system.

The Wicked Problem Solution



Over the years, we have been fortunate to have educators across the US and from around the world work with us at PAST to help create a better understanding of their needs, challenges, and outlooks. Rooted in the foundations of human culture, our process is intended to be holistic, dynamic, and agile. We draw upon the success of many concepts and strategies put forth in education since the late 19th century including design cycles, mastery, various learning strategies, standards, and modalities of learning. Our foundation is an anthropological perspective, using global issues as a driving influence behind the creation of guiding statements, essential questions, relevant issues and projects. We promote a transdisciplinary approach to projects, in an effort to de-silo content areas, and bring education closer to reflecting real life. Finally, we contend that education begins at birth and does not end until we take our final breath. This extends the way we present the process of learning-integration into life.[i]

Our work is for practicing educators (formal and informal), school administrators, families looking for a new way forward for their children, and communities that are willing and able to take the gigantic pause handed to the world by the COVID-19 pandemic as an opportunity to reimagine education. This is both an exciting moment and a daunting task. But this is doable if we think creatively and embrace the amazing things that are already happening in education around the world while letting go of all of the stuff that we no longer need. Let us begin with a quick exercise by asking ourselves - How much, and what exactly does one need to learn in school?



We all agree that eventually, you are prepared for "a job in the real world," however our education system assumes you have to learn a certain degree of Shakespeare and algebra first before you are presented with real problems at a real job.

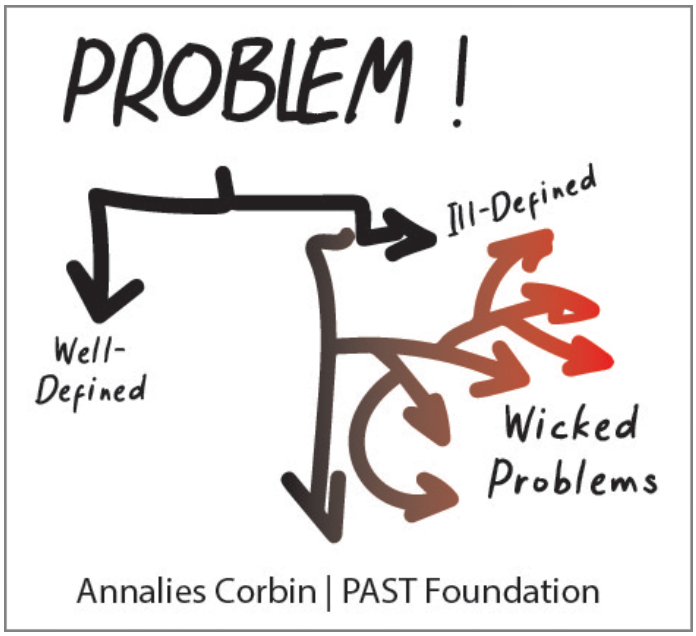
If we were designing the school system from the ground up today, would we do it that way? Perhaps. The education system as we know it today was created in a time without the internet, smartphones, or even mass-produced books. It was created at a time when learning on the fly was simply impossible, and industry moved at a crawl in comparison to today.

Modern education may have been created with the goals of teaching students the joy of learning and to prepare them for the workforce, but today's students are unmotivated by the disconnect

between what they are learning and "the real world," and this gap continues to grow. We do not need small tweaks, we need a major overhaul.

What if we gave students real problems to solve, from real companies, and then used the problem to create the necessary curriculum on demand? This is already done with internships and case studies at the medical school and MBA level. What if we just move this methodology a couple of steps younger and tap into a body of work that positions student experience around a framework of solving wicked problems?

In the late 1960s, C. West Churchman, Horst Rittel and Melvin Webber defined the concept of the Wicked Problem, which relates to solutions that lead to new problems, or only solve pieces of problems.[ii] As an example of a wicked problem, they cited moves in chess that solve an immediate dilemma but do not necessarily solve the entire game. In other words, a wicked problem is a social or cultural problem that is difficult or impossible to solve for several reasons. The problems of the world are in constant flux, but the critical thinking and problem-solving skills needed to successfully solve these ever-changing problems remain the same.[iii]



Today, the concept of a wicked problem is widely used among software designers, city planners, and engineers. Relating the concept of the wicked problem to design principles, integral to all problem-solving, is a perpetual process. This suggests solutions to one problem often leads to the exploration of another collateral problem and so on. What an opportunity this presents to students exploring the world!

Stay tuned for Learning Unboxed: Hacking School, part 3 as we continue to explore what's possible.

References Cited:

[i] Smith, Sheli O. and Annalies Corbin. *Problems, Projects and Products*. The PAST Foundation, OH, 2014.
[ii] Rittel, Horst and Melvin Webber. "Dilemmas in a General Theory of Planning," *Policy Sciences*, 4:155-169, 1973.
[iii] Smith, Sheli O. and Annalies Corbin. *Problems, Projects and Products*. The PAST Foundation, OH, 2014