

Chapter 1

Education 3.0: What Is It and How Do We Achieve It?

Jeff D. Borden

Institute for Inter-Connected Education, USA

ABSTRACT

Education 3.0 is the confluence of known, effective throughputs in teaching and learning due to changed inputs and desired changes to output across higher education. From increasingly diverse student populations to the need for critical thinking by all, education has fundamentally changed. Practitioners must leverage technologies to scale learning and meet demands by families for more flexible, lifelong learning options. Gone are the days when student bodies had more on-campus, residential, homogeneity, as well as small cohorts from selective admissions. Such changes now require architects of learning to consider the efficacy of various teaching and assessment methods in promoting actual learning versus short-term memorization, as well as how to use technology to do all of this at scale. From neuroscience to learning psychology to education technology, there is an impressive body of research around authentic learning, yet most faculty are largely unaware of this scholarship, seeing instruction dominated by tradition rather than effectiveness.

INTRODUCTION

The Great Wall of Education

If one travels to China as a tourist, the Great Wall is often on the list of things to see. Even if only from an airplane window, the 5,000-foot-long barrier is impressive and can be seen from space.

However, when taking a tour beyond the typical towers or sections available to most visitors, the “great” wall may lose some luster. Tour participants might see that the wall was built in distinct sections which do not always shore up or look like other sections. The tour guide may inform the group that each section was built using different materials, seeing thousands of different workers over time, all with widely different skill levels. It can be easily observed that some sections of the wall were able to be scaled without the need of a rope, simply jumping on top from a horse, while other sections literally crumbled

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to the point that gaping holes existed where wall was supposed to be. In fact, experts believe as much as 30% of the original wall no longer exists today (*Did the Great Wall of China Work?*, 2018). Even when trying to fix existing parts of the massive structure, in 2018, a newly renovated section of wall crumbled once again after heavy rains (Zhao, 2018). This anthology, and this specific chapter, seeks to highlight the ways in which higher education shares a similar history and now finds itself in a similar context.

EDUCATION 1.0

The earliest formal teaching contexts were likely apprenticeships, seeing a master work with a novice for some years before the assistant finally became proficient enough to work independently. And while some of these apprenticeships were indeed scholarly, such as the understanding historians have of how Plato was paid to mentor Aristotle, who in turn was paid to teach Socrates (Boeree, 2009), to label such learning as a university experience would be premature.

As with many aspects of culture and society, the ripple effect of the printing press (ca. 1400) had a direct impact on what would become the formal university. While Persian and Asian societies gathered students together for the purpose of instruction, again this was not considered higher learning but typically aligned with religious apprenticeship, military training, or leadership coaching. For example, Seoul's Sungkyunkwan University was established in 1398 (SKKU, 2019), but did not leverage the term "university" until the late 1800's.

Regarding what most consider a formal gathering of adult students, the printing press likely promoted this context in a scaled form. Some of the earliest professorships in Europe were in fact initially called lectureships or readerships, as they were based on the ability to read (aloud) from a small library of hand-written manuscripts and books to a "student" audience. This promoted two societal groups desire for learning more than just about any other. First, religious scholars wished to produce more and more religious leaders, seeing education as the most scalable lever possible. And at the same time, more and more of the upper class of society could both read and write, and as elite families valued learning for their children, formal universities along with "professorships" were born.

The right originally possessed by any Master or Doctor to teach publicly in the schools of a Faculty was gradually restricted to an inner circle of teachers, and the term professor came eventually to be confined to the holders of salaried or endowed teaching offices, or to the highest class of these, such titles as reader, lecturer, instructor, tutor, etc., being given to teachers of lower rank (Nicholson, 2018, Professor section).

So, some of the earliest universities, as we know them today were born in Bologna, Italy, Oxford, England, and Salamanca, Spain. Soon thereafter we see the same context under the moniker of "university" in places such as Bangladesh (Dhaka College, 1841), China (Tingnan University, 1895), and Japan (University of Tokyo, 1877). However, as can be seen in 14th Century paintings (Alamy, 2010) such as Henry of Germany lecturing at the University of Bologna (ca. 1360-1390), etchings from the 1700's, and even famous works from artists such as Rembrandt, the first university classrooms created the context that we still see today in having a professor standing at the front of a room, speaking to students who were supposed to listen and remember. Of note, some of these depictions, seemingly to illustrate realism,

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