

The Elements of an Outstanding Undergraduate Education

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Good Morning.

I am honored that you have asked me to be your keynote speaker this morning on the topic of what an outstanding undergraduate education requires in the current age of East-West convergence. This is a topic that has animated my professional work for more than a quarter century, and I am truly delighted that you would have made it the topic of this forum.

To begin at the beginning, I think it is useful to consider the central point of an undergraduate education: to provide you with an environment where you can complete your preparation for the life you will enjoy as an adult.

If you are lucky, you will have a good 70 years of life after you finish college. Those 70 years should be years of satisfaction and contribution – personal satisfaction that you enjoy for yourself, and contribution to the satisfactions of others. Your university education is an investment that should facilitate your satisfaction and your contributions over that entire 70 year span – not only in the first year of that span.

Preparation for a full life of satisfaction and contribution requires that you develop your talents. All of you were lucky enough to be born with raw ability. But raw ability is not sufficient to bring you a life of satisfaction and contribution. I am sure you have all encountered examples of people with tremendous raw ability who never realized their potential.

To realize your potential, I believe you must develop yourself along three dimensions.

I will talk in a moment about the three dimensions, but I first want to stress the beginning of that last sentence. I said that I believe “you must develop yourself.” Your development is not a task that you can delegate to someone else, and it is not a product that you can purchase from a vendor. It requires, ineluctably, your own personal exertion.

The sentence, “I teach you,” can easily lead us astray. Because its grammatical structure makes me the active subject and you the passive object, it can fuel a fantasy that we, as professors, have some kind of mystical power to dispense this thing we call “education.” Yet we do not have any such power.

All that your teachers can do is support your efforts to develop yourselves. Instead of saying, “I teach you,” it is much more accurate for me to say, “I help you learn.”

So what are the three dimensions along which you must develop yourself if you want to enjoy 70 years of satisfaction and contribution? You must develop your knowledge, you must develop your skills, and you must develop your virtues.

Some of these qualities – these domains of knowledge, these skills, and these virtues – are enduring. Some of the qualities that your generation should develop are the same qualities that my generation had to develop. But other essential qualities evolve with the times. Part of what makes our current age so exciting is the way in which it has come to demand a broader set of essential qualities than have ever been demanded before.

So let me start with *knowledge*.

What we call knowledge is a sophisticated understanding of the world we inhabit. Such a sophisticated understanding includes statements of fact, together with statements of how much confidence we have that those so-called “facts” are really true. I “know” that our planet has a spherical shape, and my confidence level is close to 100%. I also

“know” that our universe contains black holes, but my confidence level is much lower than 100%.

We acquire knowledge by applying powers of critical analysis to two sources of data – our own direct perceptions of the world, together with accounts of that world that we receive from others. Critical analysis requires that we see how each source of data can be flawed. Our own perceptions can be erroneous due to perceptual illusions or our own cognitive biases. The statements of others can be erroneous because the speaker could be sincerely wrong, or because the speaker wishes to mislead. We build our knowledge of the world by steadily accumulating data and forming tentative beliefs, even as we continue to test those beliefs against further data.

[So I will say I have “knowledge” right now that if I were to walk across the room, I would remain on the floor and not float in the air. How do I have that knowledge? I have had a lot of past experiences walking around, and those experiences are all consistent with what others have told me about the existence of a gravitational force. I have a high degree of confidence in this knowledge, but I remain aware of the possibility that it may not prove to be true.]

When we are young children, we are often taught things as “facts” and we are expected to accept that knowledge as absolutely certain. But to live lives of satisfaction and contribution as adults, we have to adjust, to understand that all our knowledge is tentative and might ultimately be proved wrong. We have to be sophisticated about what things we believe most strongly to be true, and what things we suspect, maybe, might possibly be true.

To be effective in today’s world, we need to be prepared to discuss our “knowledge” openly with other, well-educated people who will engage our ideas attentively but critically. As children, we were allowed to say things like, “here is what I feel, and you have to respect my feelings.” But if we want to be effective as adults, we must be able to describe the sources of our feelings – the first-hand perceptions we have accumulated, the second-hand accounts we have received from others,

and the way that we have assembled our perceptions and the statements of others into things we call “knowledge.”

To be properly educated for life as a twenty-first century adult, I believe it is necessary to acquire more kinds of knowledge, in more domains of knowledge, than one had to acquire to be properly educated for life as a twentieth century adult. That is because the pace of life is faster, the power of technology is stronger, and the community of people we interact with is much larger today than it was last century.

What domains of knowledge are especially important for lives of satisfaction and contribution today? Different people will give you different lists, but here are my top three:

1. I think it is important to have a healthy knowledge of the historical development of humanity’s most influential ideas – especially in the natural sciences, in moral and political philosophy, and in economics.

2. I also think it is important to have a healthy knowledge of the history of cultural expression through literature, art, and music.

3. I also think it is important to have a healthy knowledge of global political history.

In each of these domains of knowledge, globalization has brought about enormous changes. Forty years ago, people could reasonably expect to live full and happy adult lives if they developed their knowledge in these areas only from the perspective of their own country, but that is no longer true. Today, a sophisticated knowledge in each of these areas entails an awareness of how different countries and different cultures have approached them – how their perceptions have been similar, and how they have been different. Usually that awareness will mean that we can say we “believe” more things to be true than we might have believed before, but our beliefs are less confident, less certain, more tentative than they might have been in a simpler age.

So much for knowledge. What about the *skills* that are now needed if one wants to lead a life of satisfaction and contribution?

Knowledge is something inside our heads – ideas. Skills involve more than ideas; they involve action. A skill is an ability to perform an

act – to project ourselves into the world – in a way that others value. Sometimes the exercise of a skill involves reacting to information or other stimuli that come to us from our environment. Sometimes the exercise of a skill involves initiating an action on our own.

What are the essential skills for a life of satisfaction and contribution in today's world? Once again, different people will give you different lists, but here are my top five:

1. **Rigorous analysis.** You need to be able to process information with logic and discipline, and you need to be able to present your ideas to others in a logical and disciplined manner.

2. **Numeracy.** You need to be able to apply the techniques of mathematics, in order to derive maximum understanding from quantitative information.

3. **Computer literacy.** You need to be able to apply the tools of modern information technology.

4. **Multilingualism.** You need to become fluent in more than one language, so that you can appreciate how different languages might cause people to think and believe different things.

5. **Cross-cultural effectiveness.** You need to be able to work effectively with people who grew up in different cultures from your own. You need to be able to interpret properly what they say and do, and you need to know how to reduce the likelihood that they will misunderstand your intentions.

Once again, the world is very different today from what it was four decades ago. Back then rigorous analysis – critical thinking – was every bit as important as it is today. But each of the other four skills has become progressively more important as technology has advanced and as globalization has accelerated. And it is worth noting that, to master some of these skills, it is helpful to have explored some of the domains of knowledge I mentioned earlier.

Finally, let me turn to **virtues**. How are virtues different from knowledge and skills, and what virtues are key to a life of satisfaction and contribution?

Knowledge is primarily internal; it involves the ideas we hold inside our heads. Skills are primarily external; they involve the capacity to act in ways that others appreciate. Virtues are both internal and external; they are qualities of character that help us feel happy inside with who we are and that lead others to view us as good people.

What are the essential virtues for a life of satisfaction and contribution in today's world? Once again, different people will give you different lists, but here are my top six:

1. **Empathy.** You need to develop your ability to see through the eyes of others, to stand in their shoes, to feel their joy as well as their pain.

2. **Humility.** You need to appreciate your own fallibility, how easy it is for you to be wrong, even when you are certain you are right.

3. **Generosity of spirit.** You need to give others permission to be imperfect, to make mistakes, without feeling that you are somehow a superior being.

4. **Courage.** You need to be brave enough to make mistakes, brave enough to make a fool of yourself in front of others, brave enough to do the right thing even if you know others will make fun of you.

5. **Authenticity.** You need to be honest, to speak in your own true voice, to overcome the natural human impulse to say things that are untrue because you fear the consequences of speaking truly.

6. **Curiosity.** You need to develop your hunger for learning, to overcome human nature, which is always telling us we have learned enough and can take a rest.

I have been involved in university education for twenty-seven years. For the first twenty years, my world was the world of “western” university education – specifically, in the United States and in France. For the past seven years, my world has been the world of “eastern” university education – specifically, in mainland China.

Over this time period, I have been given the chance to see each of these worlds change, and to change in ways that make it more likely that

students all over the world today will be able to develop the bodies of knowledge, the skills, and the virtues that are conducive to lives of satisfaction and contribution. I would particularly stress three different types of change.

First, universities in the east and the west *have broadened their curricula*. They have done more to introduce the products of other cultures, and the perspectives of other cultures. And they have done more to broaden the set of subjects that are available for study. The idea of a liberal education has become more widely appreciated – an education through which students are actually forced to develop their knowledge and skills across a broad range of subjects instead of being allowed to focus narrowly on the subjects they like the most.

Second, universities east and west *have become more culturally diversified communities*. The best way for a student to develop the skills of multicultural effectiveness is to become friends with a classmate from a different cultural background. That is difficult to do if all the students grew up in the same country.

Third, universities in the east and west *have been working to improve their pedagogy* – the way that they teach. Some improvements simply have to do with the style of classroom interaction. Students are more likely to develop virtues like courage, skills like analytical rigor, and a sophisticated understanding of the limits of their knowledge if they are required to be active learners. That means requiring them to speak in class, and not merely to listen.

Other pedagogic improvements are the result of technology. Things like clickers and online quizzes can help make courses more individualized and personal. Which means each student can get more development out of the class.

These changes are all enormously exciting. Universities east and west today are much better learning environments than they were forty years ago. But they are still only environments; the work of development remains yours to do.

How can you ensure that you take full advantage of the remarkable environment that a modern university represents? Here are just a few small points I hope you will take away with you this morning. Please remember “knowledge, skills, and virtues.” Please remember to taste the humanities, the social sciences, the natural sciences, and mathematics. Please remember to extend your worldview beyond your native culture, to embrace our extraordinarily diverse and fascinating global community. And when it comes to life outside your classes, please push yourself to develop friendships with people from other cultures.

The fact that you are a delegate to this extraordinary forum indicates that you already have the instincts to drink deeply from your university experience. I congratulate you for all that you have achieved so far, and I wish all of you well as you continue on the remarkable journeys that your lives will surely be.