Good afternoon. It is a great honor for me to have been invited to share my thoughts on the “Aims of Education.” It is also a daunting assignment, just shy of asking me to pontificate on the Meaning of Life. Before I began organizing my own thoughts, I did read Alfred North Whitehead’s 1916 presidential address to the Mathematical Association of England, the speech that inspired the “Aims of Education” series at Virginia Tech. We are nearing the 100th anniversary of his remarks, but in some ways, I think we are still discovering the full meaning of his insights. They really are timeless ideas, rooted in what it means to be human. That the discourse in today’s press and in politics is so antithetical to Whitehead’s principles and those of his contemporary, philosopher John Dewey, is both stunning and predictable, as the same discussions about the utility and delivery of education have recurred for hundreds, if not thousands of years.

For those who have not read his speech, I will try to reduce his principles to their essentials. As feedstock for that summation, I offer the following direct quotations from Alfred Whitehead’s lecture:
• “Culture is activity of thought, and receptiveness to beauty and humane feeling. Scraps of information have nothing to do with it.”

• We should combine culture with “expert knowledge in some special direction”

• “…above all things, we must beware of what I will call “inert ideas”—that is to say, ideas that are merely received into the mind without being utilised, or tested, or thrown into fresh combinations.”

• “From the very beginning of his education, the child should experience the joy of discovery.”

• “Of course, education should be useful, whatever your aim in life.”
  “It is useful, because understanding is useful.”

• “The only use of a knowledge of the past is to equip us for the present.”

• “In scientific training, the first thing to do with an idea is to prove it.”
  “I mean—to prove its worth.”

• “Education is the acquisition of the art of the utilisation of knowledge.”
• “...no educational system is possible unless every question directly asked of a pupil at any examination is either framed or modified by the actual teacher of that pupil in that subject.”

• “Whatever possibilities of mental life your teaching should impart, must be exhibited here and now.”

• “…there should grow the most austere of all mental qualities; I mean the sense for style. It is an aesthetic sense, based on admiration for the direct attainment of a foreseen end, simply and without waste.”

• “But no absolutely rigid curriculum, not modified by its own staff, should be permissible.” “When one considers in its length and in its breadth the importance of this question of the education of a nation’s young, the broken lives, the defeated hopes, the national failures, which result from the frivolous inertia with which it is treated, it is difficult to restrain within oneself a savage rage.”

• And finally, to paraphrase Whitehead this time: The mind is not a dead instrument that needs periodic sharpening.

If I could distill these comments further, I would group most under “Hands On; Minds on.” Descriptive terms that come to mind are “Active,” “Integrated,” “Engaged” and “Facilitated.” I would also note the special role of the instructor, who is there to guide and offer context; who is “engaged
and engaging.”

These terms and principles are front and center in today’s discussions among teaching and learning professionals. Increasingly, our faculty are moving purposefully in this direction. Those that have embraced “Hands on, Minds on” are finding teaching much more fulfilling.

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A recent survey of 30,000 college graduates, performed by Gallup in conjunction with Purdue University (entitled “Great Jobs, Great Lives – The 2014 Gallup-Purdue Index Report), demonstrated significant associations between workplace engagement as well as self-reported degrees of thriving in five dimensions of well-being – Purpose, Social, Financial, Community and Physical - with the following six experiences in college:

• 1) A professor or mentor who cared about them as a person, 2) an instructor who made them excited about learning, and 3) a professor or mentor who encouraged them to pursue their dreams – these three experiences in college doubled the likelihood of being engaged at work and thriving in measures of well-being.

And three more:

• 1) An internship or job that allowed them to apply what they had
learned, 2) an active and meaningful engagement in an organization or extracurricular activity, and 3) investment in a project that took a semester or longer to complete – these three doubled the likelihood of being engaged at work.

To sum up, supportive faculty and deep, experiential learning are strongly associated with later engagement and well-being.

Sounds easy, but only 3% of graduates strongly agreed that they have had all six of these experiences.

Now we are far from fully understanding the causality behind these associations, but they give one pause as to the role of education.

In today’s press, you hear about workforce development as a priority. Does that mean that colleges and universities should focus exclusively on training students for their first job? I hope not. Most of you will hold several different positions and serve in many roles before you hit the midpoint of your career. Despite the rhetoric, employers value some of the same experiences that are prominent in the Gallup – Purdue results. A recent survey by the Chronicle of Higher Education (https://chronicle.com/items/biz/pdf/Employers%20Survey.pdf) revealed internships as the most important attribute in evaluating graduates for hiring - well ahead of major, GPA and college reputation.
These employers want to see more emphasis on communications skills, adaptability, managing multiple priorities, making decisions, and problem solving. Only 19% look for specific majors and will not consider candidates without these majors. An important caveat is that not all of you will work for an employer immediately after your first degree. Many will move on to graduate or professional school, and some will start your own companies. Nevertheless, the skills that employers seek will be useful, if not even more important, in pursuing these other pathways.

Incidentally, these employers prefer candidates from public flagship universities over private or regional universities. I can only speculate that larger and more diverse student bodies on a residential campus offer more opportunities for meaningful engagement outside of class.

Another conclusion from the 2012 survey of employers: Universities should break down the false dichotomy of liberal arts and career development – they are intrinsically linked, and rich experiential opportunities are the best way to couple them ... sounds like Whitehead in 1916!

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Coming closer to home, let me reflect of the purpose of education in the context of the Land-Grant act of 1862. As you know, Virginia Tech is one of the original Land-Grant universities.
The Morrill Act created a class of universities with a dual mission: 1) support economic growth; and 2) prepare students from all income levels and backgrounds to participate effectively in our democracy. I would argue that Virginia Tech has stayed true to those missions. I would claim that no other university has stayed truer to the core intent of the Land-Grant Act.

Over and above the mission imparted by the Land-Grant Act, Virginia Tech has another - perhaps more important - mission, reflected in our motto, “Ut Prosim” – That I May Serve. What does this motto mean today? In the late 19th Century, Virginia Tech was a military academy. “Service” meant primarily service to country, especially in its defense. Today, Virginia Tech has become a “Service - to Humanity – Academy.”

Some of you came to Virginia Tech because of your commitment to a life of service. You see your education as a means to elevate your positive impact on humanity in a field that will utilize your gifts and your passion. Others of you came to Virginia Tech because of the culture of community, care and respect. You may not yet recognize that this special culture grew out of Ut Prosim – the self-selection to which has, over the decades, created a campus and community culture that is special and unique. Still others among you came to Virginia Tech for different reasons: Football in the fall; the natural environment; a family tradition... For those of you who identify primarily with these reasons (no need to raise your hands!), I have great confidence that you will become a Hokie in the truest sense - that preparing yourself for a life of service will infect you - if not while you are
on campus, then later in life when you reflect on your journey and its meaning.

So what is to be done about the great disconnect between what most of us in this room feel are the aims of education, and the current public discourse on this topic? Wait it out, the pendulum will swing?? Not a smart idea.

Three decades ago, public higher education was viewed as a public good. Over the past decades, “public” higher education is increasingly viewed by the taxpayer as a private good, one that should be paid for largely by the student - yet the irony is that some in corporate America and some among our politicians think that students will willingly become a cog in the wheel and will pay for the privilege. If the public or a company paid fully for your education, becoming a servant of that company or of a government agency, at least temporarily, would be a reasonable expectation. If you are paying for that education, you need to own it...to make it what is best for you. You need to think about an education for life, not just training for your first job. Granted, it is not an either/or situation. There is balance to be sought, as Whitehead and even the majority of your future employers will allow.

Let’s again come back to you as a student at Virginia Tech, as a Hokie who embraces *Ut Prosim*. That which is in your interest is also aligned with the long-term public good. You are preparing yourself, with facilitation by faculty and staff, and the structure that the university offers, for a rewarding life of service at the highest level possible. You will be fulfilled,
and your life will have meaning. I dare say that the Country and humanity as a whole will be strengthened as well.

Thank you for your attention, and Go Hokies! Invent Your Future!