Science and Technology Are Crucial for Society

The development of human society relies on the continuous progress of science and technology. The rapid growth of modern science and technology has dramatically improved people’s ability to understand, transform, and protect nature, as well as enhance their manufacturing capability. Nowadays, science, technology, and intellectual resources have become the decisive factors for economic growth. In addition, the advance of modern science and technology plays a key role in the development of productivity. Meanwhile, economic and social development has created and improved more favorable conditions for scientific and technological progress. The two interact and enhance one another.

Young Scientists Are the Most Creative

It is common knowledge that scientists are at the peak of creativity and innovation when they are young, yielding numerous scientific contributions with profound impacts. For example, history tells us that Charles Darwin was 22 years old when he sailed around the world. Isaac Newton and Gottfried Wilhelm Leibniz were very young when they developed the theory of infinitesimal calculus. Thomas Edison was 30 when he invented the phonograph and Albert Einstein was 26 when he came up with his Special Theory of Relativity. Nicolaus Copernicus was 40 when he proposed his heliocentric theory. Similar stories can be found in the development of the social sciences. Many outstanding natural and social scientists made substantial achievements in their youth.

Create a Good Environment for the Next-Generation Scientists

A healthy research environment is crucial for the development of young scientists. No matter from a short- or long-term consideration, we as a society should offer these individuals the finest opportunities and resources for their growth. Young researchers often encounter inadequate funding and support to realize their scientific projects. Therefore, we should create more funding opportunities, specific programs, and collaborative networks to support their independence and fulfill their scientific ambitions.

More often than not, a young scientist spends an inordinate amount of time on administrative tasks, not directly related to their research. In order to maximize their scientific output, we should find ways to optimize the administrative process, so as to yield greater efficiency. That way young scientists can spend their precious time on research, the key to all scientific breakthroughs. A vital driving force for the development of science and technology is major innovation, which often requires a substantial investment of time and effort. However, due to the mantra of “publish or perish,” publication is often the key to promotions and funding sources, and young scientists can sometimes be tempted by low-hanging fruit. Therefore, we need to establish decent and equitable evaluation methods to protect their scientific freedom, enthusiasm, and ambitions, so that they can remain positive and pursue science with fewer distractions.

To ensure a brighter future for science and technology, we should continually improve evaluation systems to help recognize and nourish outstanding young scientists, pay close attention to their current status, and create a positive atmosphere for their career development. This is key to laying a solid foundation for the continuous development of science and technology.

Next-Generation Scientists Should Do Their Best

Be Passionate. Young researchers should listen to their hearts and choose their research field wisely. Otherwise, research will be a boring job, yielding few, if any, results. To become a world-class scientist, one should have dogged determination and enthusiasm. Possessing a passion for exploring the unknown in the pursuit of truth helps scientists immerse themselves in pure research and resist external temptations.

Make the Impossible Possible. Young scientists are encouraged to tackle the big challenges that humanity is facing, such as emerging infectious
diseases, new energy and materials, climate change, and deep space exploration. Instead of thinking about what you can do, it is more crucial to consider what you should do, and not let risks or difficulties block your way.

**Be Skeptical.** Being skeptical and critical is also very important. To assume boldly, and verify things carefully, should be the mantra of all scientists. Bold assumptions are idea incubators, without which real innovation would not blossom. That said, we should not jump to conclusions without confirmed evidence or meticulous thinking. Assumptions must be thoroughly verified because they are the seeds of discovering the truth.

**Be Open-Minded.** To be an excellent scientist, one must possess a wide array of knowledge and a broad vision of the history of science. Interdisciplinary research has become an important approach to solve major scientific and technological problems. Young researchers should be aware of the developmental progress in all related fields. Without this knowledge, it is almost impossible to make outstanding contributions. In addition, scientists should strive to utilize the achievements and scientific methods of various fields.

**Be Diligent.** Diligence is a common characteristic of successful scientists, despite differences in personality, ability, or career path. This is not only true for academics, but for professions throughout society. As the old adage goes: nothing prospers without labor.

**Be a Team Player.** Strong teamwork is another key to success, because no matter how intelligent one person may be, his/her scope of knowledge and capability is always limited. Collaboration is critical in tackling the trickiest problems we face in science and technology and often results in breakthroughs.

**Listen and Think.** Experienced scientists have amassed a wealth of knowledge and experience throughout their careers. Therefore, it is of great benefit for younger scientists to communicate and seek advice from them. However, this should not be seen as unconditional obedience or acceptance because scientists must also maintain a sense of autonomy that allows them to continue thinking outside the box.

**Concluding Remarks**

Next-generation scientists are the future of science and technology. Supporting young scientists to maximize their full potential is a complex and important issue. There have been extensive academic research on this topic. Society at large has also started to pay attention because of its importance. Science, technology, and our society are continuously developing. Therefore, we should attune our strategy and policies to meet the challenges of the day. I just wanted to share some of my thoughts with a cross-section of readers in the hope of stimulating discourse on this important topic.