DAKES INSTITUTE

(Data, Knowledge & Education Service Institute)

A Concise Research Report 2023-2024

Continued 2022-2023 report, we pay attention to key thinkers whose thoughts changed the world, key books that shaped human mind, key universities that guided knowledge progress. How these thinkers, books, and universities are selected or evaluated is a matter of debate. We try to give a concise research report based on a few brief principles.

1. Top 10 great thinkers since the Renaissance

The selected principles focus on two points: one is that thinker's thoughts have a worldwide influence across the ages, and the other is that thinker's thoughts have interdisciplinary influences (not limited in his professional field). The preliminary results are as follows:

(1) Leonardo Da Vinci (1452 – 1519). He was active as a painter, as well as engineer, scientist and architect. While he contributes his drawings to the world, his contributions also covered engineering, astronomy and biology.

(2) Francis Bacon (1561 – 1626). He led the advancement of both natural philosophy and the scientific method. His contributions also affect ethics and law.

(3) René Descartes (1596 – 1650). As a philosopher, scientist and mathematician, He formulated analytic geometry and had a widely influence on

modern philosophy and science.

(4) Immanuel Kant (1724 – 1804). His comprehensive and systematic works concern epistemology, metaphysics, ethics and aesthetics, and his thoughts had great influences in modern philosophy and science.

(5) Adam Smith (1723 – 1790). As an economist and philosopher, he was called father of modern economics and a pioneer of political economy and social philosophy.

(6) John Maynard Keynes (1883 – 1946). As an economist, his thoughts fundamentally changed the theory and practice of macroeconomics and the economic policies of governments.

(7) Isaac Newton (1642 – 1726). As a scientist, his contributions covered mathematics, physics, astronomy, philosophy and theology.

(8) James Clerk Maxwell (1831 – 1879). His theory unified electricity, magnetism and light, and then guided the electrical revolution.

(9) Albert Einstein (1879 – 1955). He made important contributions to both theory of relativity and theory of quantum. His impact also concerned scientific philosophy and social philosophy.

(10) Charles Robert Darwin (1809 – 1882). As a biologist and naturalist, he also contributed new knowledge to scientific philosophy and social philosophy.

Of course, there are many other great thinkers worthy of inclusion, and these are just examples.

References

[1] Encyclopedia Americana. 30 vols. 2006

[2] Encyclopædia Britannica. 32 vols. 2010

2. Top 10 great books in human history

Taking the Great Books of the Western World (1st ed. 1952, 2nd ed. 1990)

and the Commercial Press' World Academic Classics Series (120th Commemorative Edition) as references, and taking into account the representatives of Eastern and Western cultures, the following 10 types are recommended:

(1) Bible (c.1000BC). The Bible is a collection of religious texts. It plays an important role in the Western civilization.

(2) Tao Te Ching (c.500BC). It is the most translated ancient classic in the world except for the Bible, representing the Eastern spirit.

(3) Euclid's Elements (c.300BC). The *Elements* cover plane and solid Euclidean geometry and elementary number theory, which play the fundamental role in logic and science.

(4) The Mathematical principles of natural philosophy (1687). The *Principia* set up classical mechanics, which shaped the foundation of modern science.

(5) An Inquiry into the Nature and Causes of the Wealth of Nations (1776). The *Wealth of Nations* set up the foundation of classical economics, leading to modern economics.

(6) The General Theory of Employment, Interest and Money (1936). In the *General Theory*, Keynes contributed his ideas of macroeconomics. With combining microeconomics, contemporary mainstream economics shaped.

(7) The Spirit of Law (1748). In this treatise, Montesquieu contributed his ideas of politics and law with concentration on the separation of powers.

(8) Charter of the United Nations (1945). The Charter of the United Nations is the founding document of the United Nations, which represents the common will of all UN Member States in the world.

(9) Faust (1808). This is a great literature work combining epic style with dramatic novel by Goethe, which represents a peak of modern literature.

(10) War and peace (1869). This is a unique novel by Leo Tolstoy, which

combined literature with history.

This is only a selection, and it is bound to be controversial. For example, Homer's epic "Iliad" as a literary classic, Aristotle's "Metaphysics" as a philosophical classic, and even Penrose's "The Road to Reality" as a scientific classic could be considered, but the above 10 books are the top priorities.

References

[1] Great Books of the Western World. 1st ed. 1952; 2nd ed. 1990

[2] World Academic Classics Series (120th commemorative ed.). The Commercial Press, 2017

3. Top 10 great universities promoting human knowledge

Universities are engines of knowledge. The greatness of a university lies in its contribution to knowledge and social progress. Here are top 10 universities whose contributions have been unparalleled since the founding of the University of Bologna in Italy in 1088.

(1) Harvard University: Harvard University has contributed a lot of scientific and humanistic ideas to the world today, and its teachers, students and alumni have won many recognized internationally Nobel Prizes.

(2) Stanford University: Stanford University leads innovation in Silicon Valley and is an important engine for technological progress and economic development in the information age.

(3) University of Cambridge: The University of Cambridge has contributed many ideas, discoveries and inventions that have changed the world since the Industrial Revolution, affecting economics, science, technology and other fields and promoting continuous progress in these fields.

(4) University of Oxford: Oxford University leads the progress of humanities and contributes wisdom and strength to the humanistic spirit and sustainable development of modern society.

(5) Yale University: Yale University integrates humanities and technology, and has trained many outstanding talents and leaders in the world for the international community.

(6) University of Göttingen: The University of Göttingen once led the development of science in the 20th century, and the Göttingen School has made important contributions to world academics.

(7) Princeton University: Princeton University contributes lots of modern knowledge to the world, guiding the development of science.

(8) University of Paris: The University of Paris (Sorbonne University) has contributed unique technological and cultural achievements to human society and promoted the progress of civilization.

(9) Kyoto University: Kyoto University's profound humanistic heritage and outstanding scientific and technological research make it to win the most Nobel Prizes in Asia, and it can be called the number one university in Asia.

(10) MIT: As the world's great technical university, MIT launched many new technologies and economic ideas that are changing the world.

There are many excellent universities, and this is only a qualitative evaluation selection different from quantitative university rankings. The methodological basis still needs to be further improved.

References

[1] Methodological clue: Using the cross-set of most top 100 university rankings as a pool, select top 10 based on their high-qualified achievements.

[2] Wei, S. X., Wang, H. Y., Cao, C.* & Ye, F. Y.* (2021). One big science project or 1000 smaller ones? *Current Science*, 121(4), 479-484.

4. Top 3 knowledge progresses 2023

The three compelling knowledge advances in 2022 are

(1) AI-GPT: The AI-GPT technology is reshaping the social landscape and changing the world.

(2) Gene editing: The gene editing technology begins to practical application and develops quickly.

(3) Brain mapping: The brain mapping begins to affect the biomedical field, combined with AI technology.

References

[1] 2023 Breakthrough of the Year. Science. 2023

[2] 10 breakthrough technologies. MIT Technology Review. 2024

Compared with 2022-2023 report, the 2023-2024 report changed a few items in last two parts, while the first two parts almost keep same, indicating the relative stability of classical knowledge and the changes of science and technology.