



Pioneers 2071:
Questioning the Next 50 Years

Scenario 3: Education and Economy
- The World of an "Intelligent" Mind -



Note: We would like to suggest all participants to focus on the replacement of the human workforce on account of the development of artificial intelligence (AI) throughout the given situation while reading the following scenario. Also, please refer to the dataset for further details considering the scenario.

Historical Background

Year 1930

Stemming from its social hierarchy system, the monarchy of the country Aerok experiences difficulties in social and economic activities. The state of Aerok abolishes the social hierarchy system as it suffers from poverty caused by insufficient resources and poor economic activities. In the process of undergoing modernization, Aerok achieves growth in multiple areas through the adoption of laissez-faire capitalism.

Year 1950 - 2010

Under the slogan “strive to be someone useful,” Aerok places importance on human resource development. With full support from the state for over a span of half a century, along with developments in the industrial, steel, and petrochemical industries, the development of secondary industries is also promoted. With rapid economic development, Aerok becomes a powerhouse in high-tech industries including the motor, shipbuilding, and semiconductor industries.

Year 2010 - 2040

With the boom in artificial intelligence (AI) around the globe, Aerok leads the development of the AI industry based on its well-established high-tech industries. Aerok fully supports the AI industry by preparing new economic policies and granting research permissions to specific research institutes for its intensive development. It also conducts large-scale investments to construct AI-specialized departments in universities, research institutes, start-ups, and IT industrial complexes. As a result, numerous AI enterprises that dominate the global AI market are founded.

Aerok accumulates enormous wealth from the development of the AI industry. With AI working thousands or even 10,000 times more effectively than humans, the value of Aerok increases. Thanks to large investments, now 18 of the top 30 IT companies in the world are from Aerok. As the economy of Aerok prospers, the citizens become affluent and their lives improve with each day. Scientific and technological developments fulfill people’s physiological needs and desires for safety.

However, wherever there is light, there is shadow. Various problems have begun to surface, such as the monopolization of wealth by a few corporations that dominate the majority of the market. The widespread adoption and sophistication of AI have reduced the social standing of humans, and the jobs of many are replaced by AI. As people’s income begins to fall, consumption and investment also decrease, and social capital is accumulated by the AI corporations. Ultimately, the social and economic status quo reverts 100 years back to the 1930s.

Year 2040 - 2070

To recover its economy, Aerok adopts the “basic income system,” which provides basic needs to the non-working class, based on the cheap productivity of AI. The majority of the people are able to live comfortably without having to perform labor and have increased their consumption, which triggered economic activities. For about 10 years (Year 2040-2050), the society seems to function well superficially, but the gap between those who work and those who do not, widens with respect to the quality of life, economic power, and education fervor. As people’s physiological needs and desire for safety are met, they now begin to yearn for respect, position, and honor, and desire for self-realization regarding perfection of self and a life worth living. People seek jobs; however, there are only limited openings due to AI, which make them look for work more vehemently. In response, the government of Aerok employs the TITLE (Test of Intelligence: Technology & Linguistics Examination) in 2050, a system used to select the working age population through a test based on a particular set of criteria.

Present-day

Year 2071

TITLE is now used to select the working age population in the society.

< Curriculum >

All citizens, until the age of 18, follow the same type of school curriculum. The curriculum is designed so that students can acquire academic knowledge, self-explore, and enjoy various experiences, thus cultivating their potential.

| Domain | Mandatory curriculum | Selective curriculum |
|--------------------|---|---|
| Academics | Mathematics, language, programming language, and logic | Academic application, second and/or third foreign languages, literature, economics, social studies, design, arts, music, and physical education |
| Testing potentials | Test of personality type for learning, career aptitude test, occupational interest test, and personality test | (None) |
| Growing potentials | Writing, debate and discussion, and presentation | Human exploration, communication methods, and leadership |

< **TITLE: Test of Intelligence: Technology & Linguistics Examination** >

All citizens of 18 years who have completed the academic curriculum at school are given the opportunity to take the TITLE. The test evaluates a student based on four fields.

Field 1: Programming and Technological Design

Evaluated ability: the ability to manage lifestyle coding and programs

Field 2: Mathematics and Applications

Evaluated ability: mathematical knowledge and thinking skills for practical application

Field 3: Language Proficiency Test

Evaluated ability: reading and vocabulary, listening, talking, and writing

Field 4: Interest and Aptitude Test

Test-takers can choose the test subject depending on their interest and aptitude.

Example: advanced mathematics, music, art, and bioscience

Unlike the early 2000s, as a result of technological advances like AI, much of the labor is replaced by AI and machines. The number of laborers required by the society does not exceed 5% of the entire population. As a measure to control the overly intense competition among those who are able to work and to select them impartially, the government decides to let 5% of the student population pass the TITLE, and advises corporations to use official TITLE results as the standard of hiring. Consequently, there emerges a privileged class of people who have obtained employment, pay, and honor. Those who have achieved high scores in the test now constitute the “elite” group. They only interact with themselves, which gives way to the phenomenon of nepotism. People in the non-labor class do not work, and sustain their lives through the basic income provided by the state. Some struggle to achieve “self-realization” by becoming artists or entertainers.

Question to Consider

Q. It can be derived from the given text that people’s sense of accomplishment and desire have reverted to the period before the introduction of basic income, and that this will limit the working population. Further, it is also likely that instead of chasing wealth and honor by working, the majority of the people may pursue a high-quality stable life, where nobody is willing to work.

Even in a society with highly-developed AI, analyzing the job market is difficult. Apart from the occupational sectors mentioned above, what other new jobs will be created? Which sectors will survive? Which sectors will thrive and which will cease? This should be considered from various perspectives (personal, local, and global).

Worldview of professions

The job market has continuously changed during the past 50 years. With the development of AI and introduction of the fourth industrial revolution, AI has replaced a large number of jobs. However, a variety of new jobs have also been created as well. Currently, professions that emphasize self-realization have endured, such as those involved in science and technology research—which have led the fourth industrial revolution—and artists, who are not greatly affected by technological development.

Individuals engaged in science and technology research

Unlike the numerous occupations that have disappeared and been replaced by AI, like counselors, linguists, historians, and culinarians, there is a high demand for researchers in charge of the management and development of AI. Since prominent AI research institutions and corporations located in Aerok are reputed for their active research and achievements, many people from overseas come to Aerok in search of employment and to conduct research. Hence, even with TITLE, there is a relative increase in the number of those involved in AI research in Aerok.

The three main categories of research institutes to which researchers belong are as follows:

The first is researchers affiliated to corporations, especially conglomerates—they carry out research related to goods produced by the corporations, like autonomous vehicles and various recommendation systems. These researchers are paid by the corporations.

The second are graduate students, researchers, and professors affiliated to universities, graduate schools, and their research institutes—these researchers contribute to developing technology that is the focus of their laboratories, and cooperate with corporations if necessary.

The last are classified as one-man businesses, namely “freelance researchers.” These people have developed their unique technology and generate profit by cooperating with corporations or institutes that need a specific technology. While they are unable to cover a wide range of fields compared with those working in corporations and institutions, they are able to provide assistance to affiliated researchers based on their in-depth understanding and technical knowledge in their field of expertise.

Professions that focus on self-realization

As one of the most representative professions that allow self-realization, artists survive in a territory that AI is yet to conquer and continue to make a living by performing creative activities. As an exception, there still exist academic institutions and corporations that professionally educate and cultivate artists. Unlike the other professional fields, the government and society support such artistic activities through art schools or exhibitions and concerts.

In the case of professions that lie on the border of art and technology, such as film and animation production or computer games programming, some are employed after receiving education and passing the TITLE while others are accepted for having an innate ability without having to take the test. In other words, while the pay or honor may be less, professions that have a low AI-occupancy rate or little relevance are relatively more open to people who have not passed the TITLE.

Education is a ladder for movement between social classes. Education also serves as a means, tool, and gateway to buttressing the power class of a society, therefore, education-related issues should and must be considered to understand the overall picture of that society. Otherwise, educational problems will continue to persist and will constitute a large part of the problems in the society. Further, it will undoubtedly be connected to various interest groups and relevant individuals, who form the core of civic groups, political parties, and AI organizations.

The following are more specific cases of such problems.

Problems in the field of education—to where has the purpose of education gone?

Perhaps we have progressed too rapidly; shadows begin to loom over the spectacular developments we have achieved. The society that pursues efficiency through competition triggers a stratification structure in universities and excessive competition among adolescents. The majority of high-achieving students pass the TITLE and are enrolled in top universities. These students hope to get high-income jobs that will guarantee wealth and elevate their social status. Such a phenomenon leads to abnormal growth of Aerok's education market.

Excessive competition leads to the trend of “education centered on university admission.” Inevitably, both public and private education systems begin to focus on the TITLE. Similarly, students place importance on outcomes and scores rather than the process and understanding of the materials they learn. As a result, education has lost its essence and has simply become a competition arena, causing the following problems:

1. Students who have given up on their academics and career path to escape the intense competition either drop out of school or live a deviant life, due to the lack of available jobs and minimal economic pressure owing to the basic income that is provided. All students except the top 8% drop out of school before graduating, seeing no hope of passing the TITLE and therefore no reason to continue their education. The problem is that there is just as much increase in the number of students who have given up as the decrease in the number of those who survive the competition; the number of delinquent and dejected students has increased a lot.
2. On the contrary, students who did not give up and are intently engaged in their studies suffer from severe stress due to excessive studying, and a large number of students give up on their studies as they feel overwhelmed by competitions. The biggest cause of the rising suicide rate among adolescents has always been academic stress. Pressure and expectations at home have driven children's school days into

a cycle of competition. Students who wish to study listen to preparatory lectures and solve problems to prepare for the TITLE, instead of socializing with friends at school. Similarly, at home, they study materials provided by private agencies and academies, rather than conversing with family members.

On observing the above problems, many people criticize the current education system for losing its essence. Rather than simply delivering knowledge and focusing on accumulating test scores, education should be the “teaching and learning of all behaviors and values necessary for a person to live life as a human.” Due to competition and lack of motivation, however, many students give up and lose the opportunity to learn these important aspects.

Problems related to the job market and economy—the formation of the privileged class

In Aerok, excessive competition for privileges and the path toward achieving it is apparent among adolescents. A society that only seeks competition and privileges naturally becomes a privilege-centered one. Students who were accustomed to competition since childhood have become adults who consider it as natural, justifying the privileges they enjoy. Shortly, a privileged class of AI corporations emerges, bringing forth the following problems:

1. Members of the privileged class support each other and look out for the interests of one another. Additionally, developing interpersonal relationships with the privileged class will soon become a desired capability. This will solidify the presence of the privileged class, cultivating distrust toward the social institutions among those who have generally believed in the “efforts made under a fair system.”
2. A rift will form in the society. As mentioned above, distrust against the social institutions will make achieving harmony between the privileged and non-privileged classes difficult. This will soon divide the society, and the society will lose its vigor.

Forces that oppose the irrational structure of the privileged class that pervades education and corporations begin to emerge.

Question to Consider

Q. What are some of the problems that may arise in the society depicted in the above scenario? Looking into the examples illustrated above, analyze various problems and challenges the society is currently facing and discuss possible solutions to resolve them.