

## Desired Outcomes of Education 4.0: Understandings, Boundaries and Linkages

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### Abstract

Due to globalization, technological disruption, VUCA, new normal trends, etc, world situations are rapidly changing. Coping with changes in the education sector by developing 21<sup>st</sup> - century skills for learners alone might not suffice for human resource development to retain a good quality of life the present society and in the future. During the Economic 4.0 phase, the education sector is required to accelerate the construction of Desired Outcomes of Education 4.0 (DOE 4.0). This is a human resource development for students to exhibit immunity to combat problems with creative self-reliance and take care of themselves, their family, and society effectively. This is done using a development process based on Economic Efficiency. Educational administration is monitored using the KAPM technique (Knowledge, Attitude, Performance, Morality) with institutional administration processes following the Good Governance guidelines to create a quality culture in educational institutions and continually evaluate the learners' achievement of the DOE 4.0.

**Keywords:** economic 4.0; education 4.0; DOE 4.0; desired outcomes of education;

### 1. Introduction

The objectives of educational administration have changed with dynamics. In the past, the objectives of education were aiming for emotional, social, and mental development (Boyer, 1981). Afterward, emphasis was placed on developing learners' 21st-century skills (Friedman, 2005) to comply with the changes caused by globalization (Velasquez, 2019).

In the present, changes are still continuously occurring, either the changes caused by technological disruption (Christensen, Horn, Caldera, & Soares, 2011), the rapidly changing dynamics or the VUCA circumstances (Mack, Khare, Kramer, & Burgartz,

2016), along with the ongoing changes in the ways of living caused by the Covid-19 pandemic, creating New Normal trends (Coibion, Gorodnichenko, Weber, 2020; UNESCO, 2020).

These changes express a severe impact, from mechanization or robots to replacing people in almost every production process, every production unit, and almost every establishment. Therefore, existing labor was terminated, causing unemployment, leading to an increase in the unemployment rate, and disrupting new workers entering the labor market. In the case of those who are currently unemployed and graduates who will soon enter the labor market, the lack of immunity to combat problems will lead to failure in solving problems associated with living against the unemployment situation or zero employment in society. However, if the unemployed are immune to problems, they will create living opportunities in each arising situation.

Certainly, the problems that arose during the Economical 4.0 phase, from globalization, technological disruption, VUCA, Covid-19, the New Normal trends, etc., are economic problems. However, they are problems related to the education sector, which are the administrators or developers of people entering the labor market. A good solution for the education sector is a proactive solution, where the new objectives of educational administration are adjusted. This is done to execute educational administration for creative self-reliance, reducing dependency on others, or minimizing dependency. So the students can achieve immunity, be able to tackle obstacles creatively, and to be able to take care of themselves effectively, their family, and society persistently.

## **2. Review of Related Literature**

### **2.1 Understandings of the Desired Outcomes of Education 4.0**

The Desired Outcomes of Education 4.0 should compose human capital development and allow the rapidly changing and unpredictable matter of the Economical 4.0 to be dealt with appropriately. The education sector is required to accelerate the adjustment of the human resource development concept, formerly responding to the industrial sector development, to focusing on developing people. Desired characteristics include the ability to deal with problems arising in all stages of life, the immunity to combat problems or changes with creative self-reliance, and taking care of themselves, their family, and society effectively.

The ability to take care of themselves, their family and the society effectively can be defined with a person who is fully capable of occupation in the future, receives enough income to sustain life, establishes stability for the family, and contributes to improving society. The four (4) qualities required are known as the "KAPM" traits, consisting of K: Knowledge, A: Attitude, P: Performance, and M: Morality as follows:

### **K: Knowledge**

Knowledge emerging while the world is enduring trends such as technological disruption, VUCA, New Normal trends, etc., is rapidly changing. Teaching students existing knowledge is therefore equivalent to teaching outdated knowledge. Nevertheless, educational institutions are obligated to teach Digital Citizen learners to retain Digital Literacy intelligently. Learners are trained to find equitable knowledge and have a continuous will to learn, also known as lifelong learning, from the digital world. This involves learning from others or their surroundings, from their own experience or the experience of others, and can apply the knowledge gained to a job, initiating a career, improving and developing work, and creating new opportunities to work for themselves.

### **A: Attitude**

The underlying foundation of a Good Attitude is Positive Thinking. Educational institutions must create learners who are conscious of being national citizens and good global citizens. Learners should have a volunteer spirit, justice, equality, and equity for peaceful coexistence. Learners should contribute to using and managing natural resources and the environment in a balanced and sustainable manner, being selfless and avoiding exploiting others or society. They should be able to differentiate between what should be done and what should not be done in society, for a quality society and good standards of living.

### **P: Performance**

The key performance of learners is Digital Intelligence, with the potential to integrate analytical thinking skills, creative thinking skills, problem-solving skills, cross-disciplinary integration skills, and cross-cultural skills with technology and communication skills. This can be used to increase opportunities and create value for themselves, the organization, or society creatively.

### **M: Morality**

During the process of creating morality for learners, the concept of Morality should not be isolated from the expertise groups of Knowledge, Attitude, Performance. Both personal morals and morals in the profession must be created, that is, to develop the learners to have integrity in their duties and in their profession. They should not be corrupt and always adhere to rules and regulations. They should be self-disciplined, disciplined towards others and society, acquiring rationality and tolerating differences.

The differences in question include the diversity of races, religions and ideas. They should be developed into a diligent lifestyle, patient and resilient when encountering obstacles, and determined to consistently carry out their job in a serious manner. They should apply wisdom in their daily lives and problem-solving to be successful. They should behave as a virtuous exemplar, not causing trouble, not causing suffering for oneself and others, and bringing happiness and peace to society. They should be individuals with value, functional, and manifest morals that are beneficial towards society, bringing positive progress to the society and the country.

Essentially, all levels of educational institutions must encourage learners to integrate Knowledge, Attitude, Performance, and Morality, in order to create identification of learners. This is also known as the "KAPM" characteristics, which will act as the immunity for learners when encountering new problems, complex problems, problems that have never been previously encountered, or problems caused by rapid changes from technological disruption, VUCA, New Normal trends etc. influencing the occupation and lives of learners. In order to be successful in fighting against problems, learners must portray the following 4 behaviors to prove that they have acquired the desired characteristics:

1. Able to **analyze** the severity, the difficulty and the urgency of their current situation or the circumstances they are encountering.
2. Able to **determine** or specify the cause of the situation or the reason for the occurrence, whether a single cause or a complex cause is involved, and which parties it is concerning.
3. Able to **predict** in the case of a persistent issue, what could potentially happen, or what could have happened, both desirable and undesirable, which parties are related to the issue, the severity of the issue and what it could potentially impact.
4. Able to **decide** what should be done and how it should be done by defining a variety of choices available to handle the situation, based on information and the basis of knowledge, attitude, performance, and morality, and be able to make the appropriate decision.

Thus, the Desired Outcomes of Education 4.0 is the development of learners to possess creative self-reliance, to be able to take care of themselves, their family and the society. This is fulfilled by generating the immunity to solve future problems within learners, or portraying the "KAPM" characteristics, which includes the ability to analyze the current situation, identify the cause of the situation, predict what will potentially happen if a situation persists, and ultimately decide on the appropriate option used to handle the situation as it is. Developing learners to be able to make good decisions while dealing with various crises will act as a preparation for students to be capable of taking care of themselves. This would still be applicable even when there is an unfamiliar crisis in the future. Those who are capable of taking care of themselves would more likely

have the ability to take care of their family, starting a good standard of living. Last but not least, those who have the ability to take good care of their families would be anticipated to cooperate with others in caring for the society, to create a quality society.

## **2.2 Boundaries of Desired Outcomes of Education 4.0**

The development of the Desired Outcomes of Education 4.0, with the objective to produce creatively self-reliant learners, is a process-based operation constructed from a philosophy of Thailand's King Rama 9, the Sufficiency Economy Philosophy (UNDP, 2007; Grossman, 2015; Avery, & Bergsteiner, 2016; Baxter, Grossman, Wegner, 2016). The philosophy consisted of economic life guiding principles (i.e. Secularized normative prescription) from the Positive Aspect conceptual basis. An example of an actual application showed Existence of empirical evidence with a systematic view of the world, the dynamic world. Situations of the world are continuously changing with uncertainties from the connectivity of different factors in social media, focusing on both short-term and long-term results. Emphasis is placed on preventing and solving problems to survive through various crises in each period, ensuring security, and sustainability of environmental, social and economic development. This consists of 3 principles, for lifestyles emphasizing balance and sustainability, adapting to the rapidly changing, highly competitive, and socially complex global society, which are self-management on the basis of Moderation, Reasonableness, and Self-Immunity.

The application of the Sufficiency Economy Philosophy as a basis for the development of learners' Desired Outcomes of Education 4.0 enables learners to manage themselves according to the Moderation, Reasonableness, and Self-Immunity guidelines (Puncreobutr, Pongsaium, Pibool, Chanchalor, 2021).

### **Moderation**

Self-management based on Moderation is the act of carrying out tasks with moderation, not too little and not extravagant, as well as not encroaching oneself or others. Also, daily consumption of resources with efficiency and effectiveness, utilizing technology to reduce working costs, etc. There should be encouragement to raise awareness of effective work processes during the development of learners, for instance, promoting the use of resources in activities/projects in line with reality and so on.

### **Reasonableness**

Self-management based on Reasonableness is the act of carrying out tasks cautiously, rationally, and taking into account the consequences of that action.

Operations are planned using reasons obtained from comprehensive data analysis, and the impacts that may potentially occur, both in the short term and in the long term, are cautiously analyzed. Students should therefore be encouraged to plan activities and processes only after they have performed comprehensive data analysis and analysis of potential future impacts, during the development of learners. For instance, defining simulated scenarios, planning for future activities and so on.

### **Self-Immunity**

Self-management based on Self-Immunity is the act of having an adaptive lifestyle equipped for situational changes that may occur in the future, without allowing the changes to affect one's mind or lifestyle. Preparing to be equipped for future impacts, being aware of present occurrences and the negative consequences in the future, and creating preventive or corrective measures, focusing on self-reliance, in advance will continuously create immunity. Learners should therefore be encouraged to practice and prepare for future impacts during the process of developing learners. For instance, organization of knowledge, risk management planning, and so on.

The Sufficiency Economy Philosophy is therefore the basis for developing learners' Desired Outcomes of Education 4.0, to be capable of taking care of themselves, their families and the society. This is due to the fact that self-management based on Moderation, Reasonableness, and Self-Immunity act as thorough preparation for the generation of immunity to solve future problems.

### **2.3 Linkages of Desired Outcomes of Education 4.0**

Developing the Desired Outcomes of Education 4.0 or developing people to be creatively self-reliant is a difficult and time-consuming process. In order to maintain the ongoing operation, performance examination, regarding the administration of educational institutions to achieve the Desired Outcomes of Education, examination of learner outcomes, and examination of educational quality development, must all be linked and connected.

### **Administration of Educational Institutions**

In general, the administration of educational institutions is correlated to the development of learner outcomes. For instance, Good Governance administration affects the development of learners' 21st century skills (Puncreobutr, Pibool, Kitratporn, Pornputtkul, 2021; Wattanasan, Puncreobutr, Wongwai, Tangcharaen, 2021). Good Governance administration takes into account the balance of effectiveness, efficiency, responsiveness, accountability, transparency, participation, decentralization,

rule of law, equity, and is consensus oriented. It is a collaboration of all parties involved and therefore an administrative process that results in the Desired Outcomes of Education. It can also be said that educational institutions with good administrative processes will likely result in DOE 4.0.

### **Learner Outcomes**

Examination of expected outcomes for learners must include results measurement and periodic, continuous evaluation. There are numerous approaches to monitoring and determining whether DOE 4.0 and learners should be examined. Academic events are measured by KAP (Knowledge, Attitude, Performance), mental events are measured by M (Moral) and integration results of KAPM (Knowledge, Attitude, Performance, Moral). A habit immune to future problems is formed, this is also applicable for expected outcomes of learners and immunity to solve future problems, which the students will later utilize to take care of themselves, their families and the society.

### **Educational Quality Development**

The achievement of the DOE 4.0 for learners must be carried out through a quality process, that is, educational administration using KAPM techniques and Good Governance administration. The approach must be operated with the participation of everyone in the organization. This includes the planning process for the implementation, the implementation of the outlined plan, performance examination and performance improvement in every working stage. This covers quality control, quality inspection, quality assurance, and quality development, in order to create quality culture in educational institutions.

Therefore, educational institutions are required to examine the results of the administrative implementation, examine the learner outcomes formed, and examine the results of educational quality development of administrators continuously. This is done to corroborate and to confirm the learner development process, which will form Desired Outcomes of Education 4.0, to measure the success and application in further development.

### **3. Conclusion**

A chaos occurred during the Economic 4.0 phase due to drastic and rapid changes caused by globalization, technological disruption, VUCA, Covid-19, New Normal trends etc. This has resulted in mechanization where robots replace people in jobs, steadily decreasing employment rates. Therefore, the education sector, the developer of people entering the industry or entering the labor market, is required to adjust the new

objectives of educational administration. It will aim to develop people of the society, to provide education for creative self-reliance, reduced dependency on others, to generate immunity to combat obstacles creatively, to be prepared for all forms of potential changes, to be able to take care of themselves, their family, and the society effectively, no matter the situation.

In order to generate immunity for people to combat with problems, be prepared for all forms of potential changes, and to have the ability to pursue an unpredictable future career, they must exhibit 4 characteristics, known as "KAPM", which consists of K: Knowledge, A: Attitude, P: Performance, M: Morality. Learners should be able to apply all qualities to form a habit of self management, which includes being able to analyze the current situation, determine the cause of the situation, predict what may occur if a situation persists, and decide on an appropriate choice to handle the situation as it is.

The underlying foundation for the application of the "KAPM" feature to form a habit of self management, or the process used to develop self management, is to develop on the basis of the Sufficiency Economy Philosophy that consists of Moderation, Reasonableness, and Self-Immunity.

The success of developing people to create immunity, to creatively combat obstacles, to be prepared for all forms of changes that may occur, to be able to take care of themselves, their families and the society or Desired Outcomes of Education 4.0, depends on the administration of educational institutions. With regard to use of administrative principles in relation to the development of learner outcomes such as the Good Governance administration, the consistency of administrators in monitoring the learner outcomes, such as "KAPM" attributes, and habits of self-management, along with consistency in the examination of educational quality development in all working stages. This is done to cover quality control, quality inspection, quality assurance, and quality development, in order to create a quality culture within educational institutions.



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