



# Preventing Mega-Machines: Cultivating Hope in Education

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**Abstract.** Telltales of a heavily industrialized, modern education system had been forecasted a century ago, as we are slowly approaching the Mega-Machines fabled in Lewis Mumford's *The Myth of the Machine* from 1976. As we presently challenged with urgency on how to transform education from task-based to human-based one, ideas of education centralized on mankind's positive values began flourishing since the end of 1900s. Recent paradigm from Psychology called Positive Psychology, promotes one answer: Hope. This paper would seek to investigate these answers and find their theoretical and practical basis through literature review. It is found that a human-based education should let its learner pursue meaningful learning through implementation of education centered on hope. By assimilating hopeful practices (learning, teaching, and social interaction), hope proves to not only become the theoretical basis of future education, but also educating humans to remember the importance of being a hopeful and optimistic human being.

**Keywords:** Hope · Optimism · Positive Psychology · Educational Psychology

## 1 Introduction

After two World Wars, education was immediately contexted in industrialization. From a young age, people are subjected to the “conveyor belt” model of education, pursuing fully standardized and unified education which started in a kindergarten and finished in university education. Humans are statistical numbers and born workers, expected to produce the exact same competency that would contribute to society as collectivized workers.

This process is greatly illustrated in Mumford's *The Myth of the Machine*, as schools and universities turn into a mere cogwheel inside a whole mechanistic system, which is called Mega-Machines [1].

In his concept, mega-machines refer to a large, hierarchical structure of society based on power, using humans as its main component. It illustrated greatly in the Soviet era, where individuality is frowned upon and collectivism thrives. Humans become merely a cog in society, or even their industries and factories, losing grip on their personal sense and self.

We could see in modern automated education, people could achieve better grades, but severely take a toll on their human aspect [2]. Depression, anxiety, outrageous behavioral problems, low resiliency, and many other problems actually stems from an inhumane education that has nothing to do, and wants nothing to do either with its learner's happiness.

The development of modern technology is certain, and mankind would once again be challenged on how to adapt to the newest civilization under the intense utilization of modern technology and modern economic activity [3]. In other words, people should not let the pessimistic aspect of a technological advancement eclipse its benefit and potential.

Mumford added, to break the chain off of automation, education should transform and strive to foster fully realized human beings, which valued personal growth. A human-based education paradigm is a must to welcome betterment for future human beings.

The next dialogue would be: what would a human-based education look like? This question should have illustrated the greatest challenge to date, on how to actually be more human against more and more institutionalized education recently, characterized through academic monocultures, top down management structures, and institutional isomorphism [4].

In order to answer this question, we have to scientifically address education. In scientific terms, education is being studied under pedagogy. Pedagogy should possess a definition of "a science of teaching" or some sort, but in reality, it encapsulates even broader terms [5], which emphasizes different focus from different definitions. Some emphasize the teaching method, some on its research method, and even some on its aesthetic attribute of education— getting even closer to arts than of science.

One paradigm in pedagogy which could provide this answer is pedagogy of hope from Freire. Pedagogy of hope provides a way of addressing current global challenges in a way that is both optimistic and educationally challenging. This is important as being human in modern education means consciously learning and giving meaning to learning itself [6].

He perceived hope as an ontological necessity: 'We succumb to fatalism, and then it becomes impossible to muster the strength we absolutely need for a fierce struggle that will re-create the world. I am hopeful, not out of mere stubbornness, but out of an existential concrete imperative'. In his creed, Dewey proposes two aspects of education: Psychology and Sociology. This research will dive deeper into the psychological aspect of education to further propose solutions for modern education.

Psychology, which defines itself as a science of mind and behavior, stands among the main promoters of highly industrialized education, through the paradigm of Behaviorism by J.B. Watson. Under his rule, humans are reduced to a mere stimulus and response, and education exists to produce unified results. Through paradigm revolution, unconsciously Psychology seeks to give correction to its past misconceptions.

One movement in psychology that specifically addresses this problem of paradigm lies in Positive Psychology. In simple terms, Positive Psychology is a scientific study of human's virtue and strength. How a human could be viewed more positively, and having human potential, most likely lies in this newly found psychological paradigm, which was founded in late 1980s.

Humanity's strength against automation lies in promoting a sense of purposefulness and personal meaning [7]. These two concepts translate into the virtue of Hope, as the solution of this proposed thesis. Being a human comes with freedom and responsibility. In a conveyor belt-like education, there are no such things as freedom.

This research would aim to answer how a concept of hopeful education would be, in opposition of automated education.

## 2 Research Method

This research utilizes literature review methods on answering its research question. Since its object of research dwells on the conceptual realm, this research should pursue a conceptual answer, even more on its practicality.

Subjects of this literature review are Seligman's concept of positive psychology, which studies hope and other concepts related to hope, such as positive emotions, optimism, resilience, and many others. Other references including ones from Lopez and Snyder who studied hope, would also act as our references.

Research publications investigated in this research should be published between 2012 and 2022, engaged in research on hope as the main topic, related to education setting and practical problems of automated education. Research which utilizes experimental methods will act as our primary source of materials.

## 3 Result and Discussion

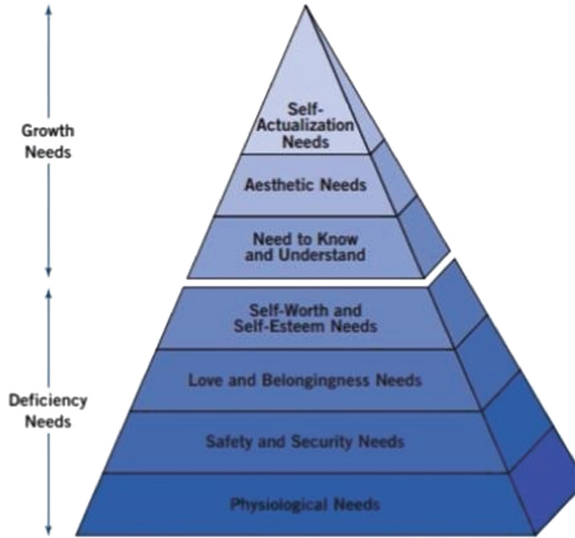
### 3.1 Positive Emotions on Human-Based Education

Positive psychology studies human happiness scientifically, in relation to the problem of automated education in automated society, it would propose positive emotional-based intervention concepts.

Emotion involves the people's judgments and reactions of situation and object [8]. Situations in education are "full of problems" already because a good education should consist of problem solving through teaching and discussion in class [6].

Emotion involves three components, physiological response, and a behavioral or expressive response [9]. Experiencing feelings of positive emotion keeps people on a wider perspective, which could massively help people to solve the problem by seeing alternative options, to make decisions. Positive emotions could be the source of a person's desirable characteristics and success in a more humanistic way, a way to pursue happiness [2].

Positive emotions come from meaningful experiences, gratitude, and self-actualization, not a mere hedonistic experience relied upon pleasures. Maslow (1980) introduced the concept of Hierarchy of Needs, which implied that humans tend to seek fulfillment of their needs, starting from the basic and then the more advanced level of needs. The needs could be differentiated by two types of needs, named deficiency needs and growth needs. This is where humane and inhumane education differs greatly from each other [10].



**Fig. 1.** Maslow's Hierarchy of Needs

Deficiency needs include physiological, safety, love and belonging, and also self esteem needs. Meanwhile, the growth needs consist of the needs to know and understand, aesthetic needs, and self actualization needs.

The difference between both of them is that one operates based on satisfaction, and the other one based on growth. When people operate merely based on deficiency needs, they get narrowed down to lesser opportunities. They start to act behavioristic like animals and avoid things that can harm or impede their safety (Fig. 1).

When people operate on growth, they would pursue long-lasting goals based on hope and optimism. This is called peak experience, or self-actualization in humanistic terms. People who actualized themselves tend to feel confident in their abilities, have a sense-of self-awareness, and interact authentically. Those things could lead a person to have life satisfaction [11] and boost their positive emotion towards life.

### 3.2 Hope

Human functions like animals at base level. At one point, it would lead to stagnation and emptiness of existence. A hope would lead to solving existential issues in education which we experience nowadays such as depression, anxiety, physical health issues, behavioral problems, and so on. Hope would drive humans to thrive beyond problems through urgency of existential meaning [12].

Snyder and Lopez proposed three main elements of hope, which are goal, pathway thinking, and agency. Goal refers to a personal goal one aims to reach. Pathway thinking refers to imagining possible strategies to obtain it. Lastly, agency means and acts more like personal drive and purposefulness behind obtaining one's personal goal. In other words, hope sheds strong purposive meaning in human-based approaches [8].

In positive psychology, meaningfulness or “a sense of meaning” stands as a grand concept in which oftentimes becomes the goal of living itself. Hope also stands as one of the strongest predictors of academic achievement and performance [13]. Not limited to those two variables, hope actually fosters long-term performance improvement, having better views on life and better health [4]. A clear prevention of a mega-machine society which is devoid of hope [1].

The theory of hope often focuses on individual matters. This is not true, in fact a systematic literature review done [14], proposes a new integrative view on hope, consisting of Why Power (intrapersonal context) and WePower (interpersonal context). Why Power is based on the theory that humans are goal-oriented and have a sense of motivation going through the pathway. WePower focuses on how social resources contribute to goal attainment. For example, sharing experiences with others can benefit in building social bonds and it also releases negative emotion, and helps people find pathways to attain goals.

In relation to achieving mindfulness, instilling hope in our education system actually benefits students in many aspects. Students would learn how to cope with stagnant situations, uncertainty, and failures, while developing rationality to choose whichever goal is worthy of pursuing [15]. The reason behind such achievement is that people with a sense of meaningfulness, realizes that they are the master of their own life.

A hopeful student would achieve more because the way of hope functions, motivates people autonomously. Students with high autonomous motivation are engaged in their academic tasks because they are perceived as inherently interesting and enjoyable (i.e., intrinsic regulation), as closely aligned with their foundational values and interests (i.e., integrated regulation), or as personally valuable (i.e., identified regulation).

Students with high controlled motivation are engaged in their academic tasks because they want to avoid feelings of shame or guilt due to failure or want to experience better self-esteem due to success (i.e., introjected regulation) or because they want to receive a reward or avoid a punishment (i.e., external regulation) [16].

Strategies on instilling hope in students including hope-finding, meaningful social interactions, between students and teachers, even more between all residents of schools.

Hope was the only psychological construct we examined that consistently predicted academic performance above and beyond educational history and the other predictors. Furthermore, hope was the only psychological variable that consistently predicted enrollment. And graduation status when controlling for educational history. Together these results indicate that hope, academic self-efficacy, and engagement may all be associated with early academic outcomes to some degree, but that hope is the psychological variable that has the most robust relationship with academic performance and retention [13]. Hope has found to possess a strong relationship with optimism and realism.

What does being an optimist or having optimism means? [8] defines that there are three types of motivation. Optimism is a motivation that things will get better in the future. Pessimism based this motivation on how things will get worse later.

By definition, it is an easy choice to make every person an optimist based on our humanistic agenda. The truth is, there lies a third option, which is being a realist. A center option, which operates based on neutrality of reaction. Things may get better or worse, but we can choose to carry out life rationally. By incorporating this tactical aspect of a

rationalist, an optimist could become a better optimist by being an optimistic-realist or simply follow realistic-optimism, and this is the final concept Diener finally proposed.

### 3.3 Best Practices in Hopeful Education

Putting theory into practice becomes a challenge in everyday life. The understanding about the effect of positive value on well-being, productivity, and achievement bring a concern of implementing positive psychology in various settings, including educational settings.

As noted earlier, hope draws a positive effect on student achievement [2, 13]. Drawing from the theories of hope and best practice research, these strategies can be done for increasing hope on university/college students:

#### 1. Goals

Students need to define and understand their goals in learning. This strategy helps them find meaning so that they've motivated to go through whatever is in the process of achieving the goal. In addition, goal-setting can serve as a guide to reach the target and facilitate thinking of alternative solutions. Lecturers can convey the purpose at the beginning of the lecture or when heading to new material, along with its urgency and relevance to reality. Clear and achievable goals help students to have a hope of success in learning.

#### 2. Agencies

Agency in hope is the motivational sense to achieve the goals. As high as any expectations regarding results are, if there is no motivation to make an effort, it is going to be wishful thinking. To develop agency, lecturers can give constructive feedback and focus more on their strengths, rather than their faults and mistakes. Other than that, social interaction also plays an important role in fostering hope, as humans learn emotion from its social surroundings. One cannot foster positive emotions in students, as a teacher or lecturer, without being able to foster it on themselves first through positive communication.

Giving positive affirmation is not only limited to act as a cheerleader to students but also as a mental foundation, an "agent of hope". When a teacher opens up dialogue based on hope, it builds up a positive social foundation inside the classroom. Having self-disclosure sessions also help students to reflect on their traumatic experiences or past mistakes, giving them a chance to learn how to hope again by their own hands.

#### 3. Pathway

Pathway relies on how students learn to identify possible routes to our goal, and decide whichever optimal route to reach it. This aspect of hope actually requires training instead of simple reflections and communication. On how to actually integrate this aspect of learning, is through classroom learning. Giving out learning materials in the form of problems to solve (such as in problem based learning, project based learning, and group projects) also actually benefits the growth of hope in classroom settings. Other than fulfilling curiosity on how problems can actually be solved, problem solving actually trains bravery on students as their own future asset. This also trains them to be rational-optimists.

## 4 Conclusions

It is found that hope stands as a solution to some of our current hopeless, bleak educational practices which could be made better when students experience not only cognitive and competency growth, but also personal hope in the form of optimism and sense of purpose. Best practices drawn from studies on application of hope in educational settings, was found and benefits many in its application.

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