Introduction

- Schools are crucial institutions that build the society.

- A quick reform in our preK-12 grades education is urgent to better prepare our future generations to excel nationally, internationally and to adopt dealing with **AI algorithms**.

- Despite the many reports calling for the urgent reform since 1983, the acts are extremely slow and perplexed.

- Our schools, our generations, our societies are calling for a speedy rescue that certainly and only the scientific society of higher education can fix with ease and no time.

Reports Calling for K-12 Reform in Education

- A Nation at Risk: The Imperative for Educational Reform.

  Report to the Nation and the Secretary of Education United States Department of Education by The National Commission on Excellence in Education April 1983

- PCAST: President's Counsel of Advisors on Science and Technology.

Report to the President " Prepare and Inspire: K-12 education in science, technology, engineering and math (STEM) for American's Future" September 2010. Executive Office of the President.

- The Competition that Really Matters:

Center for American Progress. The Center for the Next Generation: 2012.

Begging Language of the Reports

- The reports call for a reform that is:
    - critical,
    - imperative,
    - urgent,
    - “before it is too late”,
    - labeled as “Help wanted”.

- No timely progress.

- A movement in the wrong direction.

Some Proposed Solutions

- Renewed leadership in education.

- The needs for a new structured mechanism for experts and stakeholders.

- Change the leadership for reform to the departments of sciences in higher education.

- ARPA-ED:
  Advanced Research Project Agency for Education.

Recommended in 2010. In 2023, Is it finally happening?

USA and the Global Economy

- The U.S.A is the world's wealthiest nation, one that invests more in education.

- Competition/ Equity issues between students in the world and the students of the U.S.A.

- World models of Success:
  China, India, Finland, Germany, United Kingdom, Singapore, Switzerland. (Figure1)

China and India

- Focus on strong participate in the global economy by Improving the educational outcomes for children.

- By 2030, China will have 200 million college graduates—more than the entire U.S. work- force.

- In 2017 India graduated 20 million people from high school or five times as many as in the United States.

- India's Integrated Child Development System: pre-school education system, 38 million children under six, while 3.5 million children.

Finland

- Students have consistently outperformed all other European and North American countries in math, science and reading proficiency.

- Teachers spend 40% less time in classroom setting per year than their U.S. counterparts.

- Focus on the knowledge of teachers. Teachers must earn a Master degree in the content area.

- Encourage top students to become teachers. 1 in 10 applicants is accepted.

Germany and United Kingdom

- Germany's "dual education" system and "National Assessment"
    - Funnels 2 million students into three years of apprenticeship training in 400 occupations.

- United Kingdom's universal free preschool.

U.S.A. Issues with Education

Clear vision but missing the right leadership

Biggest Factors:

- Leaderships at the national, states, intermediate school districts, districts and schools need re-evaluation.
- Better coordination between National Science Foundation (NSF) and US Department of Education is needed.
- Teachers lack advanced knowledge of the subject matter they teach.

Other Important Factors:

- Equity: Community drives the schools.
- Allocation of funds: Buildings, Classrooms, Food, salaries.
- Curriculum:
  - Elective classes (Chemistry, Physics).
  - Biggest learning gap at the middle school level.
- Voices of the students in their education.
- Administration and Teacher’s Evaluation.

Results

While U.S.A. is in need for the talented students, our colleges and universities are getting only the survivors of our K-12 educational system.

U.S.A. Potentials for Speedy K-12 Reform

- Best universities (top 150 of the 500 worldwide).
- Scientific higher educations are experts in using potentials to grow the world's best-skilled, most innovative, and most dynamic workforce.
- The Federal Government has not historically made a good use of the potential contributions of the STEM communities in higher education.

  STEM: Fields of science, technology, engineering and math.

Next Generation High Schools

Long overdue prototypes:

- Santa Monica High School Discovery Building in California (2021).

- Kirkland Ranch Academy of Innovation (KRAI) in Tampa (2023).

STEM Communities in Higher Education

- The ball is in the hands of STEM Communities in Higher Education to shoot. There is no time to miss anymore.
- Simplify the universities model and bring it to schools (mini universities). Our students are capable.
- This system is struggling and desperate for the help of scientific higher education that can do easily and fast.
- Please stretch a hand and save our generations.

Conclusion

- Experts in the U.S.A. are aware of the problems and they proposed promising solutions. We just need to act.

- “ American have never shrunk from challenge or responsibility. We have always committed to ourselves and to our children, the next generation, to take on anything that makes us stronger. Another moment is at hand. We believe we are up to the task”.

Matt James, president and CEO. Center for the Next Generation.
Neera Tanden, President Center of American Progress.