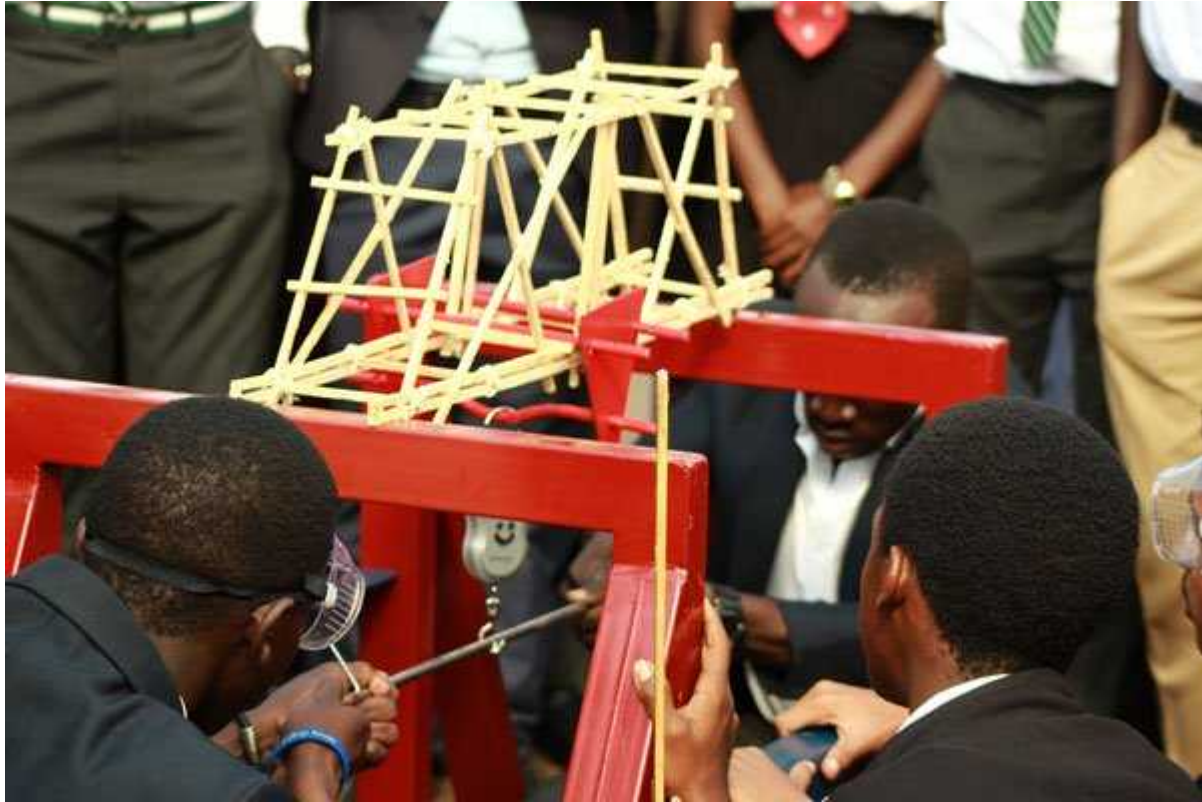


Nature of work is changing so should your skills

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Students of Viva College in Jinja showcase a prototype of a bridge they made during their science fair last year. FILE PHOTO

In Summary

We are yet to experience the 4th Industrial Revolution or Industry 4.0 as it is otherwise known and although it will create jobs for all, it is time for everyone to upgrade their skills sets if they are to fit in, writes *Avron Herr*.

Advertisement
By Avron Herr

Today, there are concerns that the relationship between people good at Science, Technology, Engineering and Mathematics (STEM) jobs and those who are not is under strain as structural change once again disrupts employment levels and occupational patterns. Yet, even those who are not good at STEM are the cornerstone of our economic and social lives. They give people meaning, self-respect, income and the chance to make societal contributions.

Africa has one of the highest youth unemployment rates in the world. The impact of rapid technological advancements in the world of work compounded by our poor rankings internationally in Mathematics and Science raises questions as to how Africa (and indeed other developing countries) are to deal with the skills demands required by careers 4.0 (the current trend of automation and data exchange in manufacturing technologies). The internet of things (IoT) has gradually infiltrated our space.

Advancement

As artificial intelligence advances, the capacity of machines to do traditionally people centred jobs, the nature of work as we know it, is changing. People without the skills sets to work on or with these machines will find it increasingly difficult to find employment.

Industry 4.0 is already having noticeable implications on the world of work. The nature of work itself is changing, and with it, the skills and aptitudes needed. The World Economic Forum predicts that 41 per cent of all work activities in Africa are susceptible to automation and that 39 per cent of core skills required across occupations will be wholly different by 2020. (Industry 4.0 is commonly referred to as the fourth industrial revolution.)

Good times ahead

It is our firm belief that the 4th Industrial Revolution is to provide Africa with its greatest opportunity. This article suggests that the introduction of technology will increase job opportunities rather than reduce them particularly if government supports a capital-intensive manufacturing strategy.

In other words, countries with high employment levels will be more negatively affected than countries with low employment levels as more people will be displaced by technology.

Technology allows all countries to compete on a level playing field. A robot that manufactures car doors in Uganda for example will produce the same quality car doors as the same robot that manufactures car doors in let us say China.

The difference is that Uganda already has the iron ore to produce car doors and so can do so cheaper than the country that needs to first buy iron ore. A capital-intensive manufacturing strategy will, therefore, increase the number of manufacturing plants thus creating good quality jobs but more importantly, it will also stimulate employment within the up and down stream services.

This is explained best in the smiling curve conceptualised by Stan Shih, the co-founder of ACER computers. He developed the smiling curve to best explain the manufacturing process flow. He probably did not know at the time that the smiling curve would give a lot of insight into career guidance for the 4th Industrial Revolution.

The smiling curve states that manufacturing is a very small part of the production cycle. That before the product is manufactured, there are a lot of work activities that first need to happen and after the product is made, there is more work to be done. These activities create far more jobs than the manufacturing process itself.

Everyone counts

So, whilst a lot of the 4th Industrial Revolution jobs will be in the manufacturing process, many more will be in the upstream and downstream processes. It is important to mention here that most of the jobs that are needed before and after manufacturing will not necessarily require STEM skills but rather digital skills. Whilst STEM skills require a knowledge of Mathematics, Physics, digital skills require other aptitudes such as fine motor coordination, cultural fluidity and communication skills, for example.

This means that as the 4th Industrial revolution advances manufacturing, it will also increase the number of non-STEM careers. But it also does not mean that the 4th Industrial revolution will not affect these non-STEM jobs. It will! It will change the way these jobs will be done.

It is very important therefore that youth today do not become despondent if they do not possess the aptitude for STEM subjects. The reality is that many more careers will evolve that require the ability to use technology rather than create it.

Herr is the chief executive officer of PACE Career Centre and Gostudy, founding member of the South African Career Development Association and the East Africa Career Development Association.

Industry 4.0

According to Wikipedia, Industry 4.0 is a name given to the current trend of automation and data exchange in manufacturing technologies. It includes cyber-physical systems, the Internet of things, cloud computing and cognitive computing. Industry 4.0 is commonly referred to as the 4th Industrial Revolution.