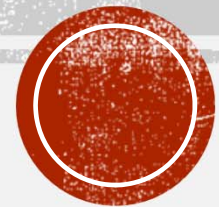


Mainstreamed AI and the FIRE

Implications on Education and Training in the Philippines



Arnulfo P. Azcarraga, Ph.D.

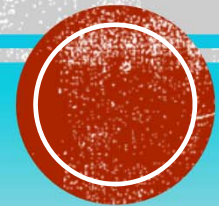
STC Pioneer Professor of Computer Science

De La Salle University

Part 1

FIRe and the Cyber-Physical World

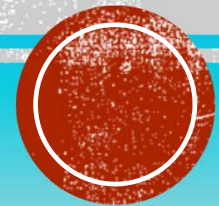
Prepare students for a predictably uncertain future



Part 2

Mainstreamed AI

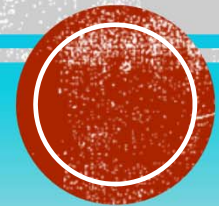
Self-regulated, collaborative learning : disrupted classrooms



Part 1

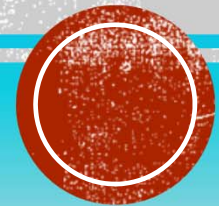
FIRe and the Cyber-Physical World

A Sneak Peek



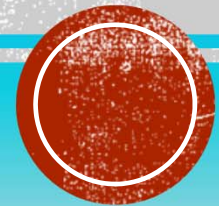
All roads lead to the web

New industries, new services, new applications



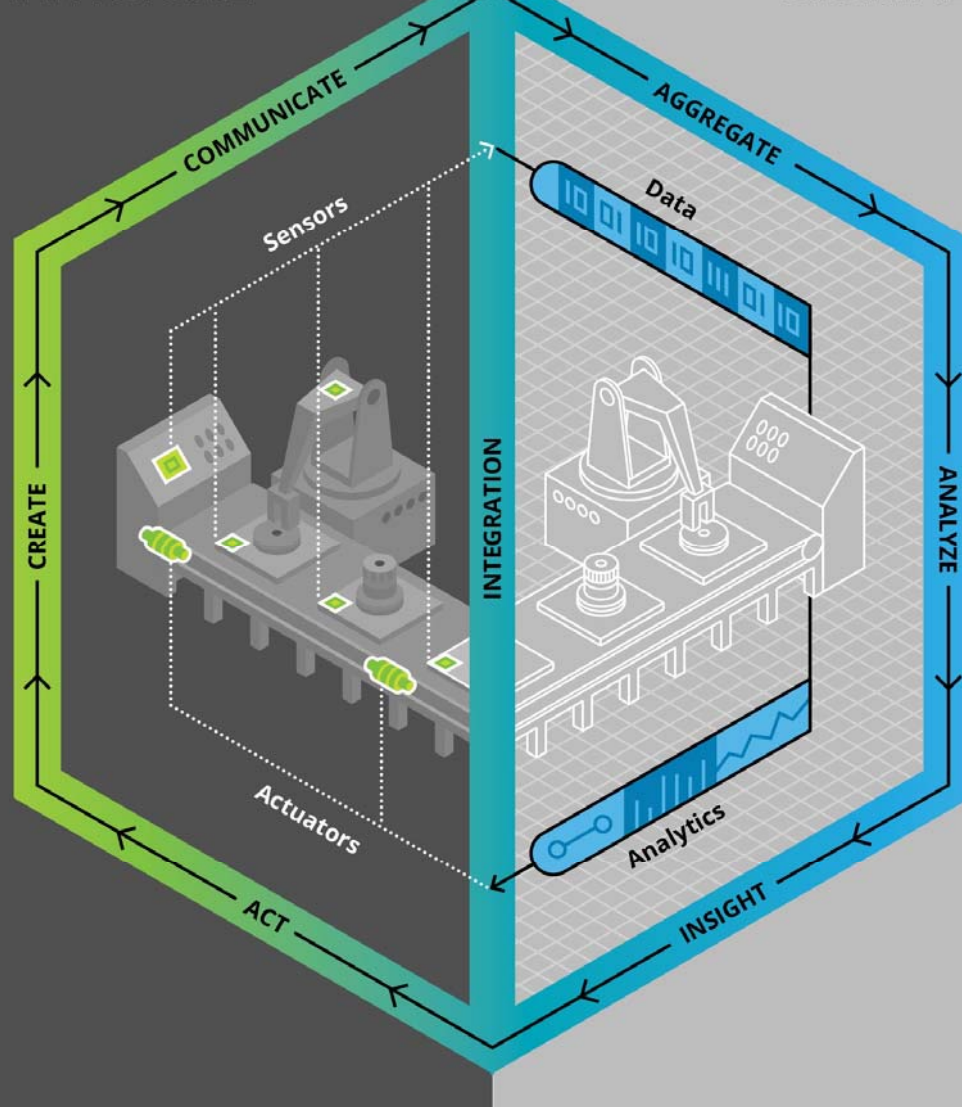
Cyber-infrastructure connects people to their gadgets

Sensor signals & real time control signals to/from cloud



PHYSICAL

DIGITAL



Digital Twins : made possible by IOT, Cloud Computing, and AI

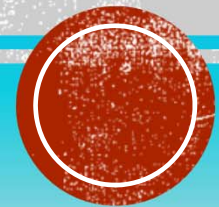
enhanced by 5G, AR/VR, ...

<https://www2.deloitte.com/cn/en/pages/consumer-industrial-products/articles/industry-4-0-and-the-digital-twin.html>



Mainstreamed AI

Affect society at an unimaginable scale. Exciting. Scary.



Dire Employment Scenarios

1. Displacement of workers, particularly call-center operators
2. Mismatch between pre-4.0 graduate skills, and industry needs
3. Flight of prospective companies, and departure of large manufacturing plants

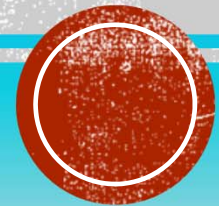




<http://ntredessociales.com.uy/debemos-dejarlo-todo-en-manos-los-bots/>

Build-in flexibility and relevance in the college curricula

Electives instead of “packaged-for-the-market” programmes

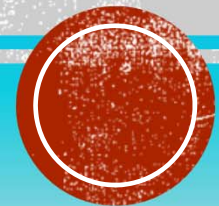


Focus on one Learning Outcome

Learn new things by themselves

Solid fundamentals in Mathematics, Statistics, Computing,
Electronics, Machine Learning / AI

Capstone projects to work on real problems



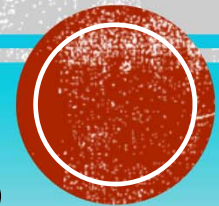
Platform for Big Data applications

Problem-based learning : using live, real, voluminous datasets

DOST or DICT : curate, collect, pre-process government data

Promote the use of anonymized datasets in agencies, schools, R&D institutions

Set-up a **Computational Platform for Big Data applications**



STEM Education all the way to college

Model STEM curricula from selected STEM schools

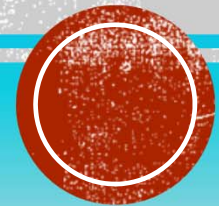
One large PSHS-SHS : National Senior High School for Math and Science

Seamless transition from PSHS-SHS to colleges and universities



TechVoc (TESDA) in the limelight

Focus on 99.9% of 1M students entering senior high school each year
More of TESDA in CHED



FIRe and the Cyber-Physical World

Prepare students for a predictably uncertain future

Mainstreamed AI

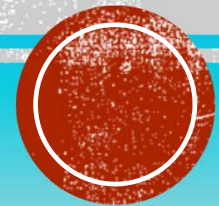
Self-regulated, collaborative learning : disrupted classrooms



Part 2

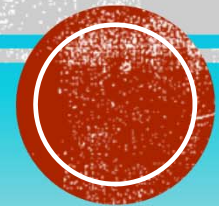
Mainstreamed AI

A Sneak Peek



Virtual Humans connecting among themselves

We need to share the cyberworld with our digital creations

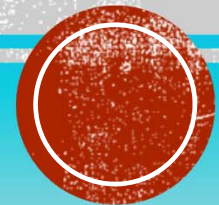


Intelligent Digital Tutors

Merging the “teacher” and the “book”

Patient, Never Rude, Neutral accent, Correct English,...

Accurate and Update learning materials – with knowledge of learning styles of children



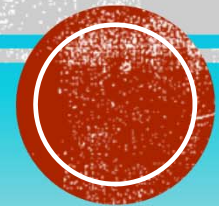


Not whether possible or not ... more of "when?". Are we ready for intelligent digital tutors?



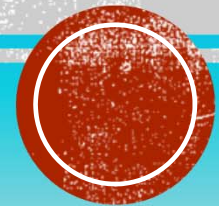
Sensors in the classroom

Is any kind of learning happening?



Heightened Experiences in VR/AR/IR

Winning back children to schools? Or a distraction ...





<https://www.pebblestudios.co.uk/learn/early-virtual-reality-be-dangerous-for-kids/>

<https://gsati.com/our-blog/2017/5/16/how-virtual-reality-can-improve-learning>

Assess viability & readiness

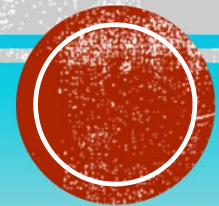
Educational digital content – a niche?



Social media, in and out of school

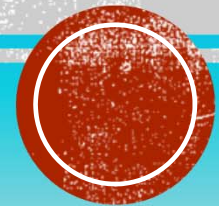
Learning will be self-regulated and highly collaborative

Overhaul of training for teachers and educational leaders?



Analytics on Learning & Learners

From Industry 4.0 to Learning Spaces 4.0



Smart learning spaces in smart cities – AI, 5G RAN, cloud computing, IOT, Big Data



<https://www.einfochips.com>



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Digital Twins in Industry 4.0 same for learning spaces

<https://www.dotmagazine.online/new-work-and-digital-education/ICT4D/smart-campus-merging-smart-city-and-smart-home-in-education-for-digital-natives>



Mainstreamed AI and the FIRE

THANK YOU

