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University of Tsukuba

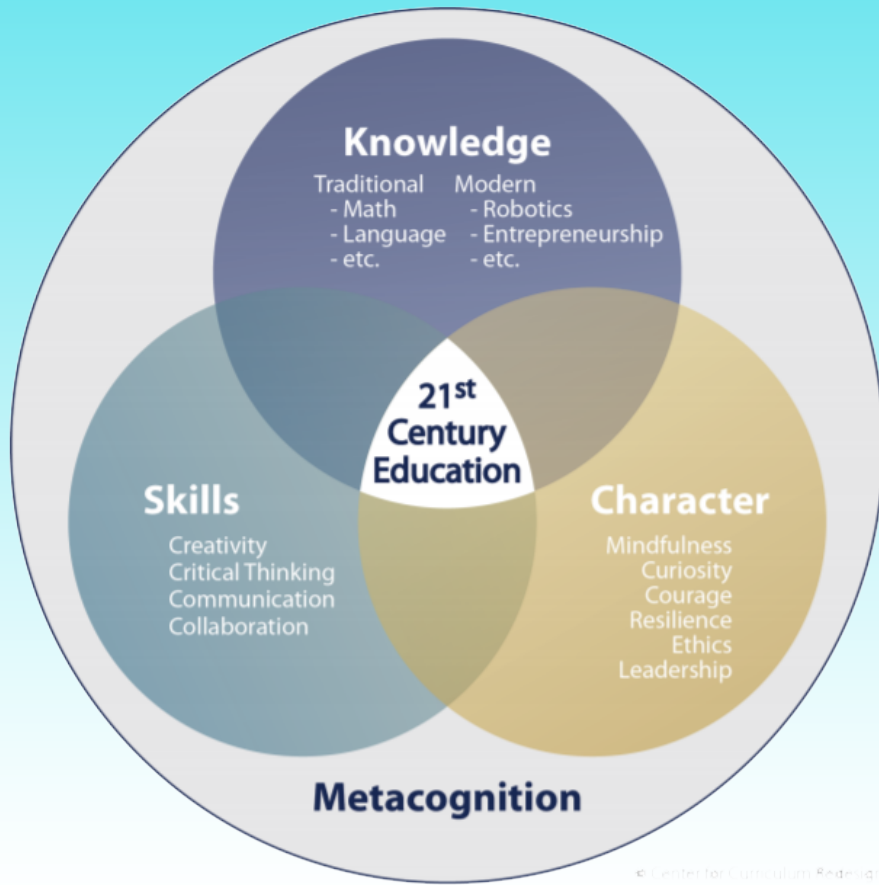


Curricular Imperatives in Developing Next- Generation Leaders of the Agriculture Sector in Southeast Asia

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Japan





- **Knowledge** is acquiring information, concepts, and principles on a particularly subject matter.
- **Skill** refers to the ability to apply the information in a given context.
- **Character** describes how one engages with and behaves in the world.

Societal Impacts of the 4th Industrial Revolution



- Defined by massive changes and disruptions in society brought about by the fast-paced technology development and innovation
- Characterized by unpredictable patterns, uncertainty, complexity, and ambiguity (*Reeves and Reeves , 2015*)

Challenges Posed by IR 4.0



- Reduced manpower due to automation
- Information technology security issues
- Reliability and stability
- Reluctance to change

Character Education *(Lickona, 2009)*



Genuine deliberate efforts to help people understand, care about, and act upon core ethical values.

Role of Character Education in IR.4



- Arouse creativity among learners to address new ways of thinking and doing things
- Develop a generation of entrepreneurs who are innovative, resilient to change, and collaborative.

PAST



INCREMENTAL BENEFIT OVER
PREVIOUS GENERATION



The
lough



GMOs



Machinery
& GPS
Tracking



21ST CENTURY



1980s



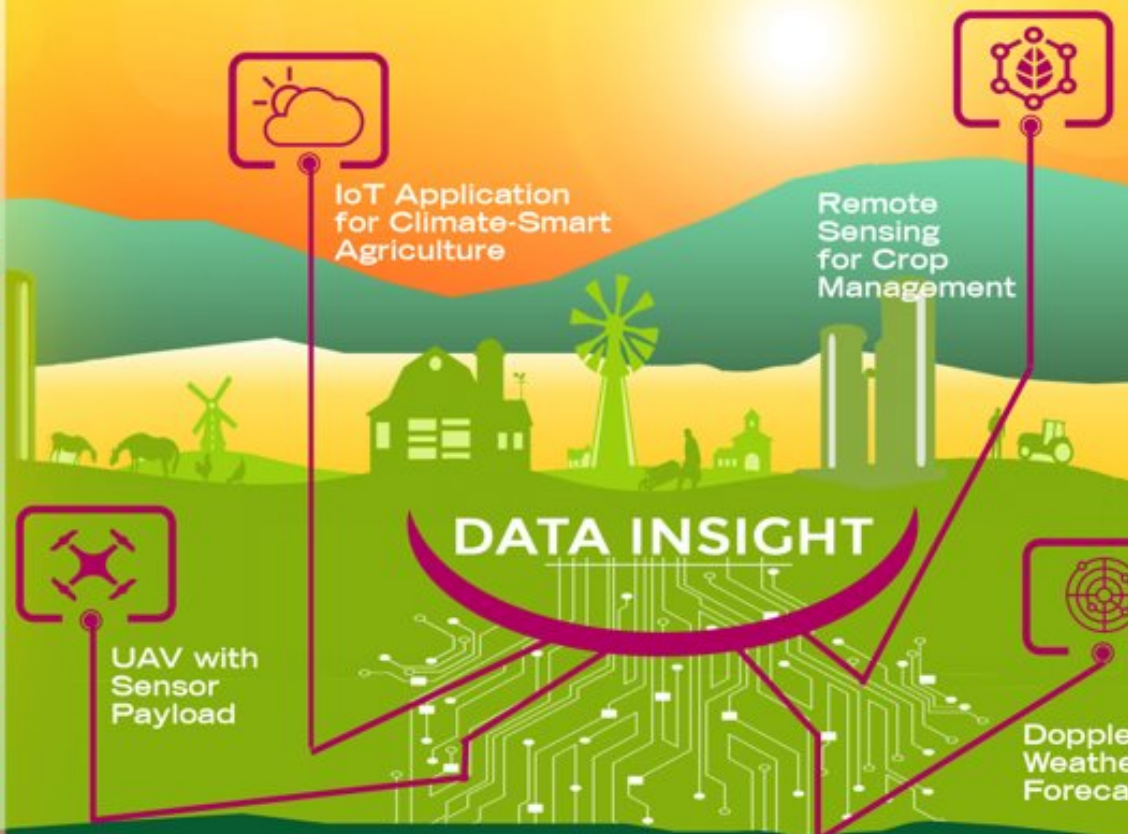
~2008

PRESENT



FARMER FAMILY
(overwhelmed by data)

FUTURE



**NEW GROWTH POTENTIAL
FOR FARMERS**

Pillars of a Modern Agriculture



1) Organizing and managing agriculture as a business

- Transform small farmers into entrepreneurs
- Overcome problems of scale through concentration in key production areas, through industry-wide clustering, strengthening of cooperatives and farmers organizations

Pillars of a Modern Agriculture



2) Changing the social structure through asset reform

- Strengthening the role of agriculture for poverty reduction
- Farmers and fishers empowerment
- Asset reform – transfer of property or usufruct rights to assets to farmers and fishers
- Stimulate investments among owners/rights holders to make assets productive

Pillars of a Modern Agriculture



3) Nurturing values respecting nature and community

- Perspective of agriculture as a way of life
- Not only materials improvement and power changes but also preserve what is good in culture
- Love for nature; enjoying the land and waters, preserving them for future generations
- “soul” of agriculture



CHARACTERS FORMATION FOR NEXT- GENERATION LEADERS IN AGRICULTURE 4.0

(Center for Curriculum Redesign, 2015)



MINDFULNESS

Purposefully
paying attention to
the environment
and the people
around; self-
awareness

CURIOSITY

Continuous desire for learning; drive for innovation with a high degree of enthusiasm and open-mindedness; ability to engage in conceptual and discursive innovation allowing for the creation of new ways of working, thinking, deciding and operating





RESILIENCE

Perseverance and resourcefulness to overcome adversities; adaptability to change

FORTITUDE

Persistence to act
despite
uncertainty;
capable of taking
risks (e.g.
entrepreneurship)





ETHICS

Ability to identify and conduct behaviors that are morally upright and better for individuals and society

LEADERSHIP

Relational process of empowering people to collectively achieve positive change with a high level of purpose and moral *(Burns, 1978)*



HOW TO INCULCATE CHARACTER?



Curriculum

- Incorporating character education in all subjects and aspect of school life

Pedagogy

- Experiential learning
- Communicative context specific teaching approach
- Promote a collaborative learning system (teacher-student-parents) with the aid of technology

Curricular Development for Agriculture



Characteristics	Major	Minor
Guiding Values	<ul style="list-style-type: none">• Interdisciplinary depth of knowledge• Experiential learning, integrating theory and practice• Systems thinking• Skill development, practice and social skills• Linking real-world with classroom• Community building, on and off-campus• Adaptive curriculum management	<ul style="list-style-type: none">• Ecological stewardship and praxis• Strong local economies• Healthy people and communities food security• Collaborative teaching• Experiential-integrative learning• Civic engagement

Curricular Development for Agriculture



Characteristics	Major	Minor
Curriculum Theoretical Frameworks	Social constructivism, experiential learning, transformational learning, critical theory, participatory learning, action research	
Experiential teaching activities	Fieldwork, applied production classes, internships, applied research projects, farm field schools, community partner fieldwork, problem-based inquiry	
Evaluation	Competency self-assessment, peer reviews team performance, reflective essays, portfolios, critical reflections, peer/self-assessment, faculty-student-community-industry partner evaluation	

SEARCA's SCHOOL + HOME GARDENS PROJECT



SCHOOL + HOME GARDENS PROJECT



- Enlightens national governments and other relevant agencies and institutions on the potentials of school gardens to address nutritional needs of children while serving as a viable alternative education facility for teaching and promoting an appreciation of agriculture at a young age.



LESSONS FROM THE S+HGP



1. Experiential learning allows for deeper appreciation of agriculture and good nutrition among children. It develops in them a sense of responsibility to share what they learned in the school garden which they think will benefit their families and communities.



LESSONS FROM THE S+HGP



2. Parents' involvement in the project helps sustain the Project while also providing an important link between the household and the schools towards a collaborative learning experience for students.



LESSONS FROM THE S+HGP



3. Children show innovativeness and resourcefulness in designing their school and home gardens in consideration of their immediate environment and limited resources.



LESSONS FROM THE S+HGP



4. The Project instilled among children the positive impact of good nutrition, the commitment to work together, and the value of hard work.





In age of Industry Revolution 4.0, the ultimate goal of education (character education) is to build human resources capable of initiating and leading development and social transformation that is *better, fairer, and more humane*.

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