

# Systemic, Praxis Immersive, Convergence Education (SPICE) in Higher Education for the 21<sup>st</sup> Century and Beyond

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We live in a rapidly changing world that requires higher education institutions (HEI) to empower students to cope with unprecedented demands and challenges in the workplace and various aspects of life. To this end, Systemic, Praxis Immersive, Convergence Education (SPICE) is proposed whereby HEI:

1. Adopt *differential convergence education* in their majors and curricula that brings together traditionally distinct disciplines in ways that honor and spare the identity and relative integrity of each discipline, but that recognize the interdependence of disciplines in specific respects and the need of any discipline to benefit from other disciplines in all foundational, methodological, and epistemological respects at any time and place, and that require realistic, but urgently needed, changes that HEI offering traditional majors and used to discipline-based education can afford in all pedagogical, structural, and operational respects.
2. Immerse students in *insightful, culturally rich praxis* whereby theory and practice go hand in hand for mutual benefit and continuous refinement and development, and where practice brings together research and entrepreneurship, and thus academia and various productive sectors at the local and global levels, so that HEI students, faculty, and staff get first-hand, hands-on, minds-on experience in the job market, benefit empathetically from a variety of social and market cultures, and subsequently allow their institutions and productive sectors to thrive in ways that they could not enjoy separately and independently of each other.
3. Operate, and design and deploy curricula and praxis, under *systemic paradigms* that readily bring about educational convergence along with significant and efficacious transactions within HEI and between these institutions and productive sectors, and, most importantly, that bring about students with *systemic profiles* of well-rounded, global citizens with *progressive minds, productive habits, profound knowledge, and principled conduct* (4P profiles), and thus graduates empowered for self-fulfillment, lifelong learning, and significant contributions to a development that is dynamically sustainable throughout the 21<sup>st</sup> century and beyond of their own communities, their nations, and the world at large.

## International Conference on the Future of Learning and Skills

Dubai - UAE

May 29 – 31, 2021



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## Overview

**New paradigms for a turbulent, rapidly changing world**

**Differential convergence education**

**Praxis & required ecology**

**Systemism for optimal governance and pedagogy**

➤➤➤ SPICE



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## Turbulent era

### Unforeseen crises:

Pandemics, conflicts, downfalls (economic, social...)

### Unprecedented challenges:

Job market, education, everyday life

### Unpredictable future:

Individuals, communities/nations, humanity

***Inability to cope in timely & efficacious manner***

**»»» Paradigm shift in all sectors & at all levels**



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## Toward new paradigms

### Despite uncertainties:

### Relative constancy:

Individuals' cognition and behavior  
Collective interactions / social constellations  
Progress / evolution courses  
Success and excellence dispositions & skills

**»»» Universal patterns / regularities in space & time**

### Adaptability to environmental changes:

Plasticity (structural adaptation)  
Flexibility (functional/operational adaptation)

**»»» Success landmarks to emulate**



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# Convergence

## Education state & outlook

### *It all begins in education*

#### **Current state:**

Mostly outdated governance & pedagogy  
 Dominated by cognitive myths & misconceptions  
 Disconnected from 21<sup>st</sup> century realities  
 Reforms: short-lived, unsustainable, outpaced

➤➤➤ **Graduates not ready for the workplace / daily life**

#### **Alternative state:**

Mind & brain based pedagogical frameworks  
 Market related tracks, majors, and competencies

➤➤➤ **New concepts of student, teacher, school, HEI, curriculum, textbook, learning platforms, etc.**



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## Educational paradigms

**From discontinuity, discreteness, & isolation to:**

**Continuity:**

Across cycles & secondary – tertiary education  
 Smooth transition to upper levels & Mobility  
 Lifelong learning / CPD

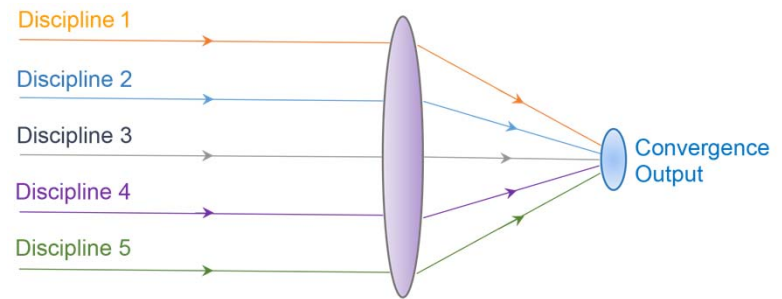
**Convergence:**

Among traditional disciplines  
 Between general and technical/vocational education

**Partnership:**

Schools – HEI – Market (All sectors) / PPP  
 Within and across communities & across nations

## Convergence education



## Convergence modalities

### Criteria:

- Scope of work
- Professional groups & Collective work
- Bridging & Framework/Paradigm(s)
- Epistemic & methodological adaptation
- Output novelty & disciplinary implications

### Modalities:

- Pluridisciplinarity    ➔ *Conservative cooperation*
- Multidisciplinarity    ➔ *Conservative coop + refinement*
- Interdisciplinarity    ➔ *Collaboration / Hybrid framework*
- Crossdisciplinarity    ➔ *Creative collab / Emergence*
- Transdisciplinarity    ➔ *Innovative collab / Transcendence*



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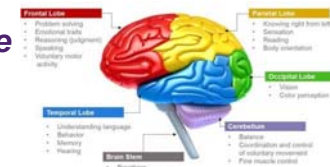
## Differential convergence

**Honoring every discipline identity & sovereignty**

*No supervenience, no fusion, no absolute integration*

➤➤➤ **No bloody revolution in HEI**  
*used to discipline-based education*  
 Affordable stretch of stakeholders' comfort zones

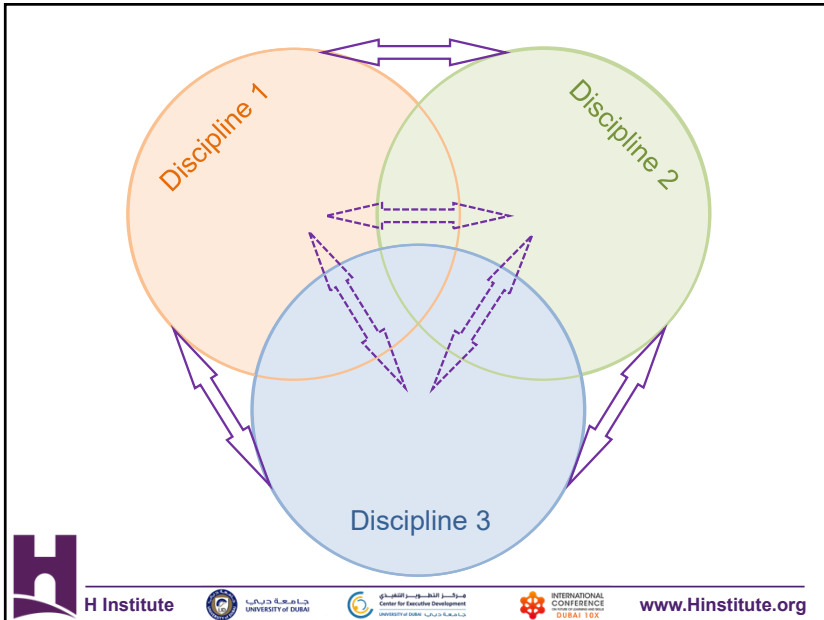
➤➤➤ **Cognitive consonance**  
*with human mind and brain*  
 Discrete specialized brain areas  
 linked through association areas  
 under PFC executive functions  
 & modulatory systems



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Praxis



## Praxis

**Theory**  **Practice**

**Cross- / Trans-disciplinary convergence in HEI:**

Among existing courses in existing majors  
New courses / New majors

**Creative / Innovative adaptation of theory and practice:**

Episteme: Refined / New conceptions  
Methodology: Refined / New rules & processes  
Axiology: Value system

 **Dynamic, flexible courses / majors**  
*adapted to student & community/market needs*



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## Practice

**Research:**

Project-based courses

**Entrepreneurship:**

Not just internships  
HEI – Market contracts (all sectors)

**Cultures:**

Places of significantly different customs and values

 **Practice 3D Convergence**  
*taking advantage of best practices*  
*under propitious paradigms*




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## Praxis ecology

**HEI  Market** (All sectors in society  $\supset$  government)

**Continuous market needs analysis & forecast:**

- HEI as prime investigators
- HEI courses and majors revised continuously
- Continuous feedback to schools for orientation

**HEI – Market HR, shared student longitudinal monitoring:**

- Praxis track records at HEI
- Career track records in the workplace
- Success and excellence profiles

** Continuous praxis evaluation & regulation**  
with implications to both HEI and Market

## Praxis ecology

**New Inter-HEI spirit**

**Open borders:**

- Across campuses / cultures / countries
- Shared classrooms via internet
- Exchange faculty & students programs

**HEI consortia:**

- Inter-HEI cooperation rather than competition
- Joint R&D hubs (open to local schools)
- Joint market ventures

** Mutual respect & trust**  
for a win-win cooperation

## Praxis ecology

### ***New HEI governance concepts***

#### **HEI – Market interface:**

- Dedicated office & officers
- Continuous exchange of information
- Timely feedback for timely actions

#### **Inter – HEI interface:**

- Dedicated office & officers
- Continuous exchange of information
- Timely feedback for timely actions

**»»» Shared responsibility (local/global)**  
*for unmatched HEI & Market benefits  
& dynamic sustainable development*



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# Systemism

## Systems

***We are, and we live in a world of, systems***

Any entity

whether in the physical / social world  
or conceptual realm of humans  
is either a system or part of a system

A system is a closed or open / adaptive  
ordered unity / totality of inter-related entities  
(unless elementary)  
the properties of which depend on its constituents,  
individually and as interconnected whole  
that serves / performs specific purposes / functions  
under specific conditions / environment



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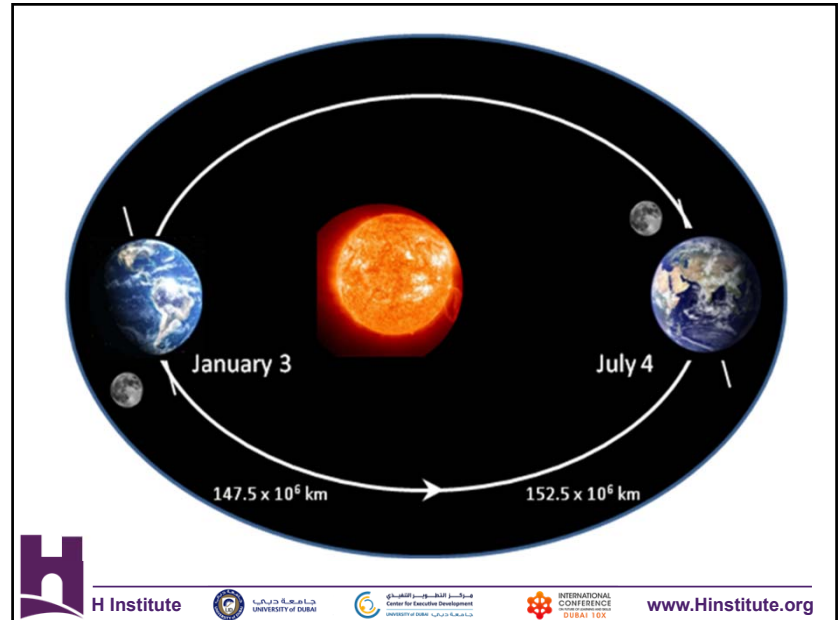
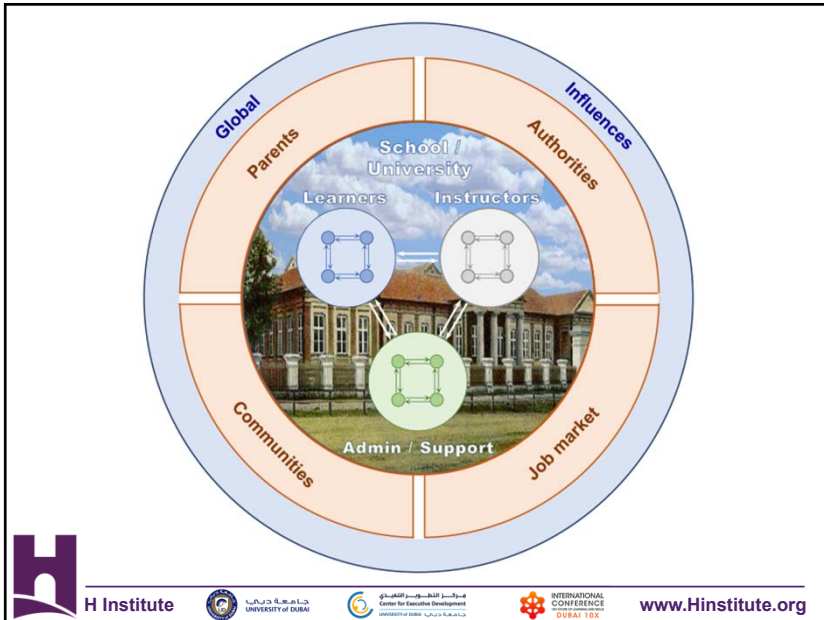
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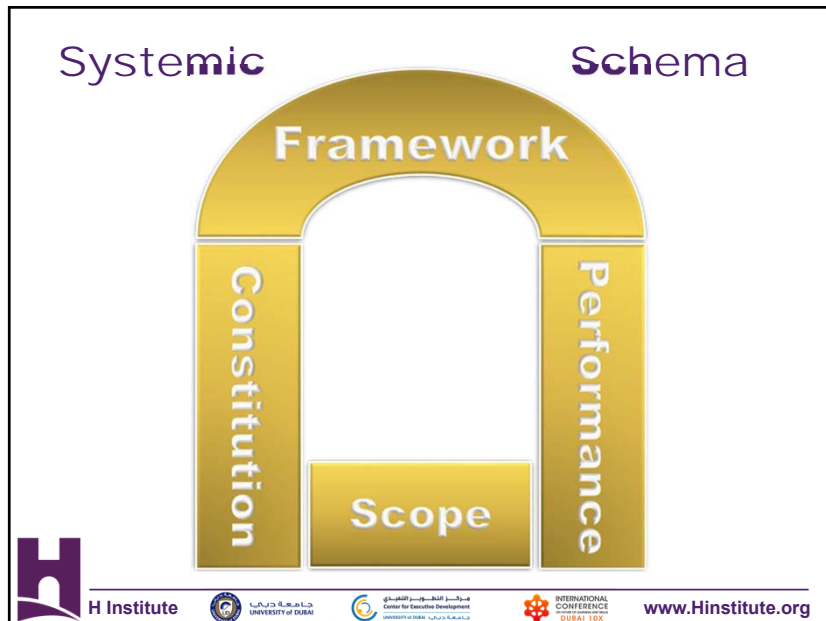


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## Systemic mindset & education

### ***Think & work under systemic paradigms / frameworks***

Any discipline / course  
 is about a limited number of physical/conceptual  
 systems defined with the systemic schema

Each course:

Praxis: systemic theory + systemic practice

Systemic competencies:

Episteme + Skills + Dexterities + Dispositions/Values  
 to accomplish particular life-related tasks

Convergence:

Cross- / Trans-disciplinarity in HEI

## Systemism advantages

- Order / Patterns in our thoughts, actions, and the universe
- Dynamic Stability & Efficacy
- Synergetic functions
- Emergent properties & products
- Ontological–Epistemological consonance
- Convergence readily made possible
  - ❖ Intra– / inter–disciplines
  - ❖ Academic – Technical / Vocational fields
  - ❖ Theory – Practice



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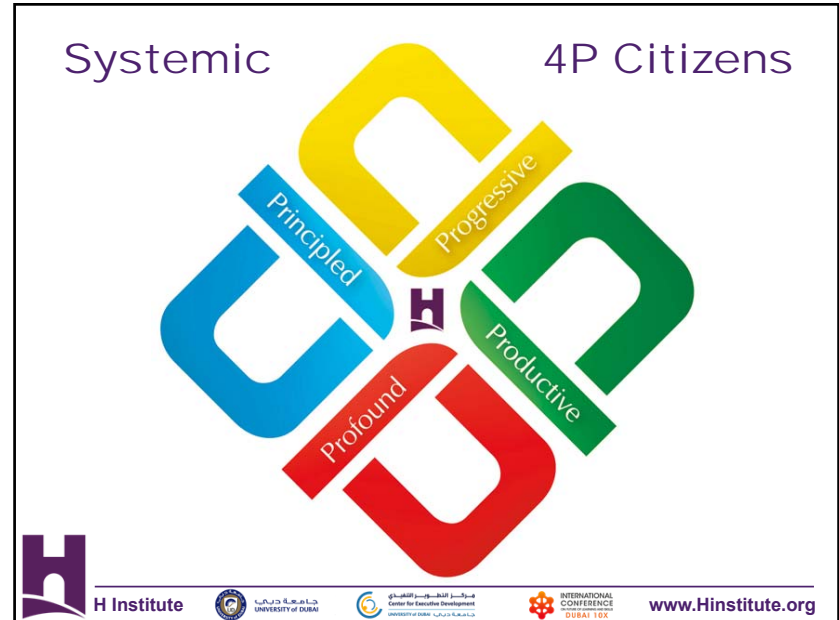
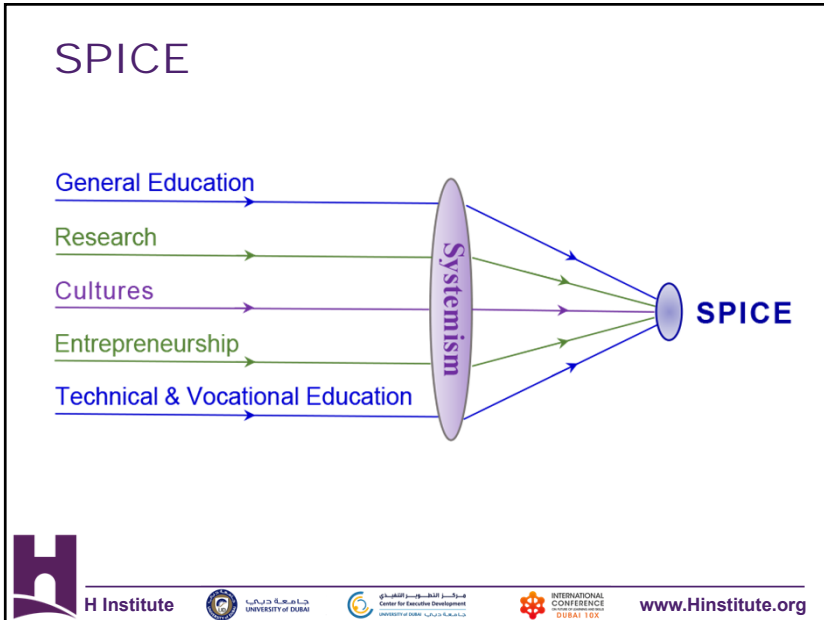


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# SPICE





**Systematic**  
**Orderly**  
**Innovative**  
**Efficient**  
**Team player**  
**Resourceful**  
**Wholesome**

**Aggressive**

**Visionary**  
**Curious**  
**Critical**  
**Insightful**  
**Proactive**  
**Hardy**  
**Autonomous**

**Astute**  
**Articulate**  
**Coherent**  
**Balanced**  
**Diversified**  
**Convergent**  
**Wholistic**

**Profound**

**Empathetic**  
**Virtuous**  
**Ethical**  
**Emancipatory**  
**Civic-minded**  
**Eco-minded**  
**Aesthetic**

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*Thank You*

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## About the author:

Ibrahim A. Halloun is Founding President of H Institute, a nonprofit research and development organization based in Lebanon and dedicated to engraining the Culture of Excellence in various sectors of society, especially the educational and cultural sectors. Prof. Halloun earned, in 1984, a PhD in Physics / Education from Arizona State University. He is former tenured Professor of Physics and Education at Lebanese University (1984 – 2019), and held joint appointments at many institutions in Lebanon and abroad including Arizona State University, American University of Beirut, and UNESCO-Paris.



Prof. Halloun has been devoted particularly to the development of:

- *Systemic Cognition and Education.*
- *Modeling Theory in Science Education.*
- Viable means for characterizing and revamping student worldviews and conceptions.

His R&D work and interests also include:

- Educational policy and systemic reform.
- Curriculum design with a focus on systemic cross-disciplinarity.
- Assessment and evaluation.
- Professional development of pre-service and in-service teachers.
- Cognitive science and neuroscience.
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