Early Childhood Systems

ECPC Leadership Institute
Early Childhood Personnel Center
University of Connecticut Health Center
Funded by the Office of Special Education Programs
US Department of Education

Sharon Lynn Kagan, Ed.D.
Teachers College, Columbia University
Child Study Center, Yale University
November, 2017

Presentation Overview

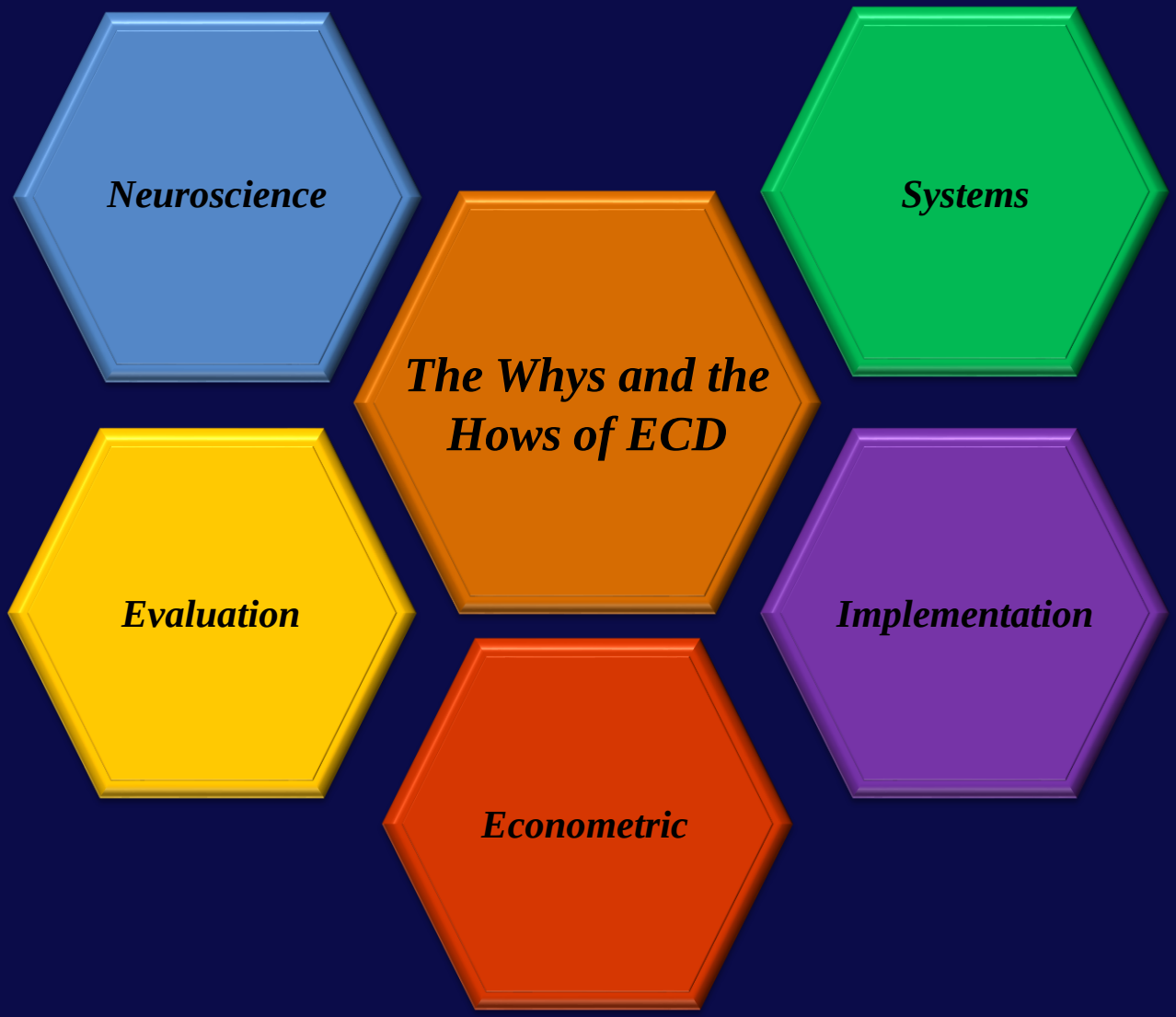
- *Part I* — ***Why Now? Using Research***
- *Part II* — ***Consequences of New Sciences: Thinking Differently***
- *Part III* — ***Consequences of New Sciences: Acting Differently***
- *Part IV* — ***Some Huge Challenges***
- *Part V* — ***Next Steps***

Part I:

Why Now?

Using Research

ECD Research and Sciences



Neuroscience

- ***The early years are THE formative period of development***
  - Young children's brains grow to 80% of adult size by age 3 and to 90% by age 5
  - Young children grow faster and learn more in their early years than in any other period of life
    - Skills that develop in the early years impact later success in school, work, and community
  - Young children are the most vulnerable in the early years
    - As brain matures, it becomes much more difficult to change
    - Without consistent nurturing and protective stimuli, the brain does not form properly, and children are subject to significant, and sometimes insurmountable, deficits

Source: Center on the Developing Child at Harvard University. (2007). The science of early childhood development (InBrief). Retrieved from http://developingchild.harvard.edu/index.php/resources/briefs/inbrief_series/inbrief_the_science_of_ecd ;Center on the Developing Child at Harvard University. (2010). The foundations of lifelong health are built in early childhood. Retrieved from file:///C:/Users/eafox/Downloads/Foundations-of-Lifelong-Health.pdf ; Shonkoff, J. P. & Phillips, D. A. (2000). From neurons to neighborhoods: The science of early childhood development. Washington, DC, US: National Academy Press.; Perry, B. D. (2002). Childhood experience and the expression of genetic potential: What childhood neglect tells us about nature and nurture. Brain and Mind, 3, 79-100. 111

Evaluation Science

- ***High-quality early childhood care and intervention can prevent these negative effects from taking hold and have powerful benefits***
- ***Three scientifically robust and well-known studies of early childhood education have demonstrated which variables matter:***
    - Class size
    - Teacher qualifications
    - Teacher-child ratios
    - Curriculum
- ***Strongest effects of high-quality care are found for children from families with the fewest resources and who are under the greatest stress***

Sources: Center on the Developing Child at Harvard University. (2010). The foundations of lifelong health are built in early childhood. Retrieved from file:///C:/Users/eafox/Downloads/Foundations-of-Lifelong-Health.pdf ; Gormley, W., Gayer, T., & Phillips, D.A. (2008). Preschool programs can boost school readiness. Science, 320, 1723-24; Gormley, W., Gayer, T., Phillips, D.A., & Dawson, B. (2005). The effects of universal Pre-K on cognitive development. Developmental Psychology, 41, 872-884; Magnuson, K., Meyers, M. K., Ruhm, C. J., & Waldfogel, J. (2004). Inequality in preschool education and school readiness. American Educational Research Journal, 41(1), 115-157

	Perry: Treatment Group	***Abecedarian: Treatment Group***	***Chicago: Treatment Group***
Main Findings	• Higher rate of high school completion • Higher rate of employment at age 40 • Higher annual earnings • Higher scores on cognitive/language tests during early childhood, on school achievement tests between ages 9 and 14, and on literacy tests at ages 19 and 27 • More likely to own their own homes • More likely to have a savings account • Significantly fewer arrests, especially for violent crimes, property crimes, or drug crimes • Less likely to need treatment for mental health issues	• Higher cognitive test scores from toddler years to age 21 (gap narrowed over time, but remained significant) • Higher academic achievement in both reading and math from the primary grades through young adulthood • Completed more years of education and were more likely to attend a four-year college • Mothers whose children participated in the program achieved higher education/employment status than mothers whose children were not in the program—results especially pronounced for teen moms	• Preschool participation predicted increased cognitive performance at school entry • Preschool participants required special education at lower rates • Preschool participants performed better on reading/math tests through follow-up as young adults • Parents of preschool group remained more involved in children's schooling • Lower rates of juvenile arrest • Lower rates of daily smoking and lack of health insurance • Cost-benefit analysis conducted at age 26 found a $10.83 return on each dollar invested in the program

Econometric Science

Econometric

- ***Investments in high-quality programs produce economic results***

Program	*Dollars saved per $1 spent*
Perry Preschool	$17.07
Abecedarian	$2.50
Chicago Parent-Child Program	$10.83

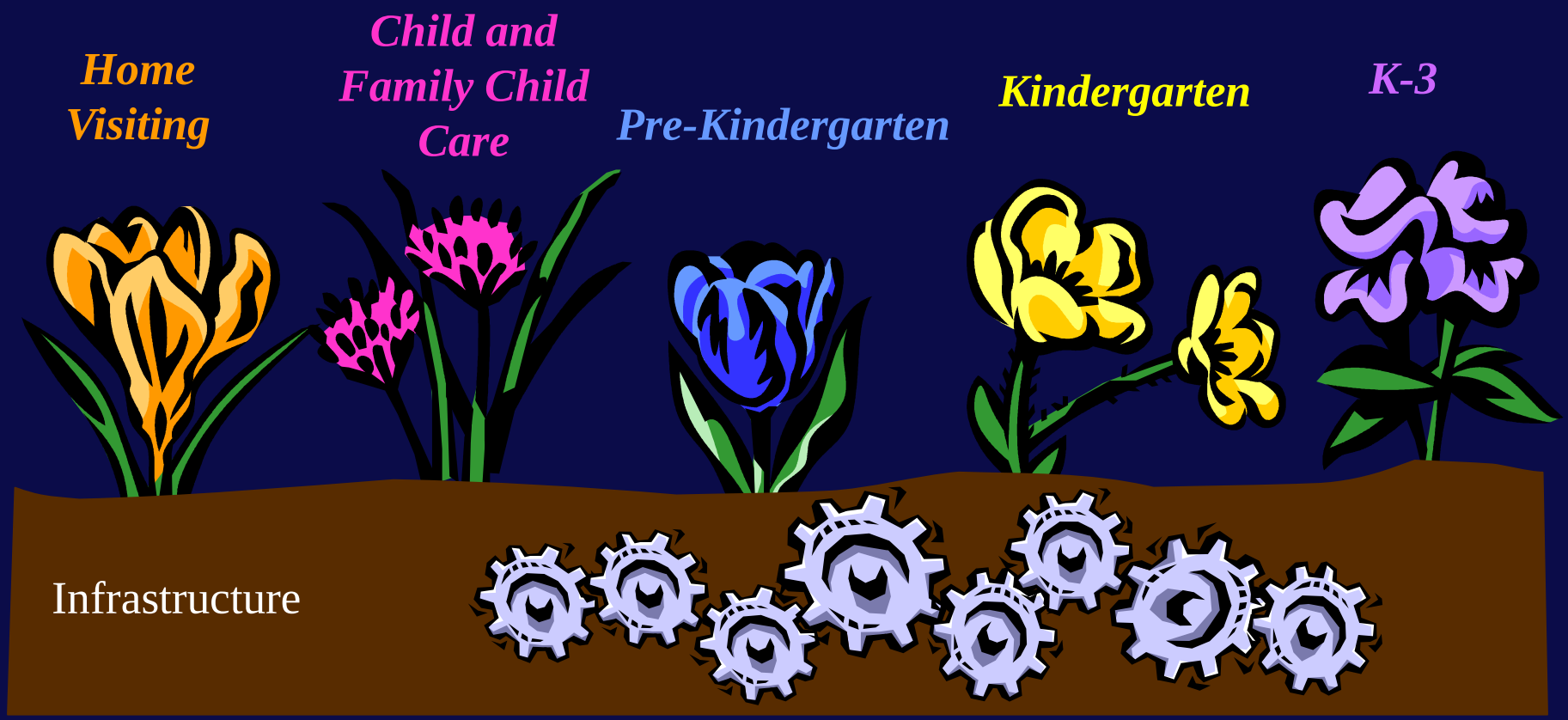
- ***These savings are due to a reduction in social costs for incarceration, welfare dependence, teen pregnancy, referral to special education, and reduced grade retentions***

Sources: Reynolds, A. J., Temple, J. A., White, B. A. B., Ou, S., & Robertson, D. L. (2011). Age 26 cost-benefit analysis of the Child-Parent Center early education program. Child Development, 82(1), 379-404. Retrieved from http://mail.ts-si.org/files/doi101111j14678624201001563x.pdf Shonkoff, J. P. & Phillips, D. A. (2000). From neurons to neighborhoods: The science of early childhood development. Washington, DC, US: National Academy Press.; HighScope. (2005). HighScope Perry Preschool Study. Retrieved from http://www.highscope.org/content.asp?contentid=219; Campbell, F. A., Pungello, E. P., Burchinal, M., Kainz, K., Pan, Y., Wasik, B. H., Sparling, J. J., Barbarin, O. A., & Ramey, C. T. (2012). Adult outcomes as a function of an early childhood educational program: An Abecedarian Project follow-up. Developmental Psychology,48(4), 1033-1043. Retrieved from http://psycnet.apa.org/journals/dev/48/4/1033.pdf11

Systems Science

- ***Contends that if you separate the parts from the whole, you are reducing the ability to achieve goals***
- ***Applies to early childhood because there are so many moving parts that must be considered together:***
  - Head Start, Child Care, Family Child Care, Pre-school, Nursery School, Pre-kindergarten, Home Visiting, Parenting Support and Education
- ***Applies to early childhood because we have not paid attention to the infrastructure***

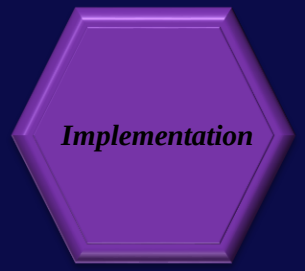
In ECE, A SYSTEM is: Programs and Infrastructure



Source: Kagan, S. L., & Cohen, N. E. (1997). Not by chance: Creating an early care and education system. New Haven, CT: Yale University Bush Center in Child Development and Social Policy.

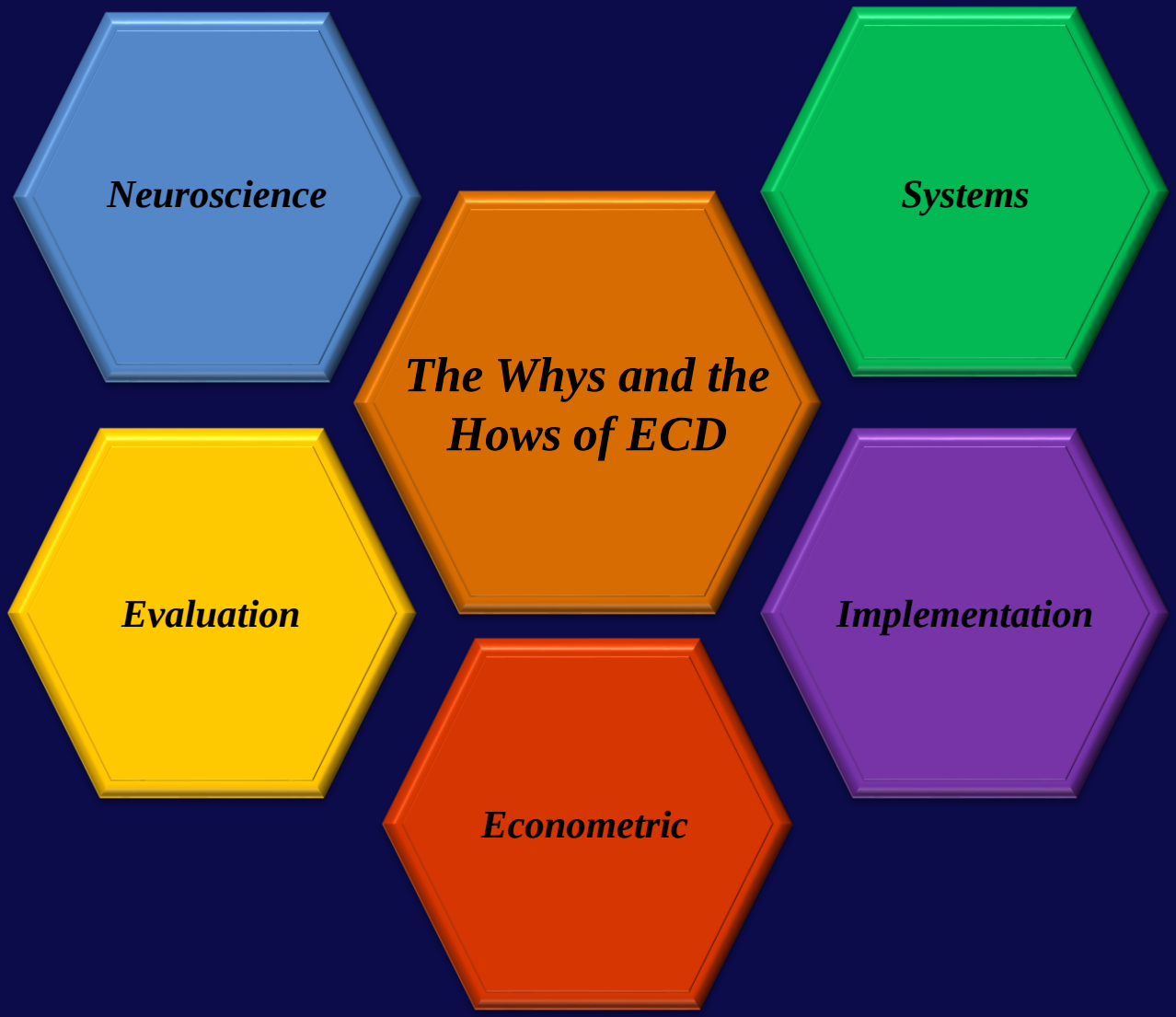
Gears: Need to work in all areas to move the infrastructure

Implementation Science



- ***Implementation science strives to integrate research into policy and practice by investigating:***
  - Bottlenecks that impede effective implementation
  - Strategies to foster timely and effective implementation of policies (began in health policy)
- ***Takes ECE research and links it to practice***
  - What do we know about interactions between health, education, and nutrition?
  - What do we know about how to link play and standards?
  - How do we keep DAP in light of assessment demands?

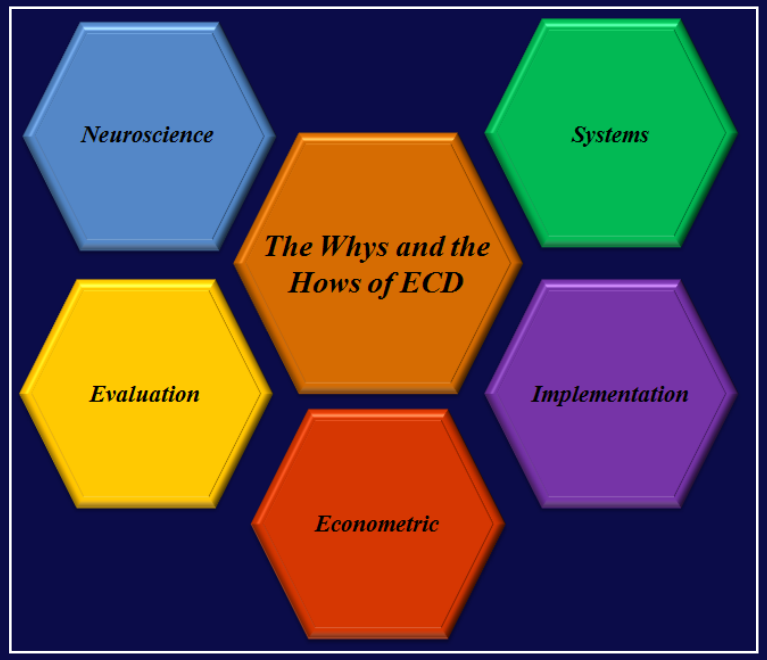
ECD's Many Sciences



Part II:

Consequences of New Sciences:

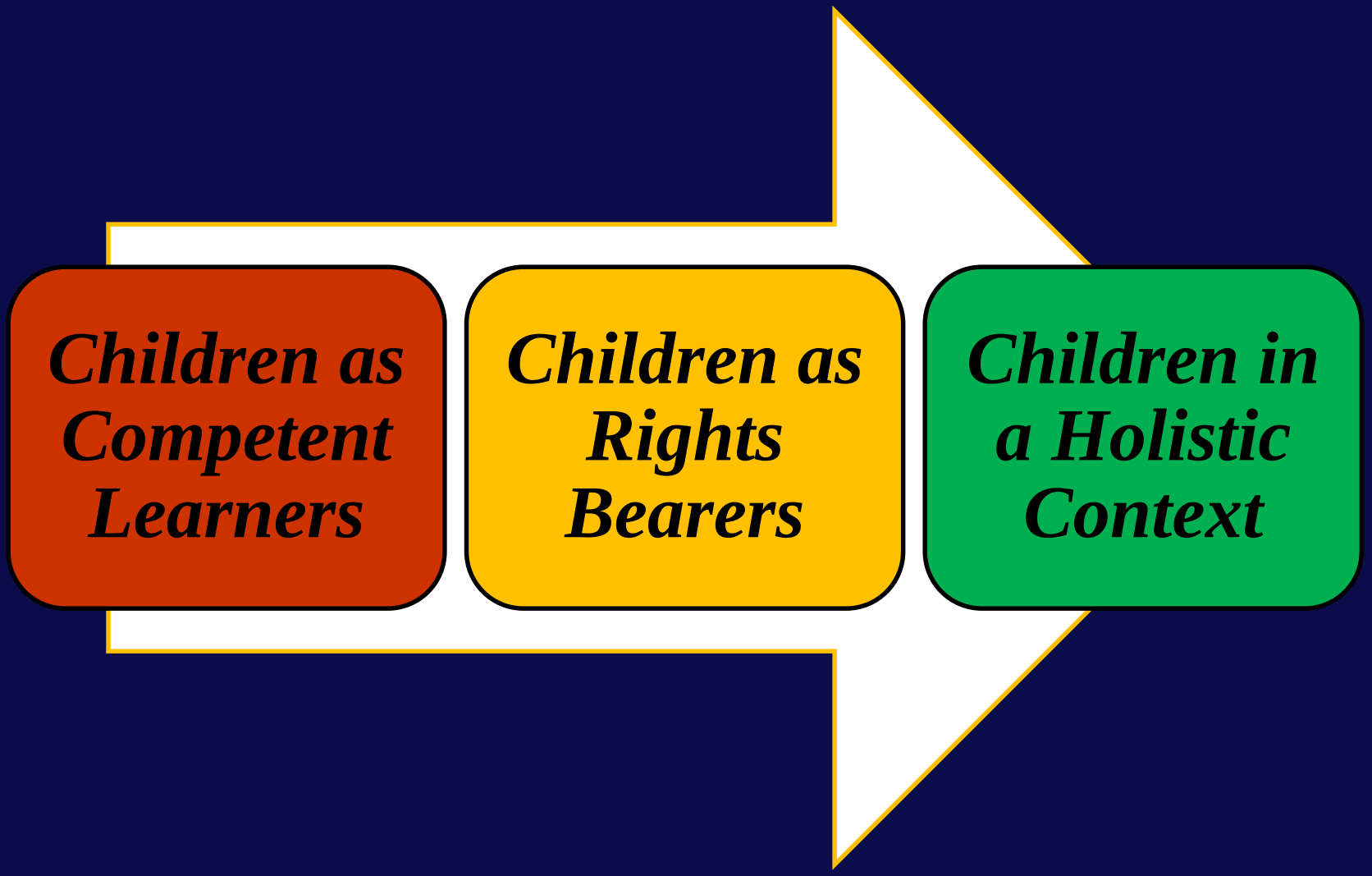
Thinking Differently



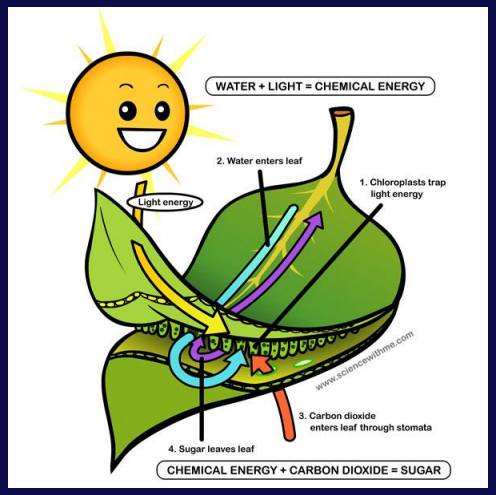
Children as Competent Learners

Children as Rights Bearers

Children in a Holistic Context


Children as Competent Learners
Children as Rights Bearers
Children in a Holistic Context

Children as Competent Learners



Children as Rights Bearers

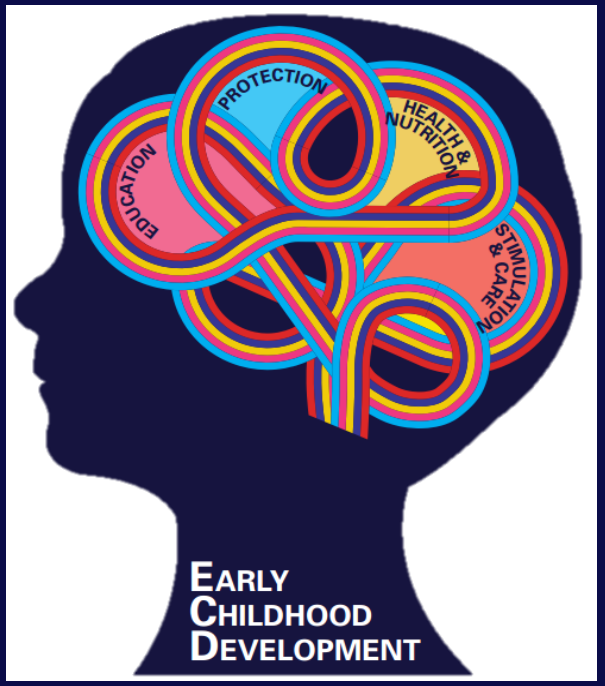
- ***Changing rationales for serving children***
- ***1960-1970s: Social and moral rationale***
  - To help elevate poor children out of poverty
- ***1970s-1980s: Women's employment rationale***
  - To get women into the workplace
- ***1990-2000s: Economic investment rationale***
  - To promote economic productivity of society
- ***2010s: Rights rationale***
  - To promote children's rights as humans

Children as Rights Bearers

- ***Children have entitlements:***
  - Safety
  - Protection
  - Education
  - Health and Nutrition
  - Equality
  - Environment

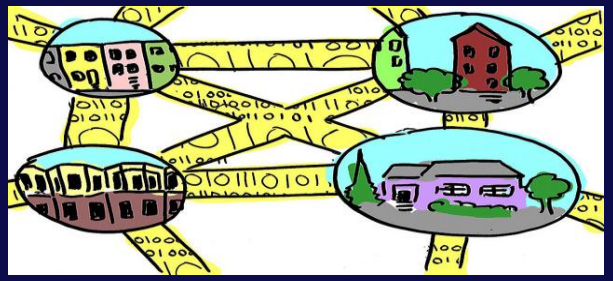
Children in a Holistic Context

- ***Early childhood interventions must encompass all of the sectors the impact early childhood***
  - Education
  - Protection
  - Health and nutrition
  - Stimulation and care

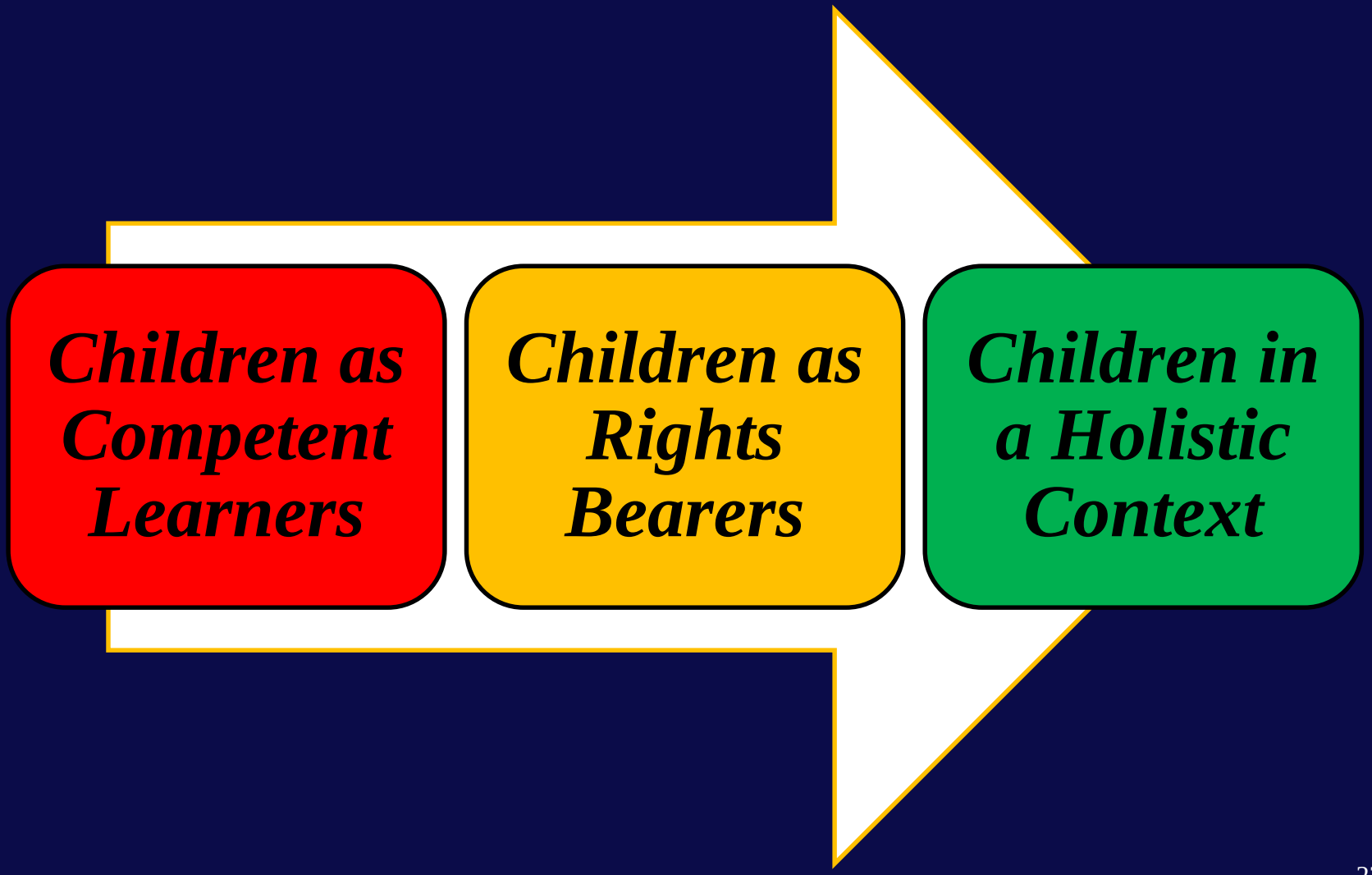


Source: Lake, A., & Chan, M. (2014). Putting science into practice for early child development. The Lancet. doi: 10.1016/SO140-6736(14)61680-9; UNICEF. (2014). Early childhood development: A statistical snapshot: Building better brains and sustainable outcomes for children. New York, NY: UNICEF, Division of Data, Research and Policy.

Children in a Holistic Context



Thinking Differently

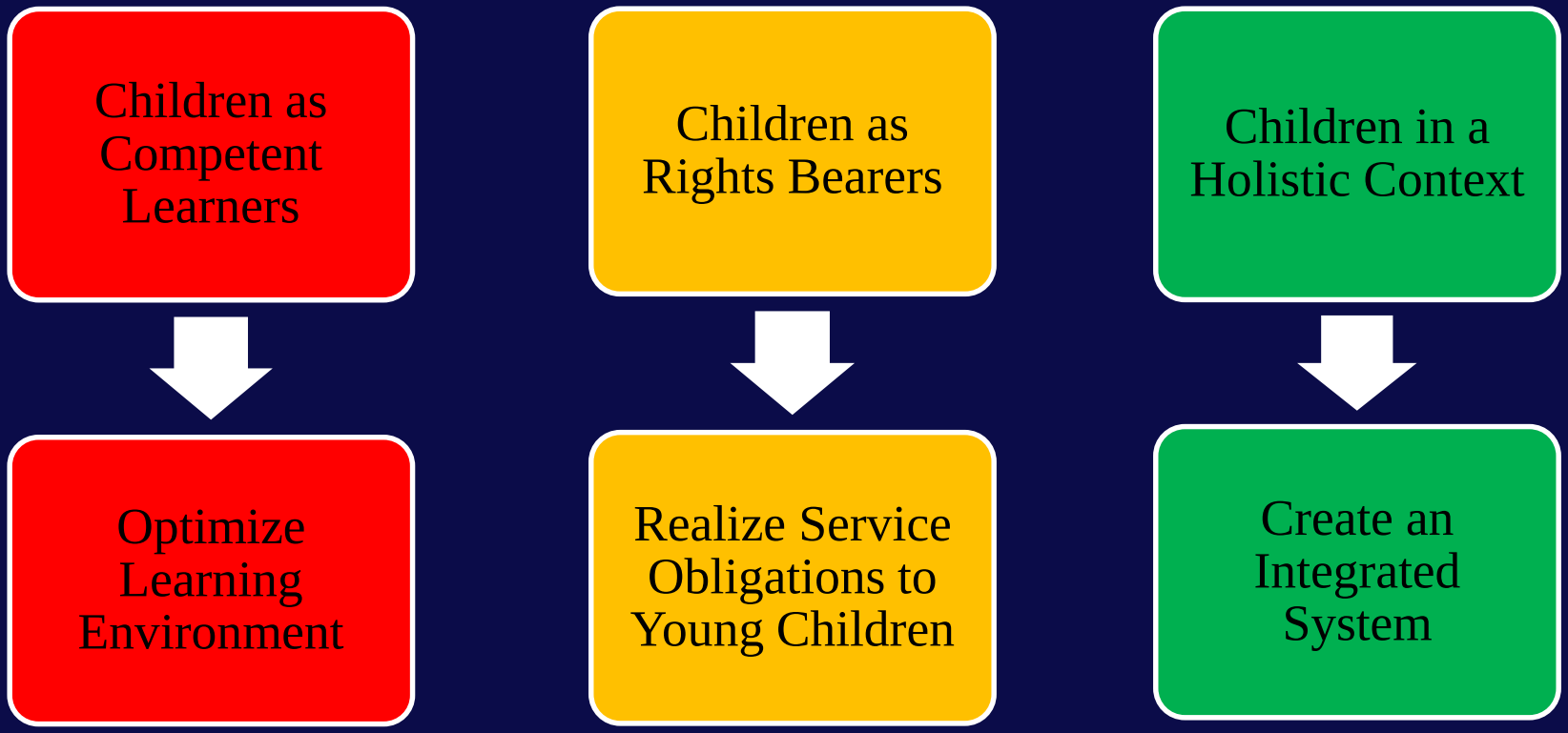


Part III:

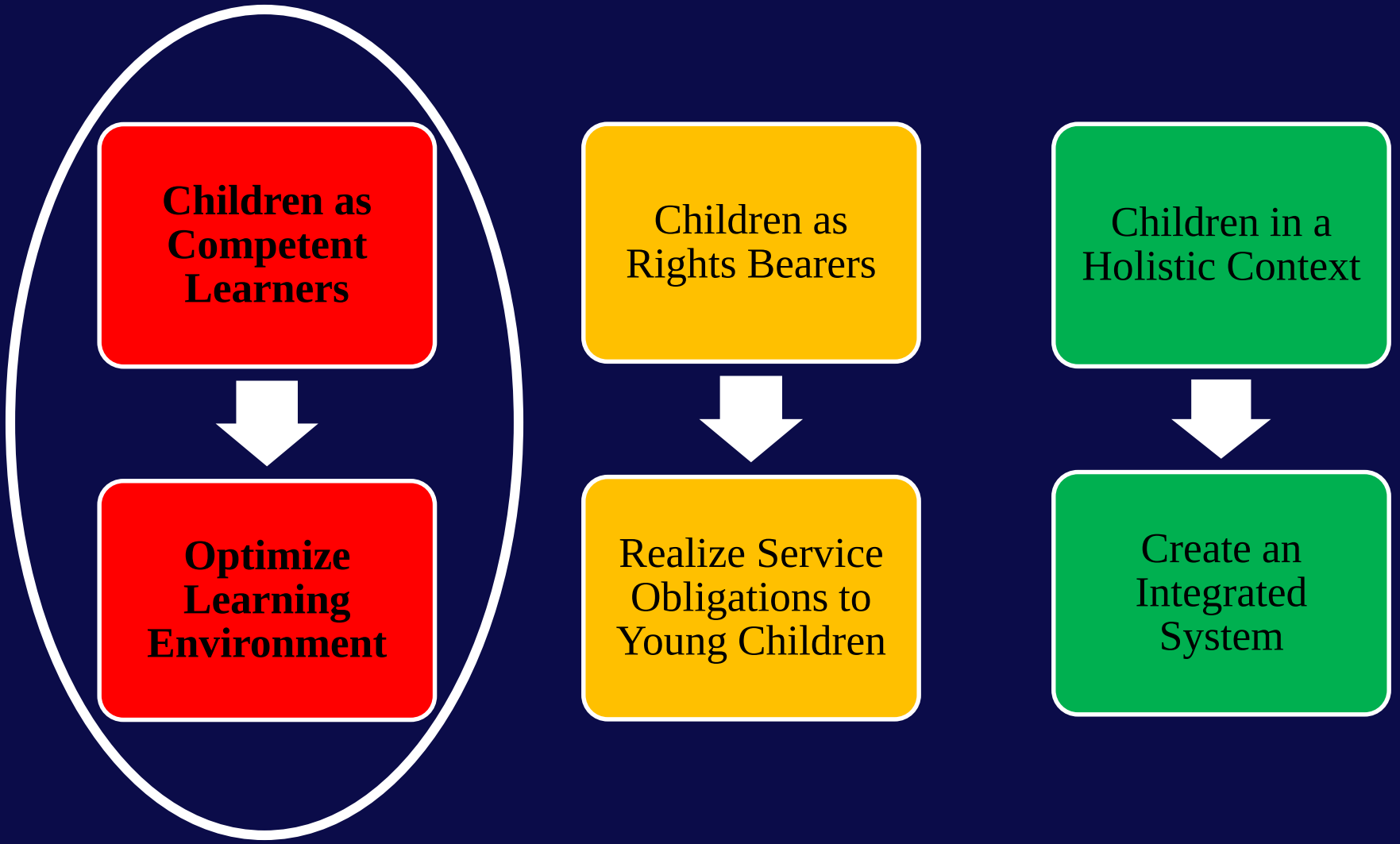
Consequences of New Sciences:

Acting Differently

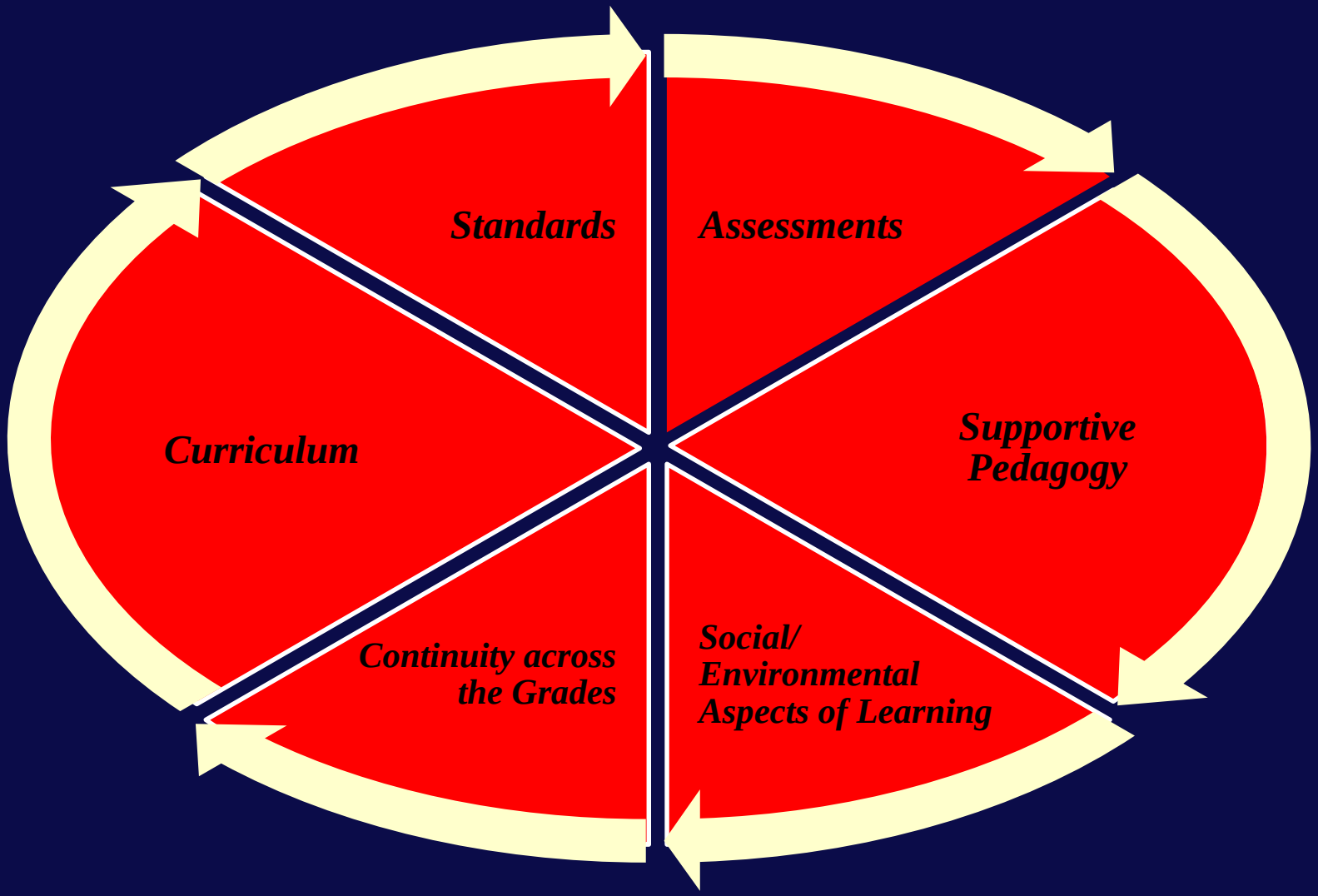
Acting Differently



Acting Differently



From the Systems Sciences: Think About a Learning Sub-System



Optimize Learning Environment by Creating a QUALITY Learning Sub-System

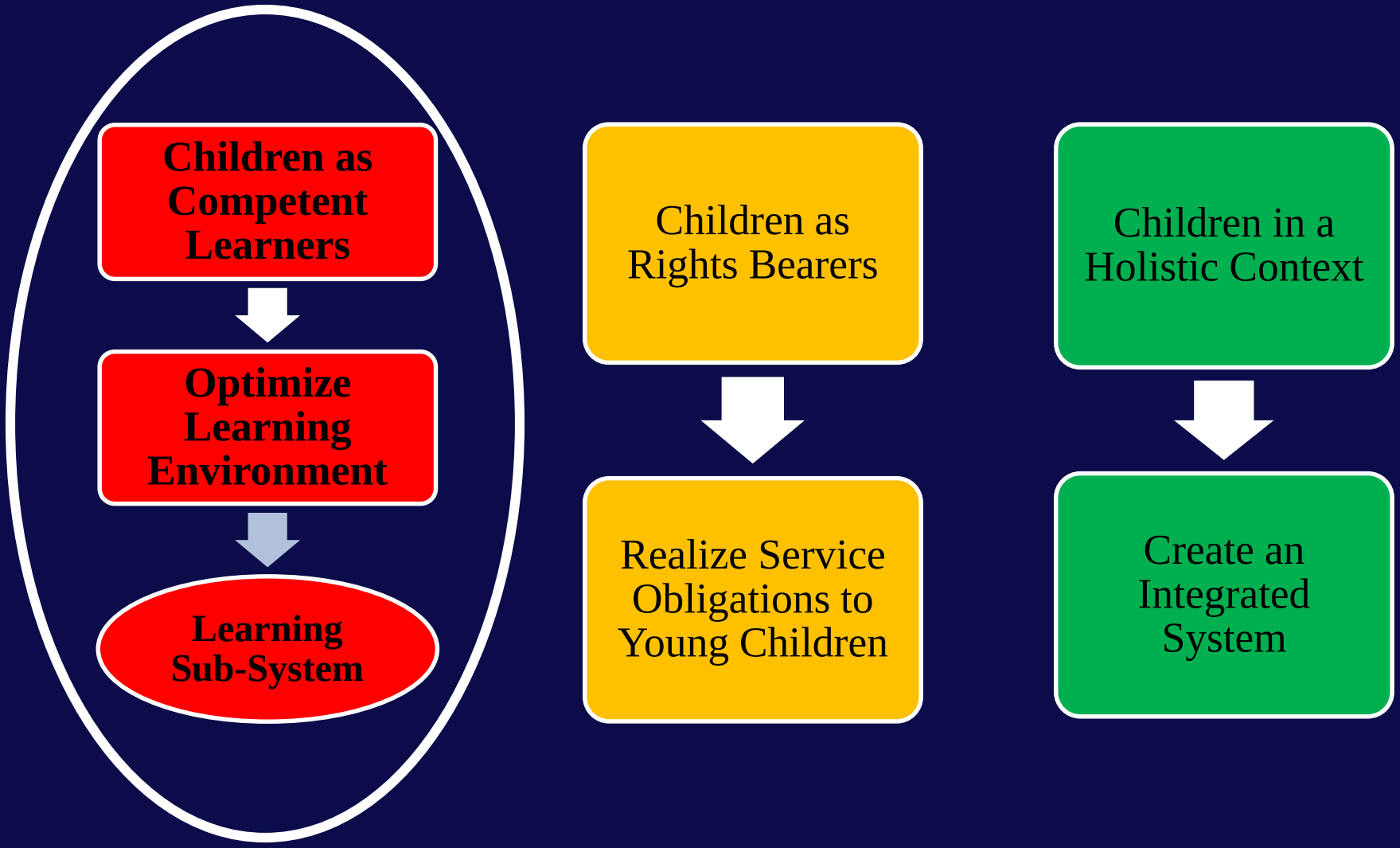
- ***Seeing this in different efforts***
  - Standards, curriculum, and assessment alignment efforts
  - P-3 represents those who focus on transitions
  - Transition and continuity
  - Two-generation programming
  - Integrated, high-quality learning, both at the individual program level and increasingly within communities (Boston)

Optimize Learning Environment by Creating a QUALITY Learning Sub-System

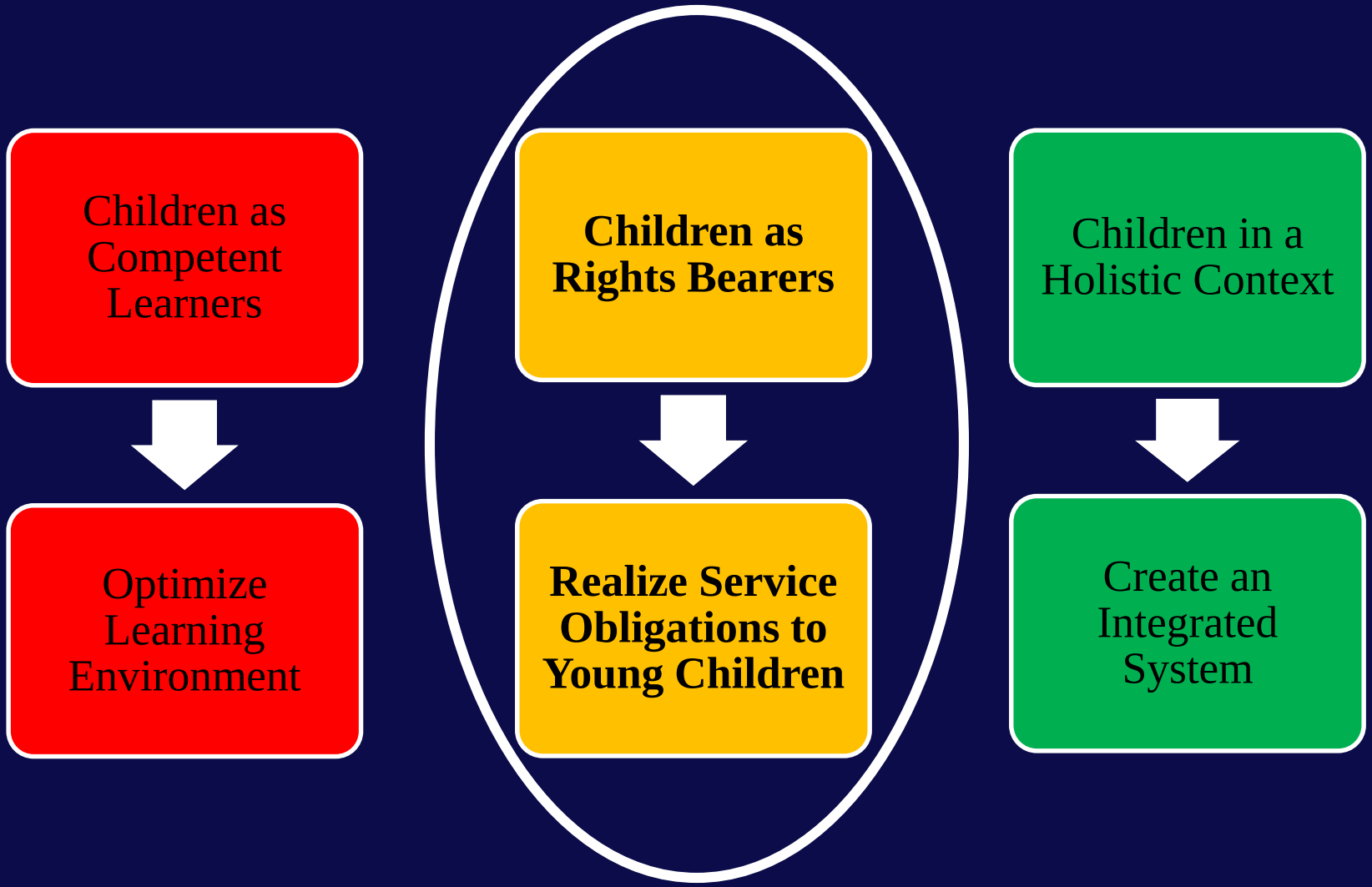
- ***Not perfect***
  - Not sufficiently inclusive (DLLs, CWD, and high/multiple risk populations)
  - Too "schoolified" (too much focus on outcomes)
  - Too much/too little technologically reliant
  - Services for young children are not of consistent or high quality
    - Only 7 states met all 10 of NIEER's quality benchmarks in 2015

Source: NIEER. (2016). The state of preschool 2015. Retrieved from http://nieer.org/wp-content/uploads/2016/05/Yearbook_2015_rev1.pdf

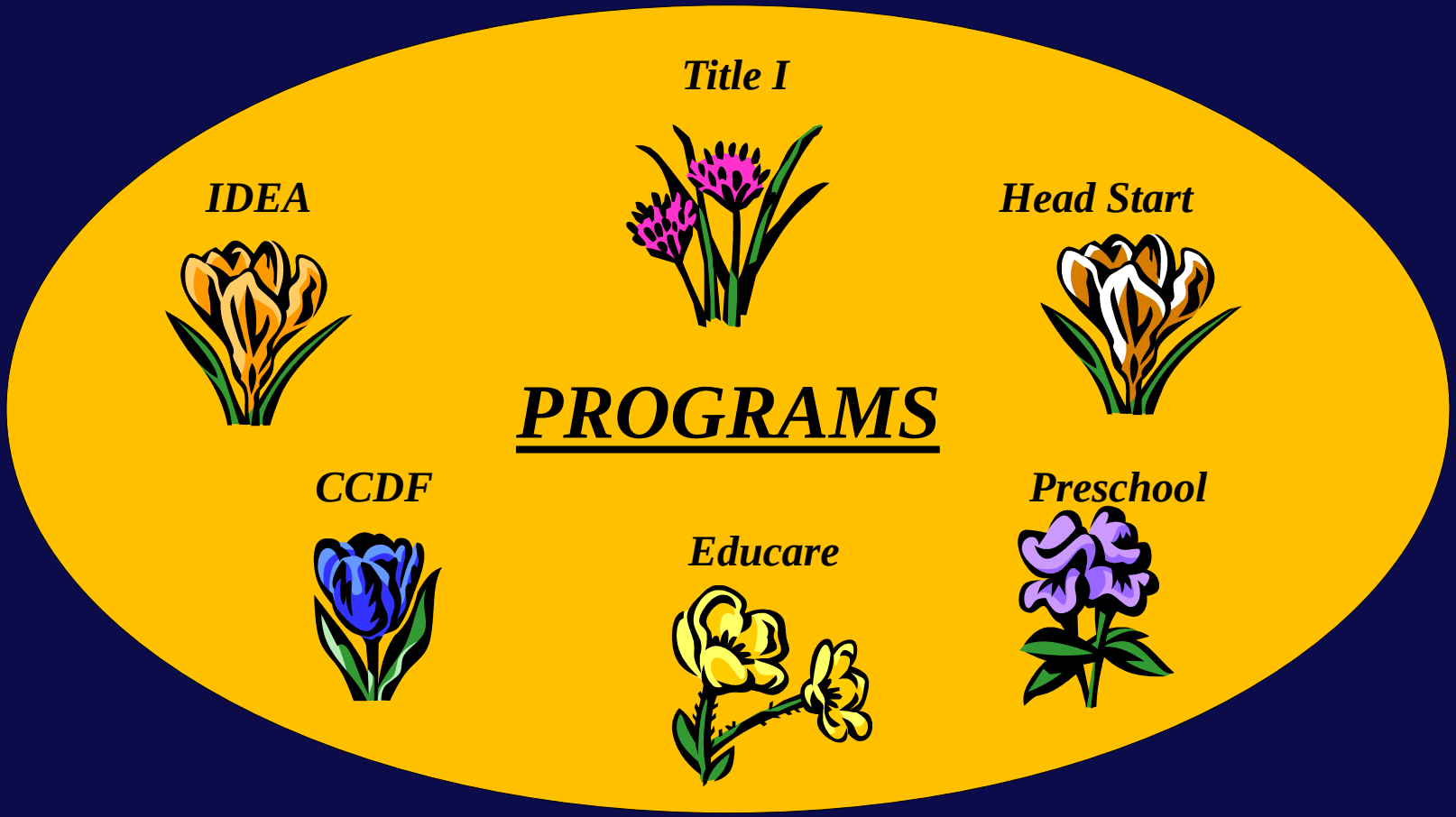
Implications for Acting Differently



Implications for Acting Differently



Service Obligations to Children



Service Obligations to Children

Children as Rights Bearers: Realize Service Obligations to Young Children

- ***Governments are increasingly acknowledging their role in early education by expanding existing programs and services in an effort to make them more prevalent and more equitably distributed***
  - Universal Pre-kindergarten
  - Home visiting
  - Expansions of services to infants and toddlers
  - Movement toward early childhood mental heath expansion
  - Movement toward universal health care
  - Increased focus on nutrition
  - Sustainable development goals, with focus on social protection and environment

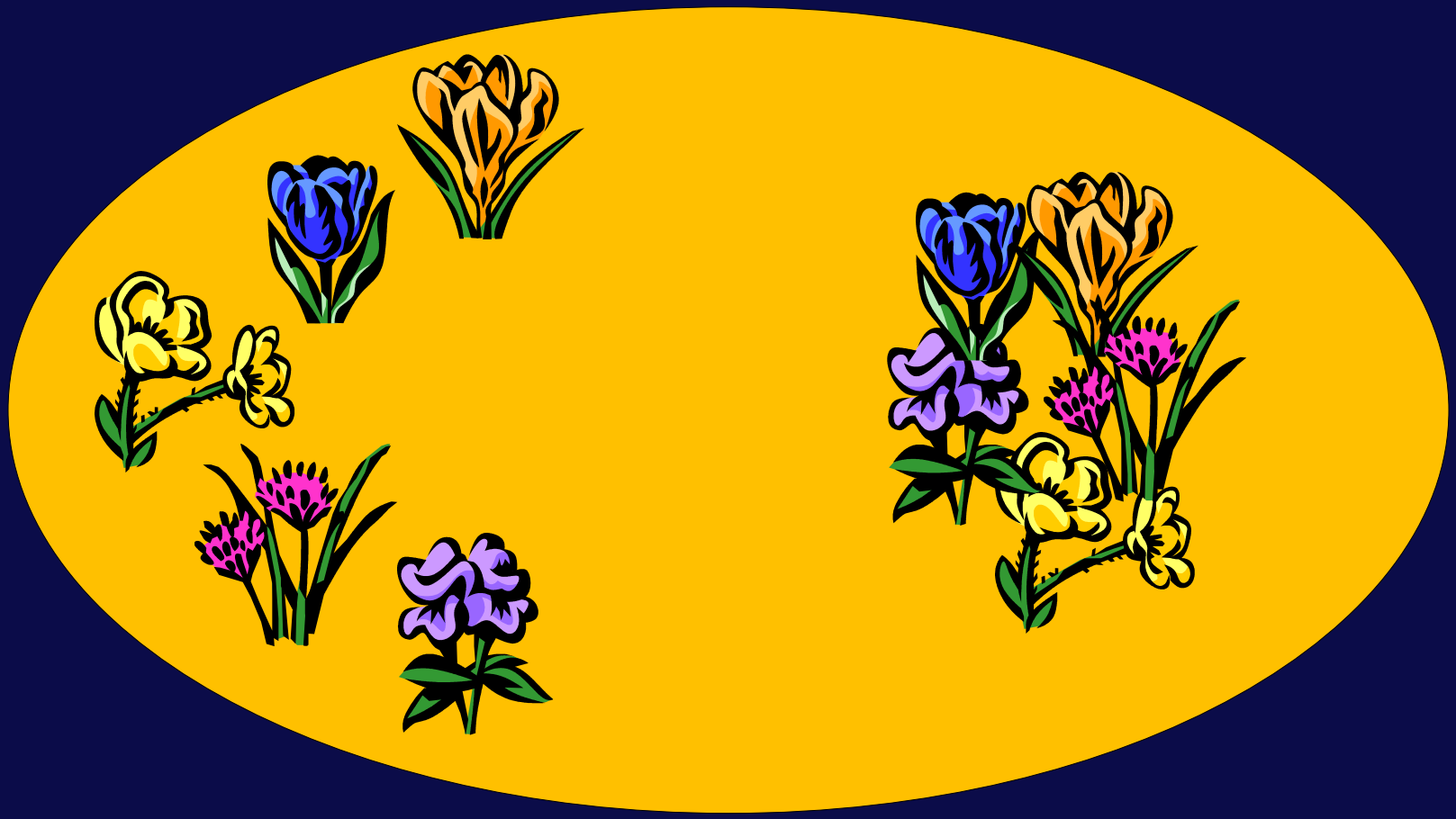
Source: Gomez, R.E., Kagan, S. L., & Fox, E. A. (2014). Professional development of the early childhood education teaching workforce in the United States: An overview. Professional Development in Education, 41(2), 169-186.

Children as Rights Bearers: Realize Service Obligations to Young Children

- ***Expansion is happening, albeit not perfectly***
  - Somewhat chaotically
  - May not be addressing all ages of children in all domains of development
  - Quite uneven expansion in the United States, as compared with other countries
  - Using very diverse funding streams and strategies

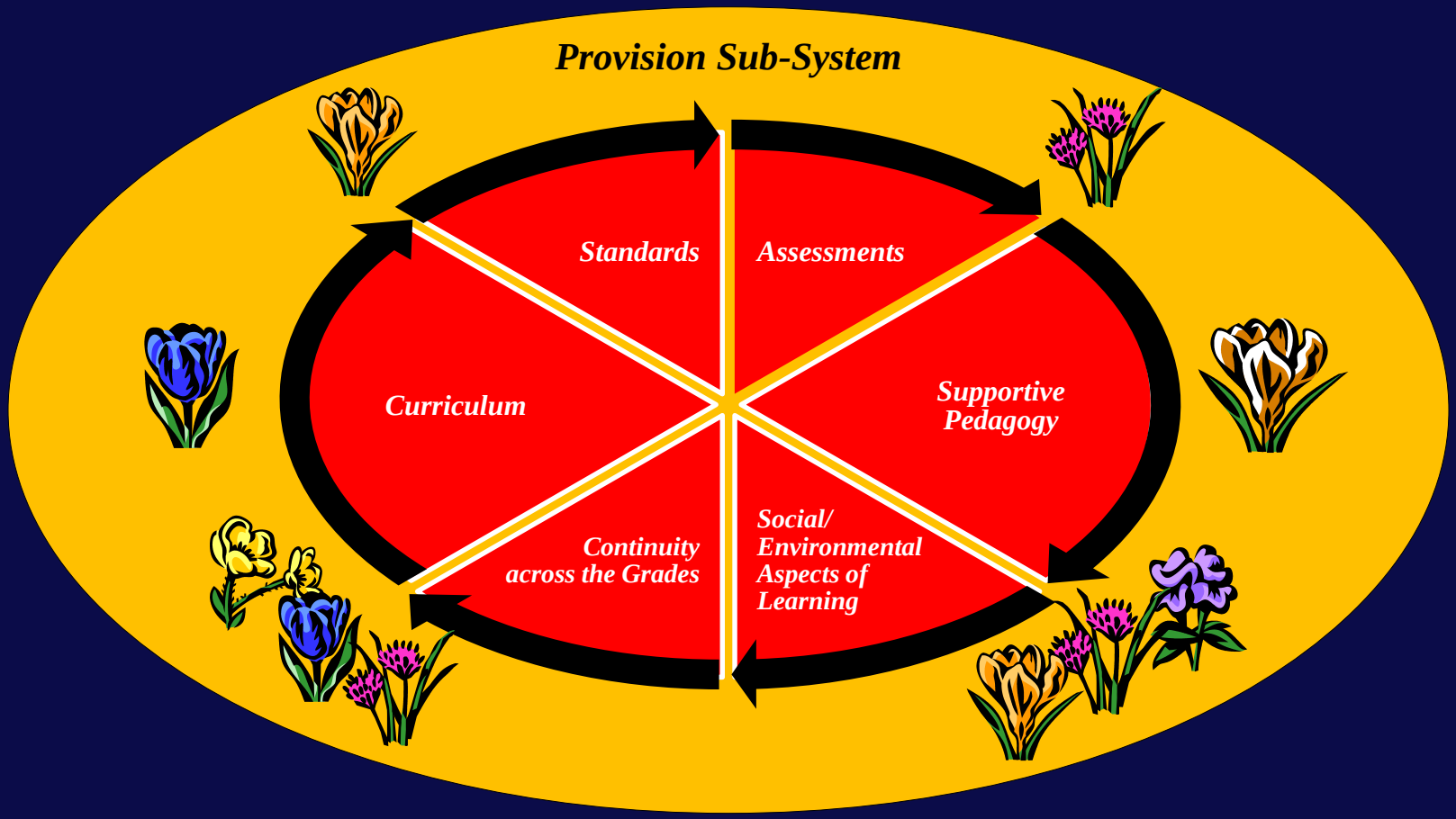
Source: Gomez, R.E., Kagan, S. L., & Fox, E. A. (2014). Professional development of the early childhood education teaching workforce in the United States: An overview. Professional Development in Education, 41(2), 169-186.

Children as Rights Bearers: Realize Service Obligations to Young Children

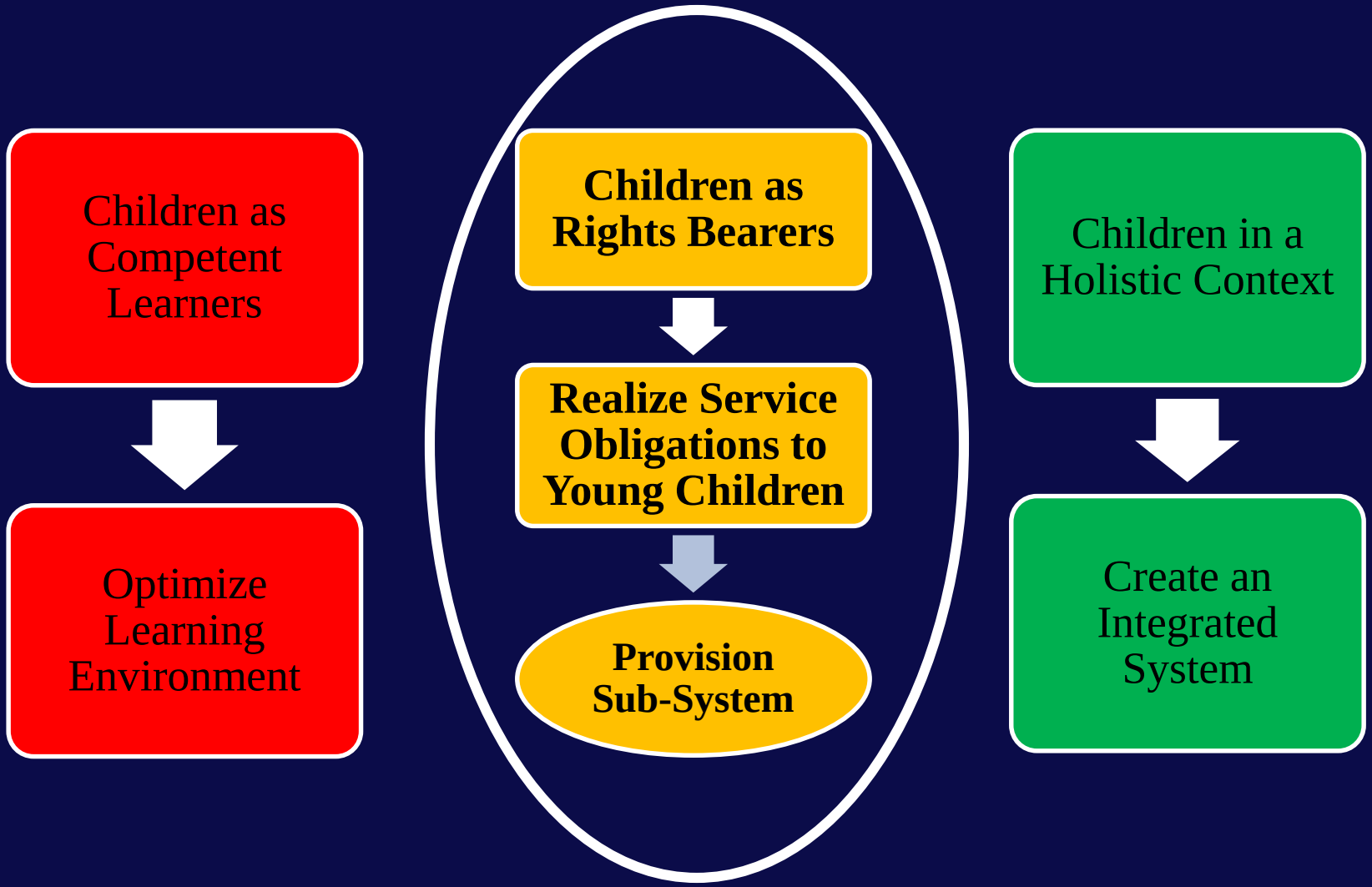


Movement toward producing greater integration

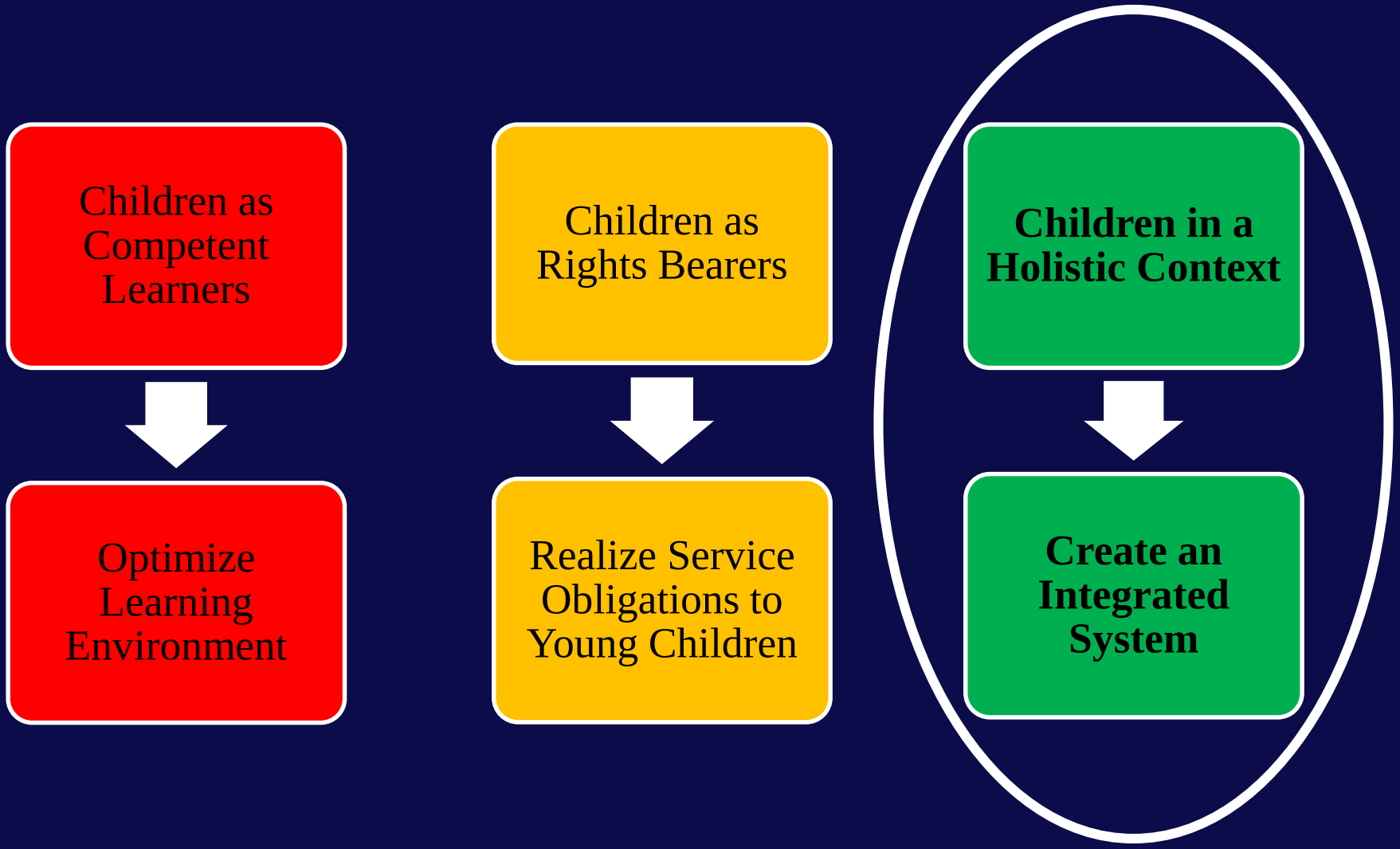
Provision Sub-System



Implications for Acting Differently

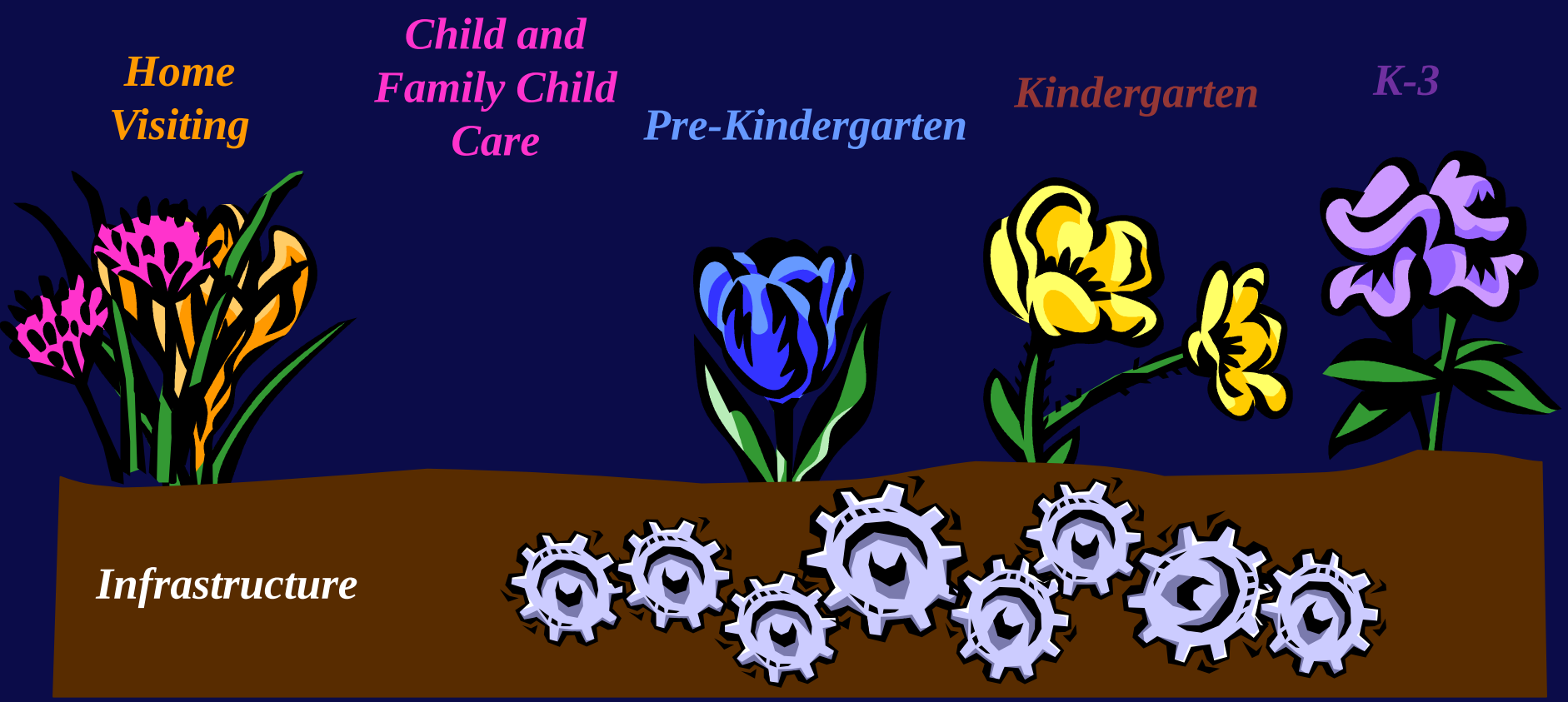


Implications for Acting Differently



Programs/Services Can't Do It Alone Need an Infrastructure

System = Programs/Services + Infrastructure

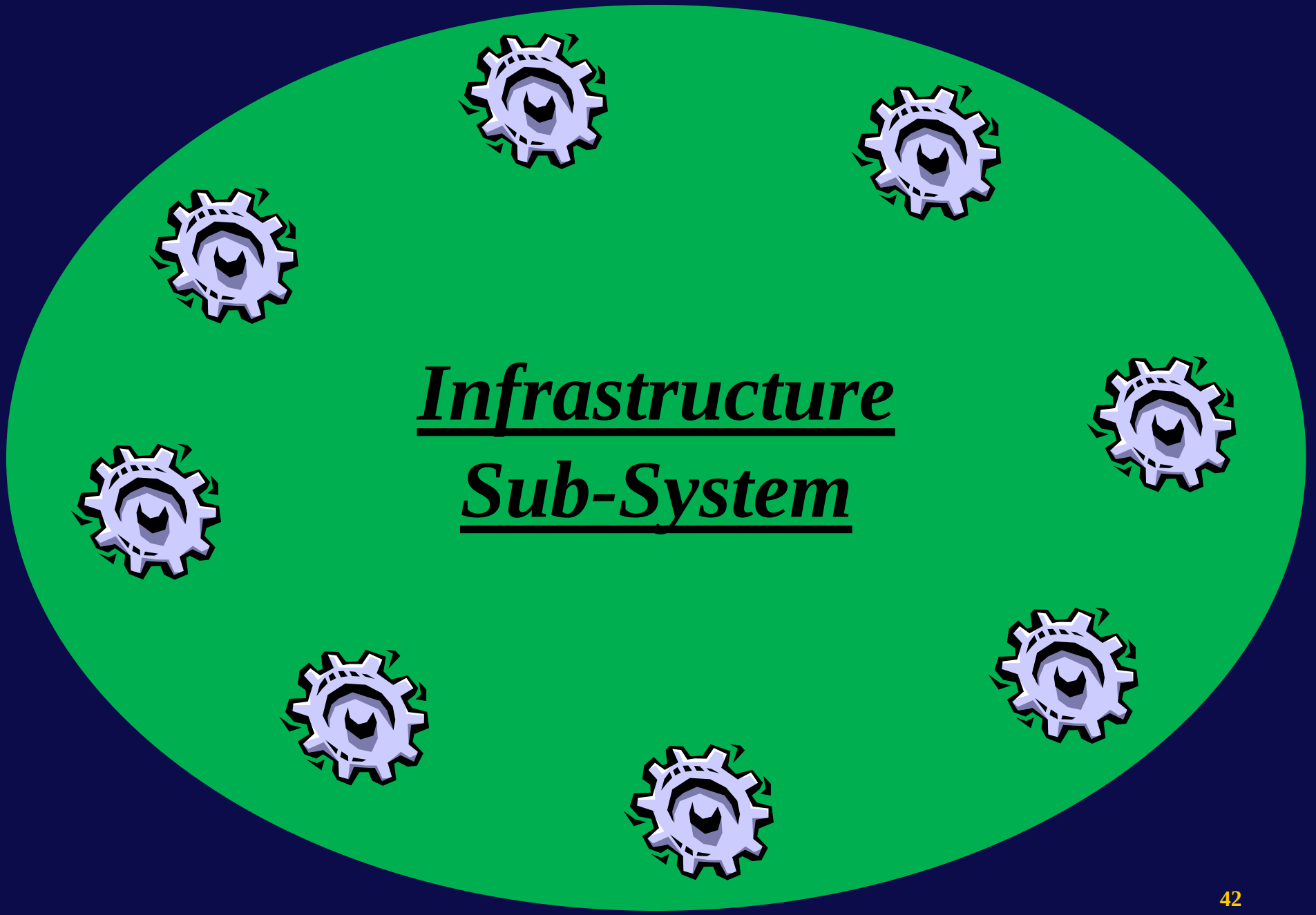


Source: Kagan, S. L., & Cohen, N. E. (1997). Not by chance: Creating an early care and education system. New Haven, CT: Yale University Bush Center in Child Development and Social Policy.

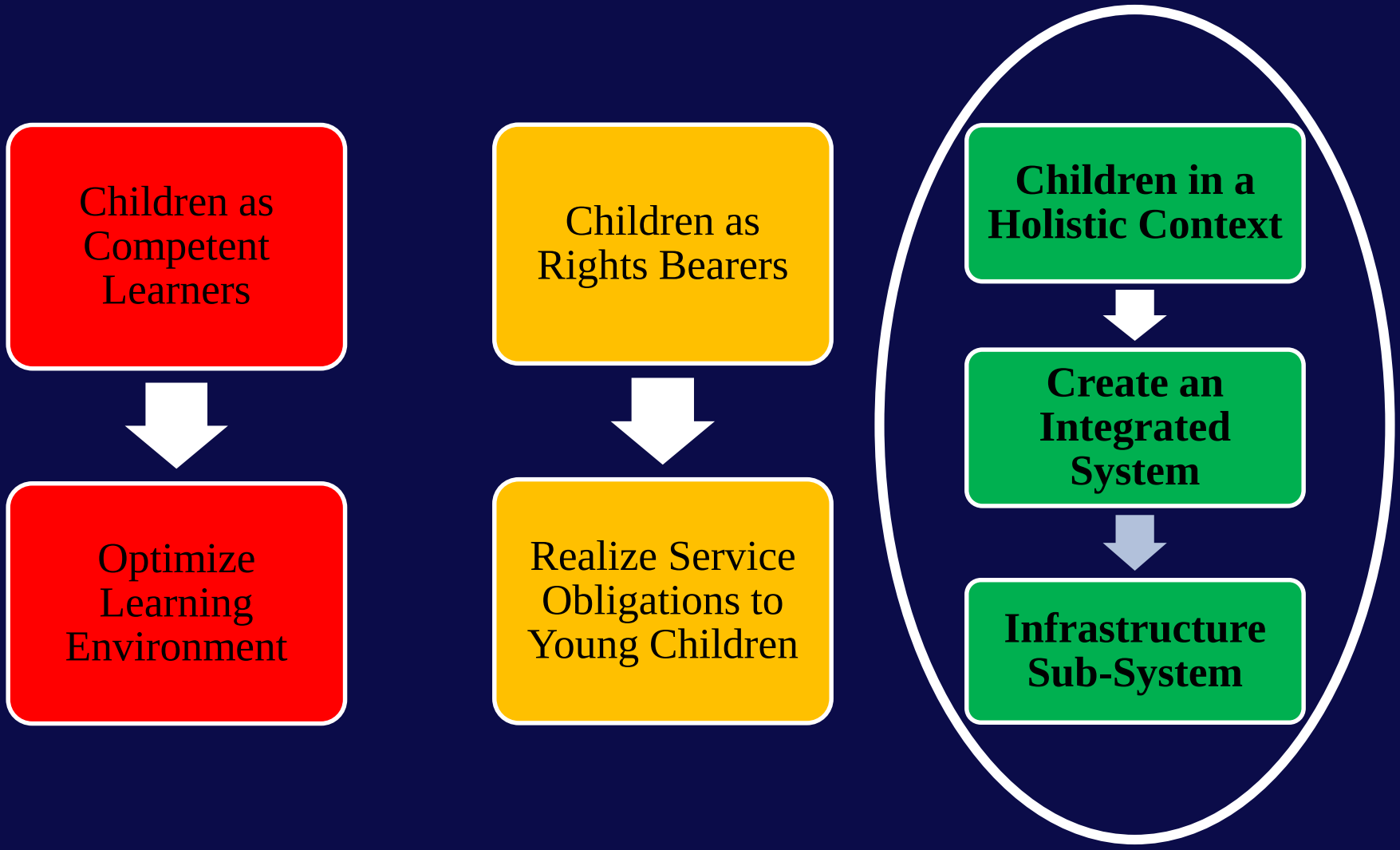

Quality Programs
Gears: Need to work in all areas to move the infrastructure
Governance Entities
Parent Engagement and Community Outreach
Regulations
Financing Mechanisms
Professional Development Capacity and Professional Certification
Linkages to Schools and Community Health Settings
Guidelines and Ongoing Formative Assessment Mechanisms

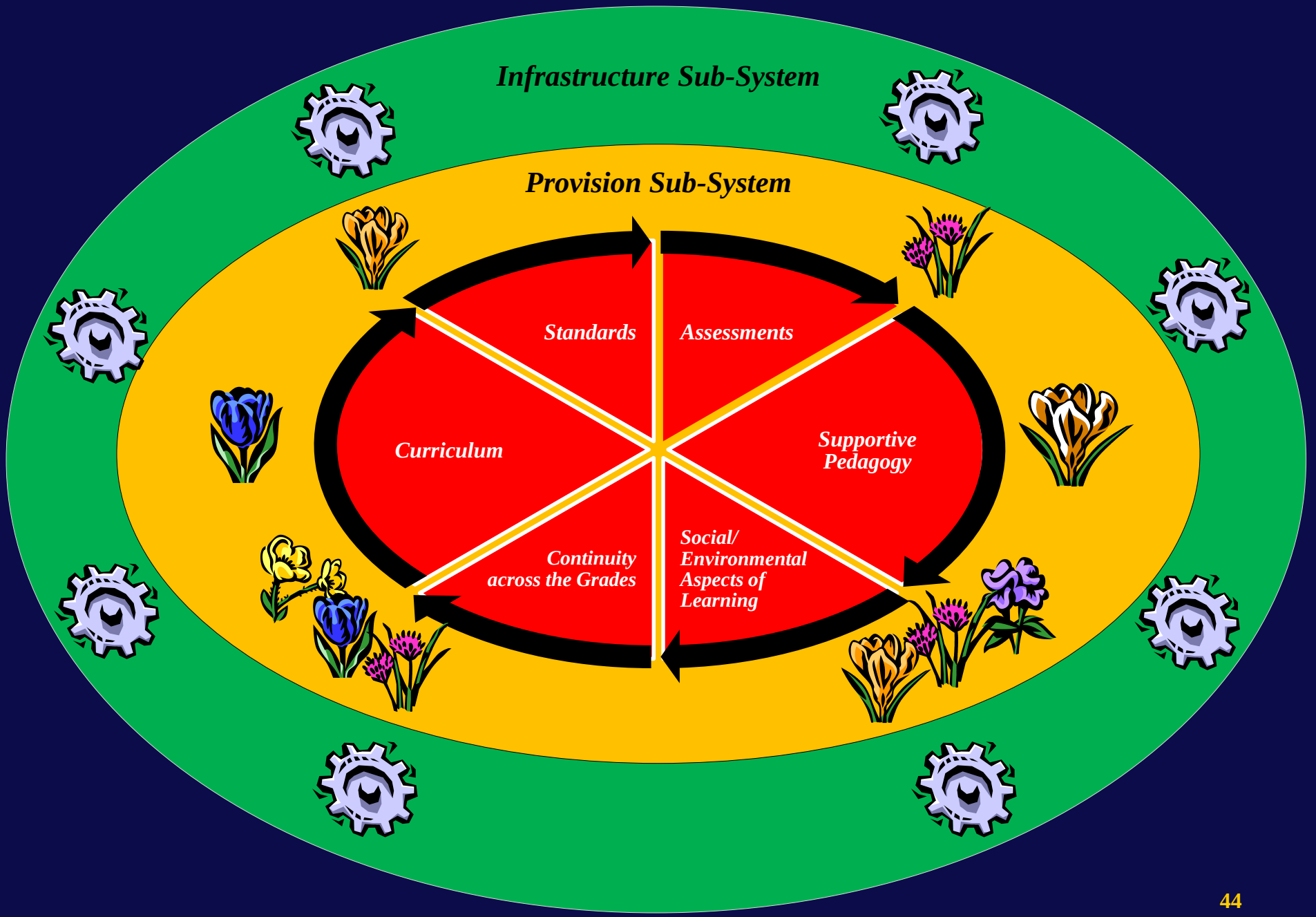
Children in a Holistic Context: Create the Infrastructure

- ***Doing this:***
  - –QRIS
  - –Regulations
  - –New standards
  - –New data systems
  - –Professional development


Infrastructure
Sub-System

Implications for Acting Differently




Infrastructure Sub-System
Provision Sub-System
Standards
Assessments
Curriculum
Supportive Pedagogy
Continuity across the Grades
Social/ Environmental Aspects of Learning

Part IV:

Some Huge Challenges

The Challenges

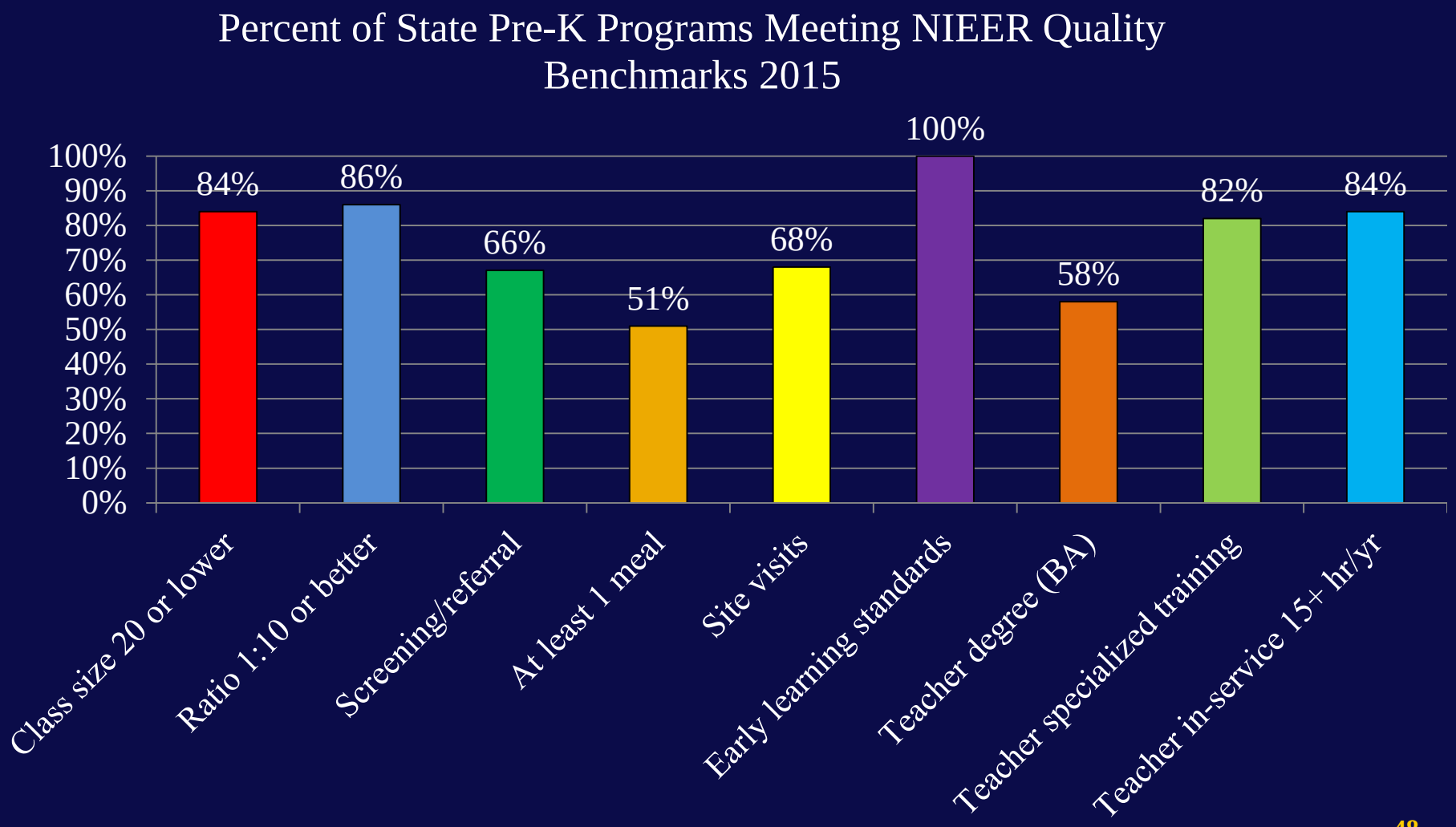
- ***Quality***
- ***Equality/Equity***
- ***Sustainability***

The Quality Challenge

- ***Services for young children are <u>not of consistent or high quality</u>***
  - As of 2015:
    - Only 7 states meet all 10 benchmarks for quality standards
      - Benchmarks take into account teacher qualifications, class size, student/teacher ratio, and development/use of learning standards
    - However, in 2015, quality standards did meet a new high
      - Six programs gained a benchmark and no programs lost benchmarks
      - Nebraska now requires that programs provide at least one meal per day and Missouri began requiring all teachers to receive at least
      - 15 hours per year of professional development
      - West Virginia and Mississippi are in the rankings for the first time

Source: NIEER. (2016). The state of preschool 2015. Retrieved from http://nieer.org/wp-content/uploads/2016/05/Yearbook_2015_rev1.pdf

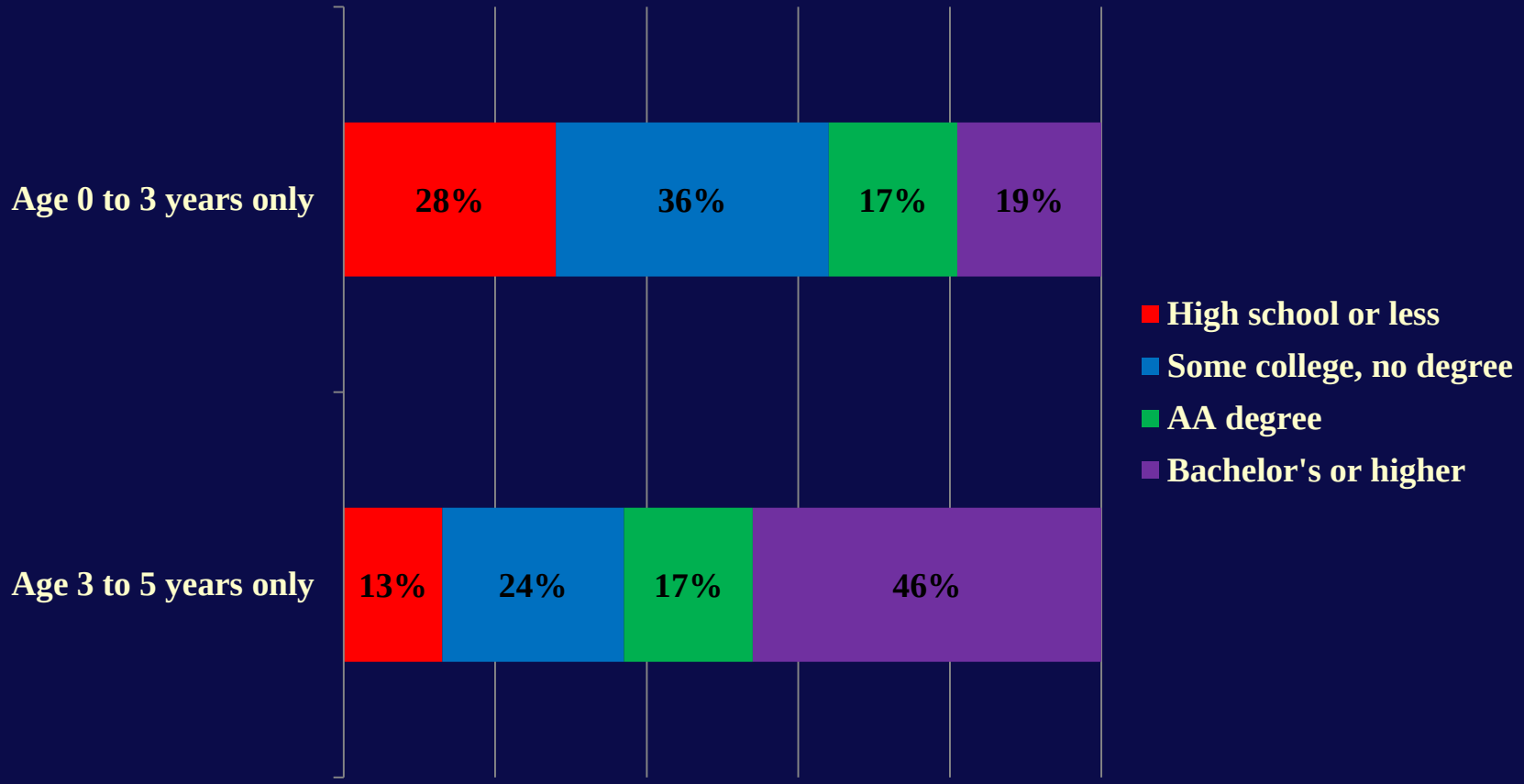
The Quality Challenge



Source: NIEER. (2016). The state of preschool 2015. Retrieved from http://nieer.org/wp-content/uploads/2016/05/Yearbook_2015_rev1.pdf

The Quality Challenge

Educational Attainment of Center-Based Teachers and Caregivers by Age of Children Served



NSECE. (2013). Number and characteristics of early care and education teachers and caregivers: Initial findings from the national survey of early care and education. Retrieved from http://www.acf.hhs.gov/sites/default/files/opre/nsece_wf_brief_102913_0.pdf

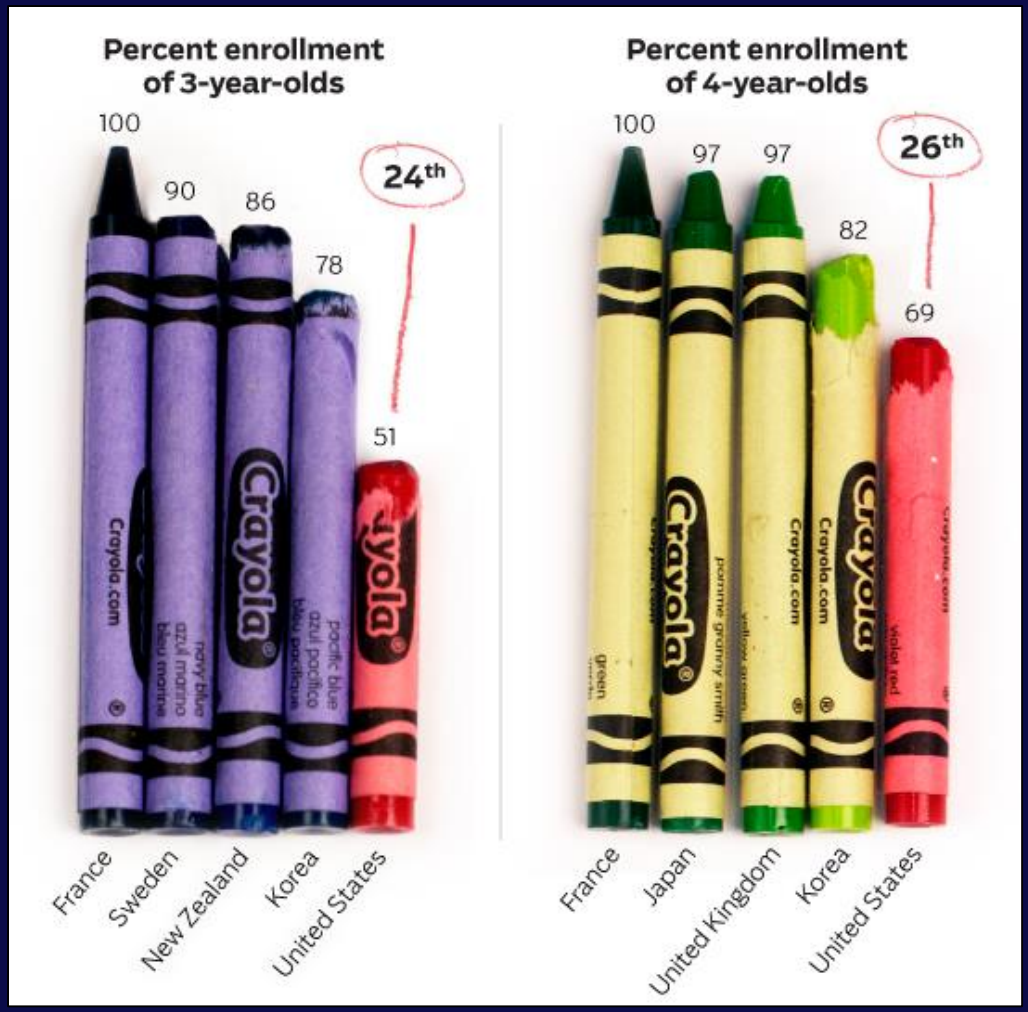
The In/Equality Challenge

- ***Not all children have access to preschool***
- ***In the U.S., 61% of all 4-year-olds and 35% of all 3-year-olds are enrolled in preschool***

Source: Education Week Research Center. (2015). Quality counts 2015: Preparing to launch. Retrieved from http://www.edweek.org/ew/toc/2015/01/08/index.html

The In/Equality Challenge

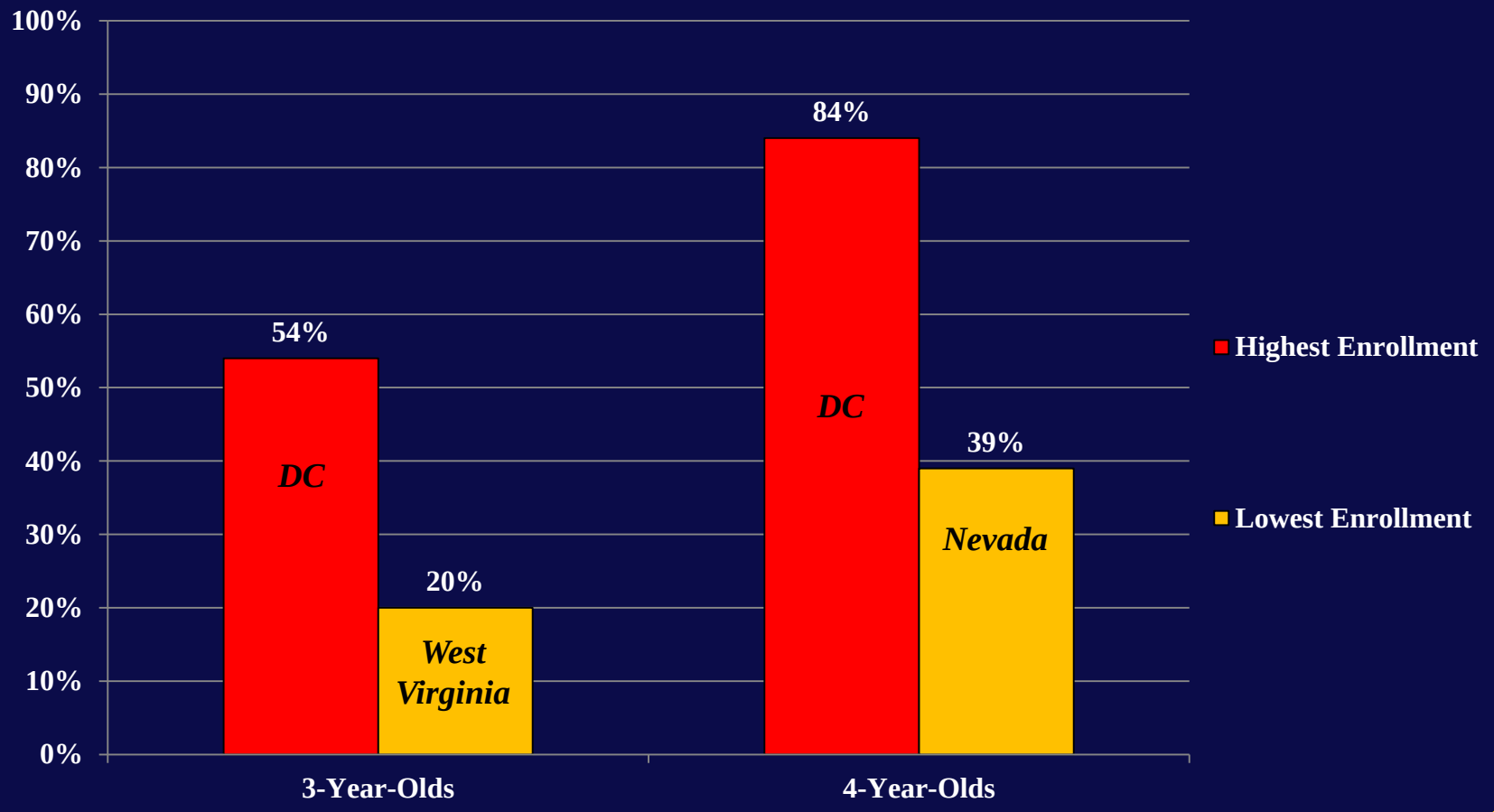
- ***Preschool enrollment in the U.S. pales in comparison to that in other developed countries***



Source: Herman, J., Post, S., & O'Halloran, S. (2013, May 2). Infographic: We're getting beat on preschool [Web log post]. Retrieved from https://www.americanprogress.org/issues/education/news/2013/05/02/62048/infographic-were-getting-beat-on-preschool/

The In/Equality Challenge

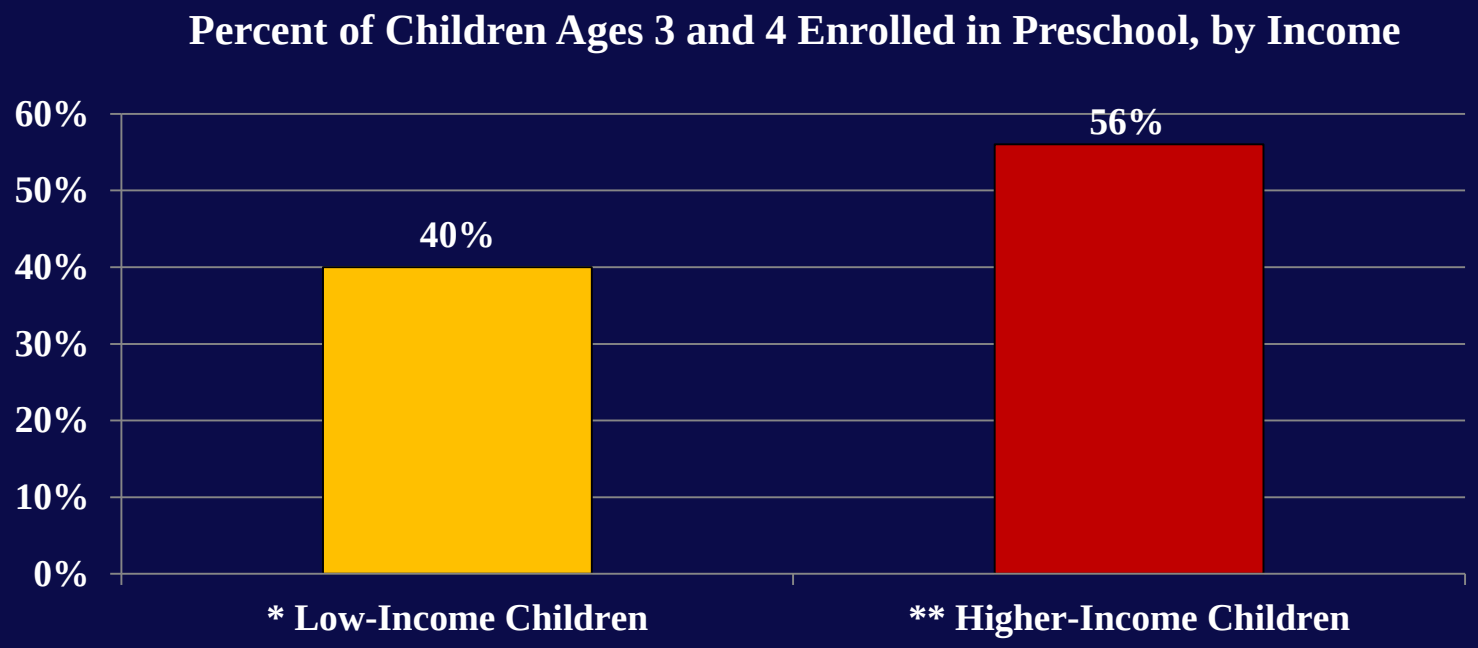
- ***Disparities exist by <u>geographic locale</u>***



Source: Education Week Research Center, 2015

The In/Equality Challenge

- ***Disparities exist by <u>income</u>***



- ***40% of 3- and 4-year-olds in low income (at least 200% of poverty level) families are enrolled in preschool, compared with 56% of children those ages in more affluent households***

Source: Education Week Research Center, 2015

The Challenge of Sustainability

- ***Finance***
  - Revenues from the federal government are inconsistent and not guaranteed
  - Long-term fiscal planning is almost non-existent
  - Revenue generation strategies are multiple, but not systemically planned
  - Financing schemes tend to focus on quantity, not quality
  - The durability of state investments also vary
    - Funding decisions are highly inconsistent and episodic

The Challenge of Sustainability

- ***Governance***
  - Because there are so many disparate funding streams, no single entity governs early childhood at the federal or state level
  - Federal level has funding in Departments of Education, Health and Human Services, Agriculture, Labor, with 72 separate programs
  - State level, equal variety
  - Programs are constantly changing

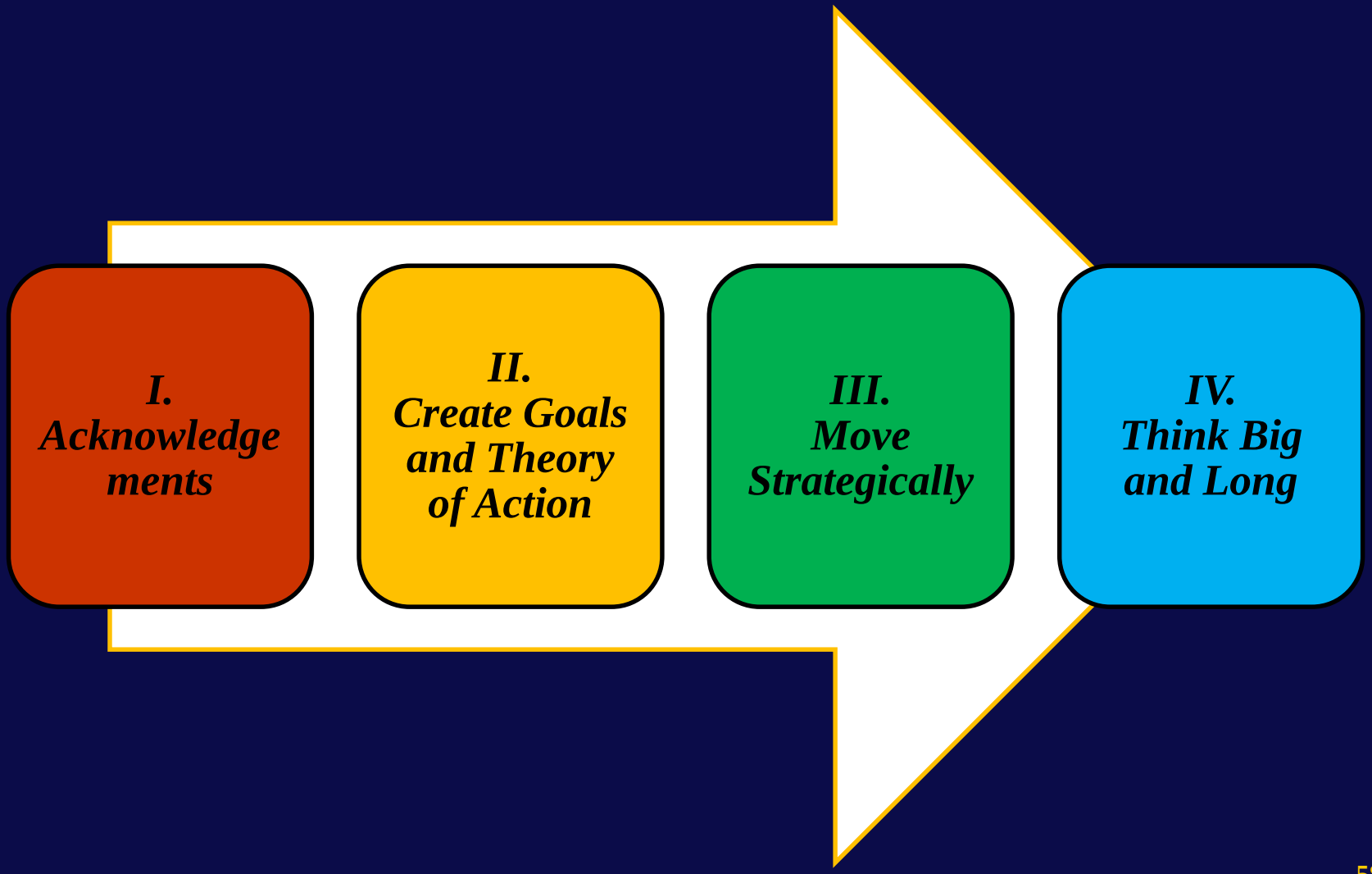
The Challenge of Sustainability

- *ECE is NOT K-12*

	Pre-K/ECE	***K-12***
Governance	Nothing formalized	State Boards of Ed. Local Boards of Ed.
Finance	Multiple, chaotic funding (72 federal streams)	Guaranteed tax base
Professional Certification	None universally required	Required to teach
Regulation	Base is state required; all else is voluntary	Required accreditation

Part V:
Next Steps

Four Strategies



Step I: Acknowledgements

- ***Four acknowledgements:***

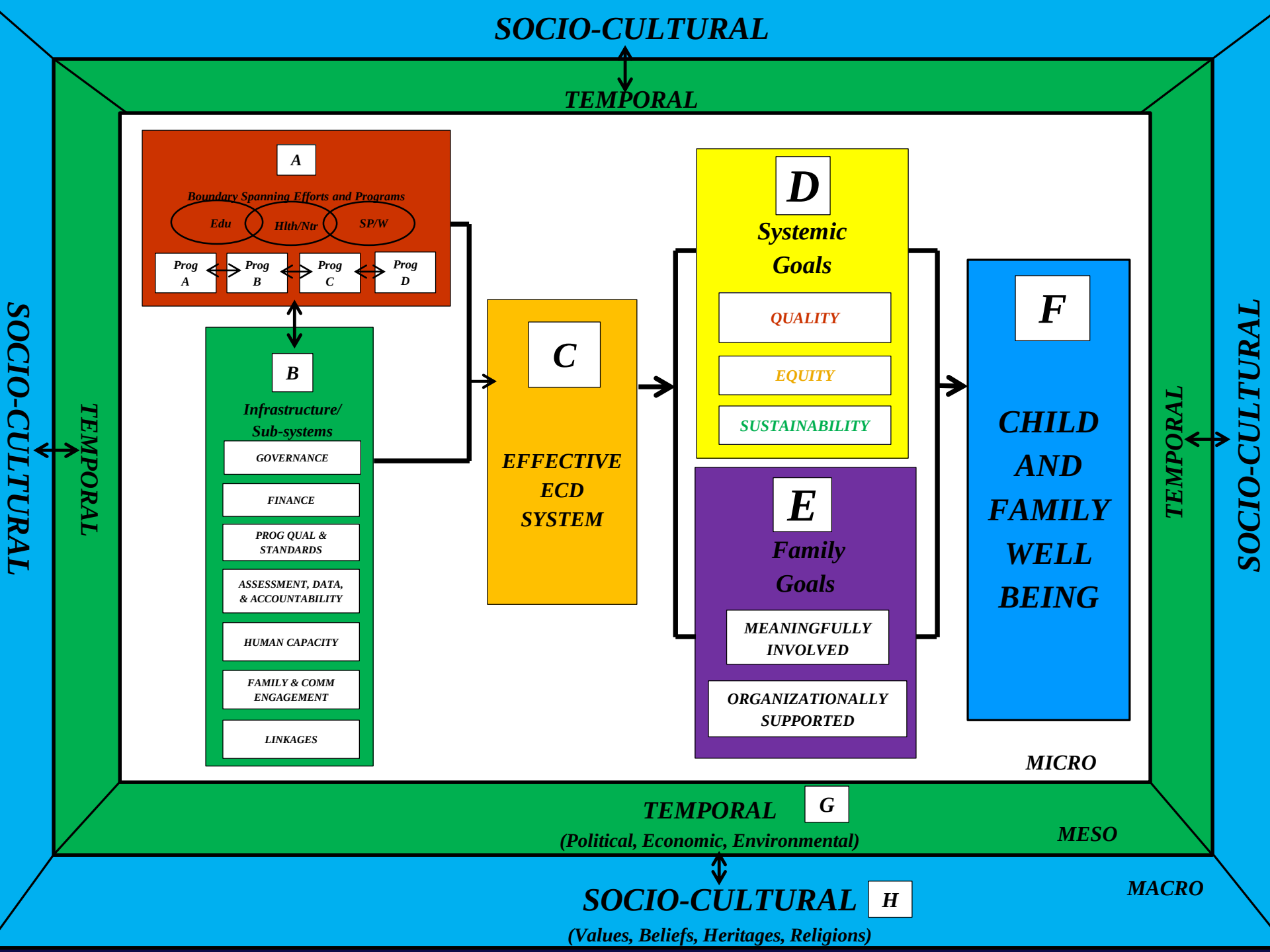
1. Hard to work on all systems at once
    - Can't keep track
    - So many demands on states
    - So many people and projects demanding time, energy, and effort
    - Worry: capacity drain
2. No comprehensive picture
    - Everybody working on separate parts
    - Same general goal, but the goal for each little peg is paramount–demands for programs to be sustained
    - Functioning without understanding what we are producing–ironic in an age of such increased technology
        - But nobody sees the picture as a whole

Step I: Acknowledgements

- ***Four acknowledgements, continued:***

3. No research paradigm
    - To guide comprehensive analysis
    - Systems research and implementation research are very good as conceptual guides–very hard to evaluate
4. No actionable frame
    - Not clear where to begin, where to end
    - No universal pathway to follow
    - Implementing a program is easy

Step II: Create Goals/Theory of Action


SOCIO-CULTURAL
TEMPORAL
SOCIO-CULTURAL
TEMPORAL
A
Boundary Spanning Efforts and Programs
Edu
Hlth/Ntr
SP/W
Prog A
Prog B
Prog C
Prog D
B
Infrastructure/ Sub-systems
GOVERNANCE
FINANCE
PROG QUAL & STANDARDS
ASSESSMENT, DATA, & ACCOUNTABILITY
HUMAN CAPACITY
FAMILY & COMM ENGAGEMENT
LINKAGES
C
EFFECTIVE ECD SYSTEM
D
Systemic Goals
QUALITY
EQUITY
SUSTAINABILITY
E
Family Goals
MEANINGFULLY INVOLVED
ORGANIZATIONALLY SUPPORTED
F
CHILD AND FAMILY WELL BEING
MICRO
TEMPORAL
SOCIO-CULTURAL
TEMPORAL
SOCIO-CULTURAL
TEMPORAL
G
(Political, Economic, Environmental)
MESO
SOCIO-CULTURAL
H
(Values, Beliefs, Heritages, Religions)
MACRO

Step II: Create Goals/Theory of Action

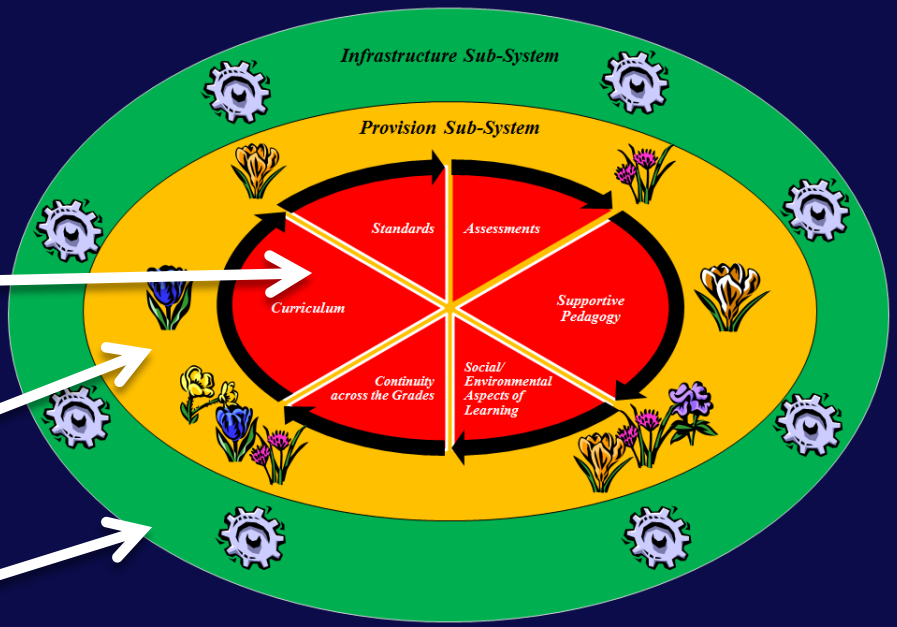
D

Systemic Goals

QUALITY

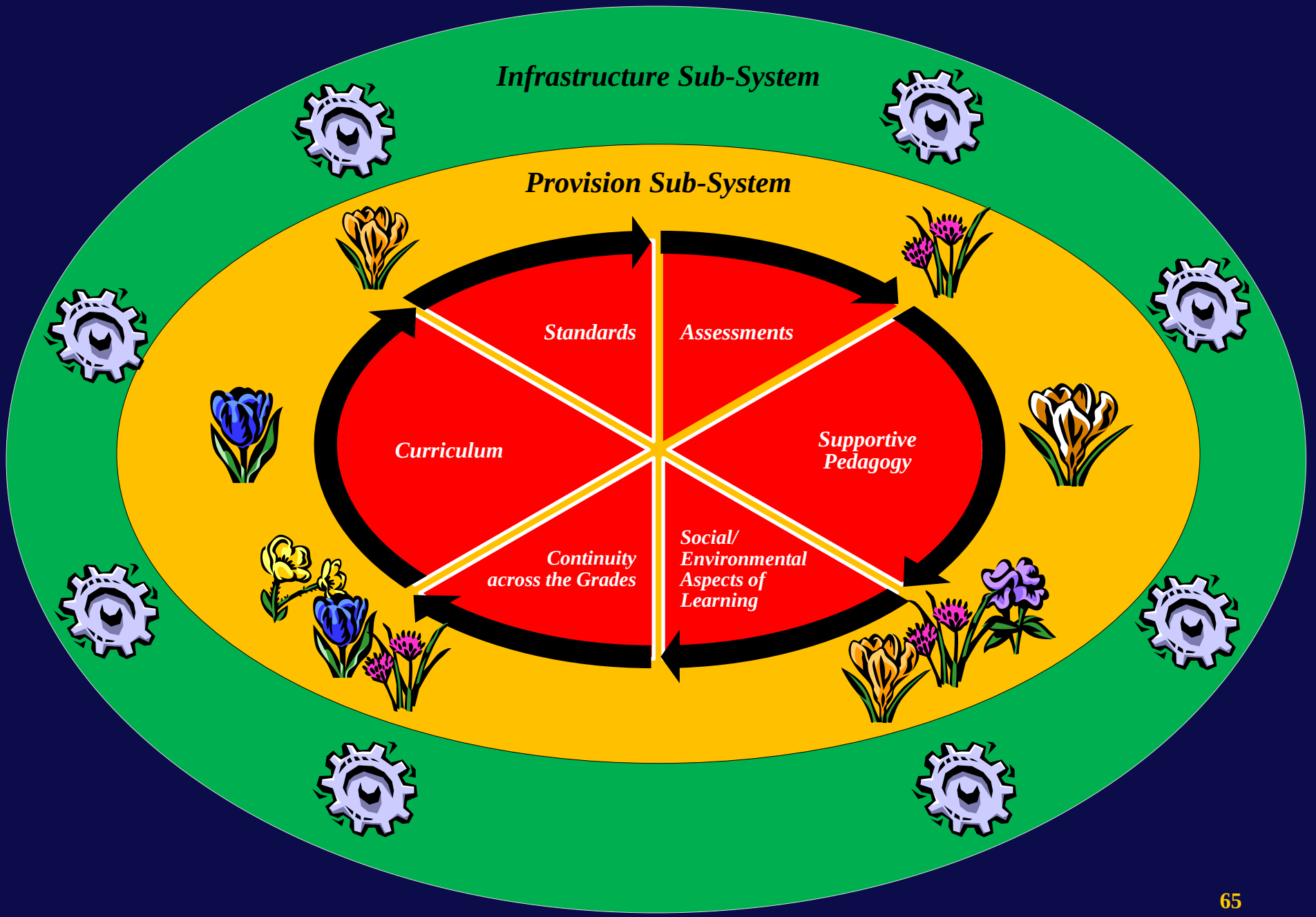
EQUITY

SUSTAINABILITY



Step III: Move Strategically

- ***Lots of options for each of us and for each of the institutions in which we work***
- ***Question is how to decide where to focus***
  - Consider strengths/weakness/unique capabilities
  - But need to consider the total context
- ***We hope for an integrated system perspective***
  - The embedded ovals are one little heuristic that will help us move forward


Infrastructure Sub-System
Provision Sub-System
Standards
Assessments
Curriculum
Supportive Pedagogy
Continuity across the Grades
Social/ Environmental Aspects of Learning

Step IV: Think Big and Long

- ***Envision the ideal***
- ***Think about the short- and long-term tomorrows (they get here fast)***
- ***Reach out to families and communities and join them in creating and realizing the vision***
- ***Think Differently:***
  - Think Systems AND Sub-systems


Think different.

Think Different

- ***Steve Jobs to John Sculley:***
  - "Do you want to spend the rest of your life selling water, or do you want a chance to change the world?"
- ***They did revolutionize six industries:***
  - Personal computers, animated movies, music, phones, tablet computing, and digital publishing

"The people who are crazy enough to think they can change the world are the ones who do."

» *Apple's "Think Different" Commercial 1997*
Foreword to Walter Isaacson's book, Steve Jobs