DEVELOPING A 21ST CENTURY LEARNING AND TEACHING ROADMAP

WHY WOULD K-12 DISTRICTS NEED TO DEVELOP A LEARING AND TEACHING ROADMAP?

MAJOR CHANGES IN FEDERAL INITIATIVES

NO CHILD LEFT BEHIND

◎ NCLB Passed In 2001 Set Academic Goals For K-12 Schools Through State Depts. of Ed.

◎ Schools Which Chronically Miss Goals Lose TITLE I Funds From US Dept. of Ed. (USDOE – TITLE 1 Funds Are Block Grants to States - Billions)

◎ Student Academic Achievement Improvement To Occur In Three Phases. Phase III 2013-2014.

◎ Phase III = 100% of All Student Meet Grade Level Expectations for Math and Reading

NO DISTRICT IN THE US CAN MEET THIS GOAL

NCLB WAIVERS

- Feds Could Not Politically Admit NCLB Was Broken – Created NCLB Waiver System

- Each State Can Apply for a NCLB Waiver But Application Includes (Key Points & Simplified):

  - Adoption of New, More Academically Rigorous Curriculum 2014-2015.

    - Can Develop Their Own But USDOE Must Approve OR Adopt Common Core State Standard (45 of 50 States Adopted CCS)
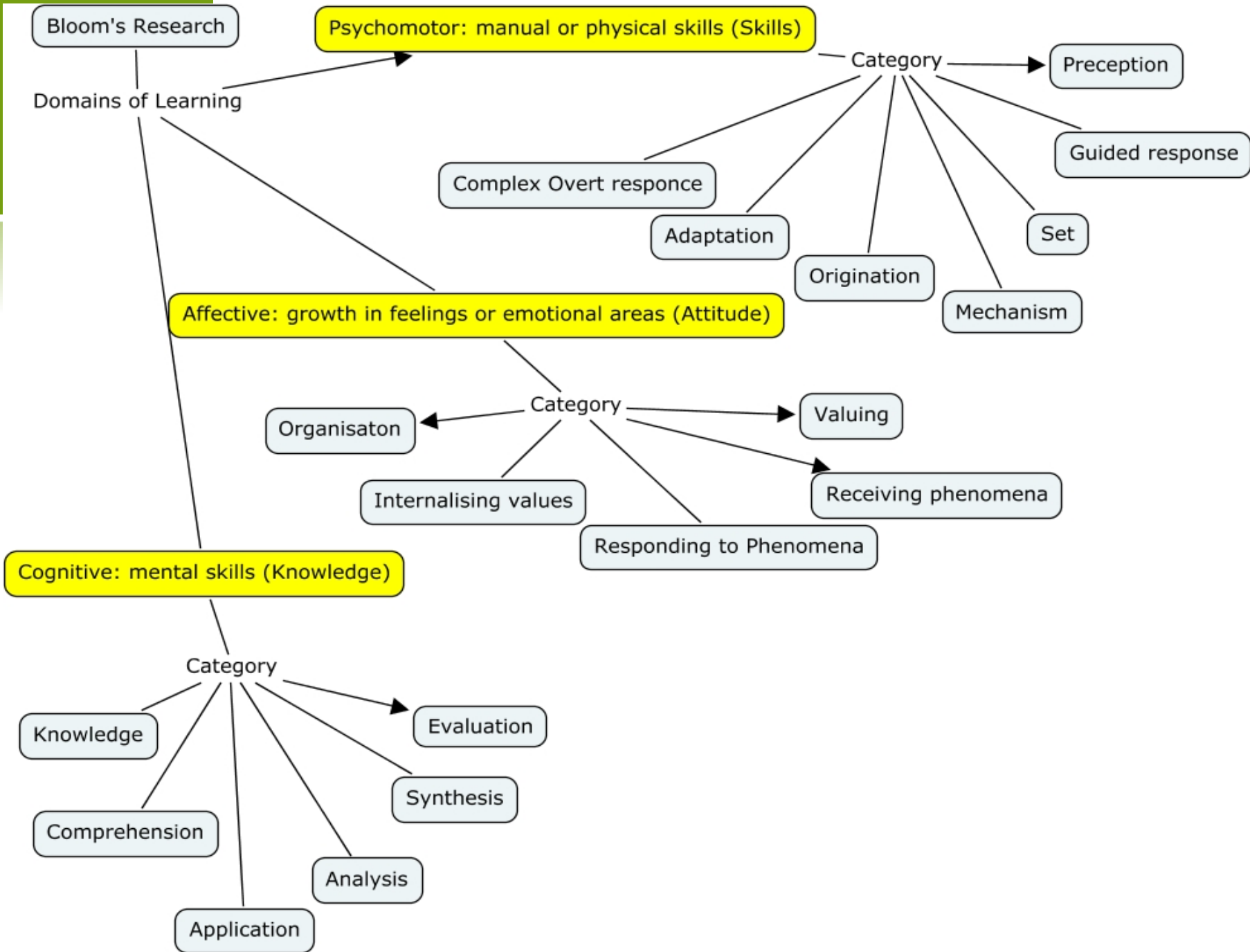
NCLB WAIVERS

- State Departments of Education Must Create New Teacher and Principal Evaluation Systems. Starts 2014-2015. Criteria:
  - 50% Based on Academic Achievement of Their Students (Assessment Score)
  - 50% Based on Adoption of 21st Century Teaching Methodologies (Student-Centered)
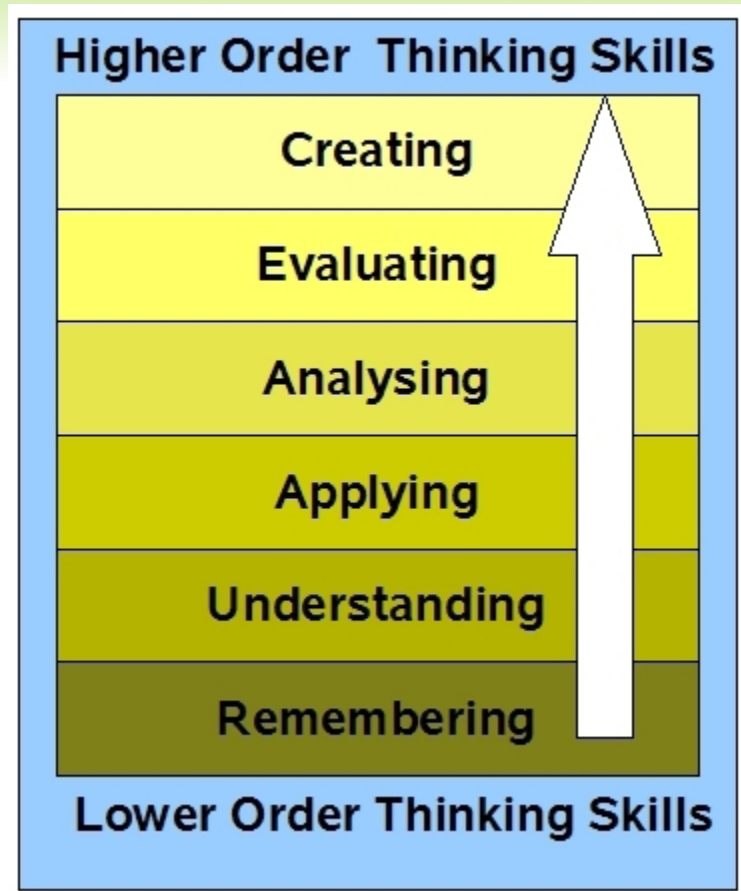- Teacher Who Chronically Miss "Adequate" Ratings Risk Loss of Licensure

NCLB WAIVERS

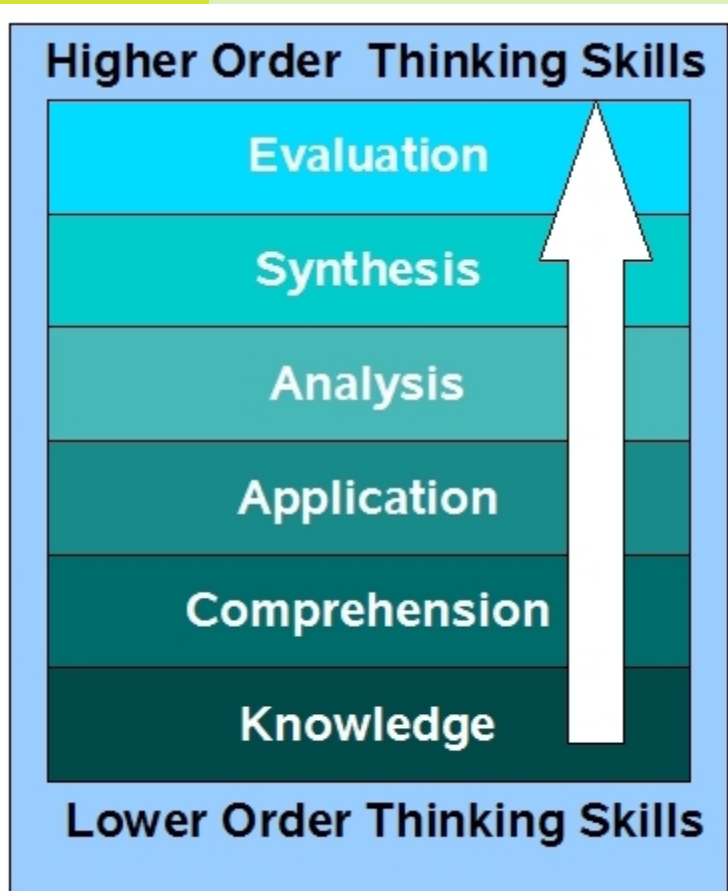◎ USDOE Created "Assessment" Grants for Entities To Create Assessment Tools Tied to CCS.

◉ Two Consortiums – PARCC and SBAC – State DOE Must Choose To Align With One Of The Two

◉ Both Require On-Line, Real-Time Student Access During Assessment s - Starting (Spring 2015)

◎ These Are Federal Reqs. – Tied to TITLE 1 Funds

◎ This is a Tsunami Heading for K-12 School Districts.

HOW PEOPLE LEARN

Bloom's Research

Domains of Learning

Psychomotor: manual or physical skills (Skills)

Category
- Preception
- Guided response
- Set
- Mechanism
- Origination
- Adaptation
- Complex Overt responce

Affective: growth in feelings or emotional areas (Attitude)

Category
- Organisaton
- Internalising values
- Responding to Phenomena
- Receiving phenomena
- Valuing

Cognitive: mental skills (Knowledge)

Category
- Knowledge
- Comprehension
- Application
- Analysis
- Synthesis
- Evaluation

Blooms Taxonomy Evolution
NOUNS to VERBS

Higher Order Thinking Skills

Left (Original)	Right (Revised)
Evaluation	Creating
Synthesis	Evaluating
Analysis	Analysing
Application	Applying
Comprehension	Understanding
Knowledge	Remembering

Lower Order Thinking Skills

ANDERSON - KRATHWOHL 2001

Blooms In Different Language

- Before We Can **Create** We M[...] **Remembered** , **Understood,** [...] and **Evaluated**

- Before We Can **Evaluate** Its Impact W[...] Must Have **Analyzed** It.

- Before We **Analyze** It We M[...] It.

- Before We Can **Apply** a Concept We Must **Understand** It.

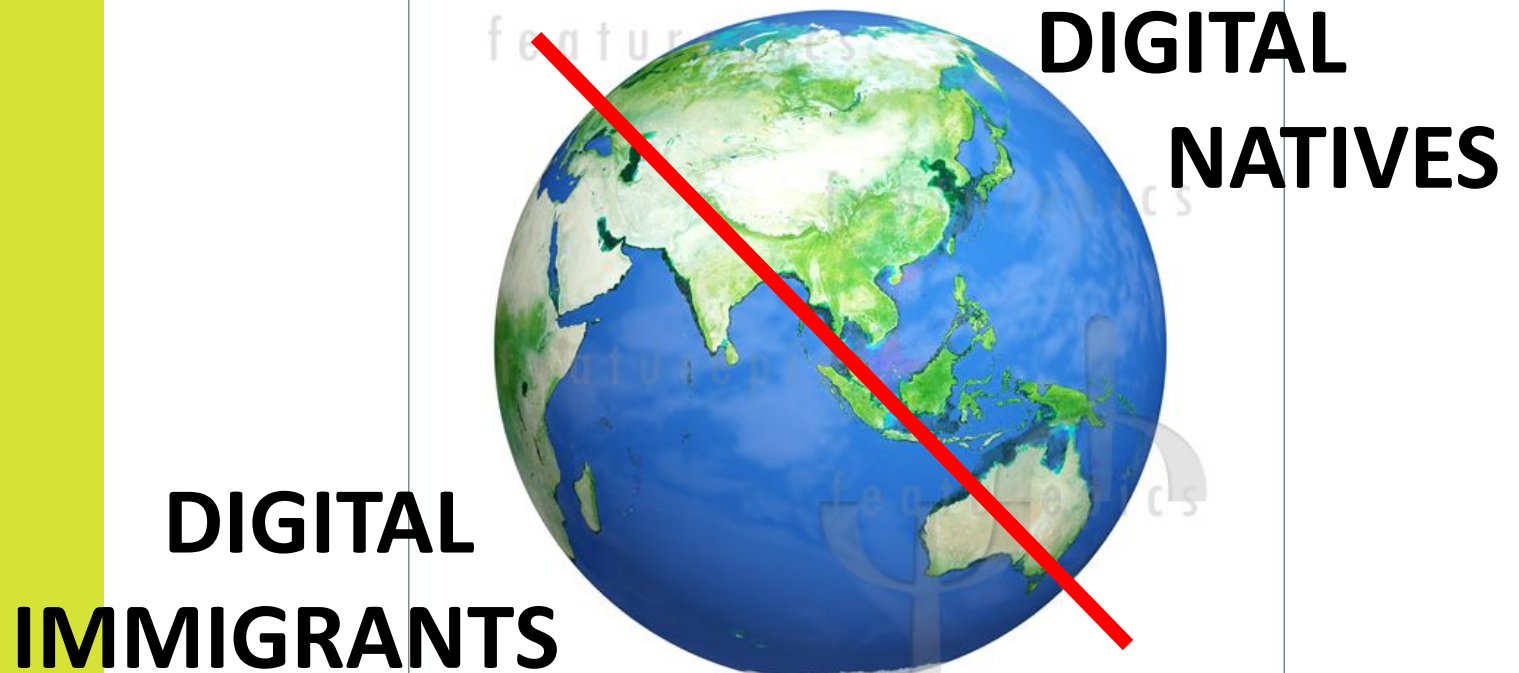- Before We Can **Understand** [...] to **Remember** It

Knowledge Creation

Knowledge Deepening

Knowledge Acquisition

CURRENT RESEARCH ON LEARNING RETENTION

SETTING THE TONE

MARK PRENSKY

DIGITAL NATIVES

DIGITAL IMMIGRANTS

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Prensky's Two Types of People

DIGITAL IMMIGRANT

- SOMEONE WHO REMEMBERS A TIME WHEN THERE WAS NO TECHNOLOGY
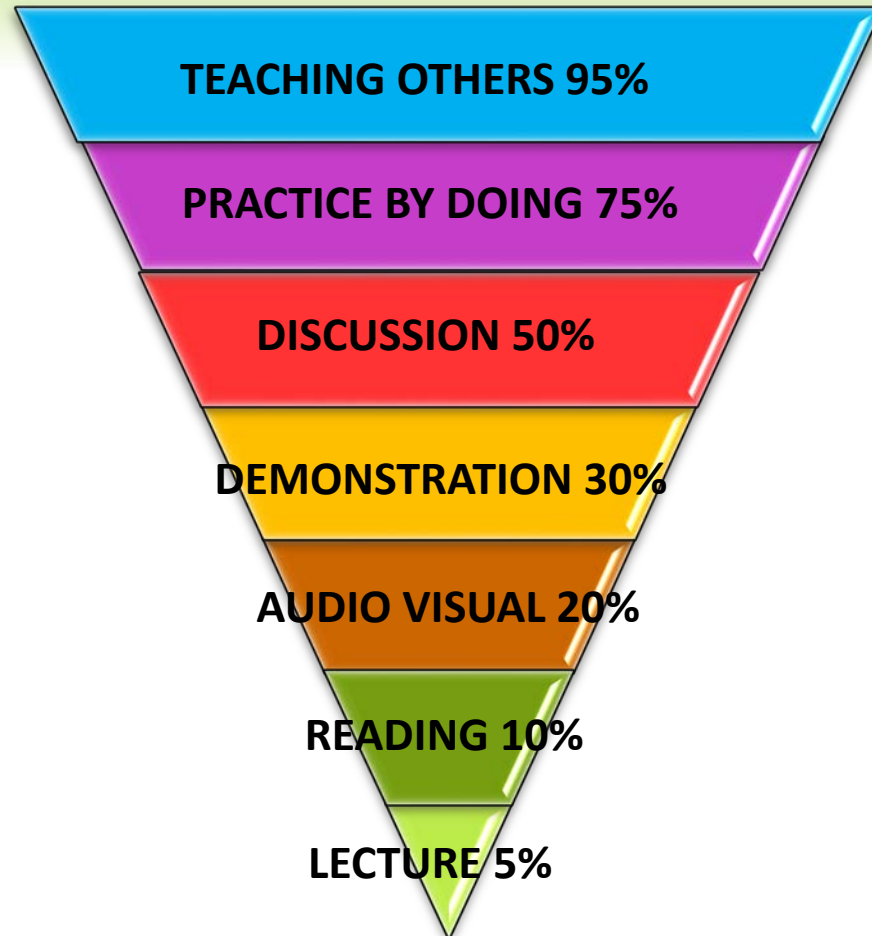
DIGITAL NATIVE

- SOMEONE WHO CANNOT REMEMBER A TIME WITHOUT TECHNOLOGY

SIMILARITIES

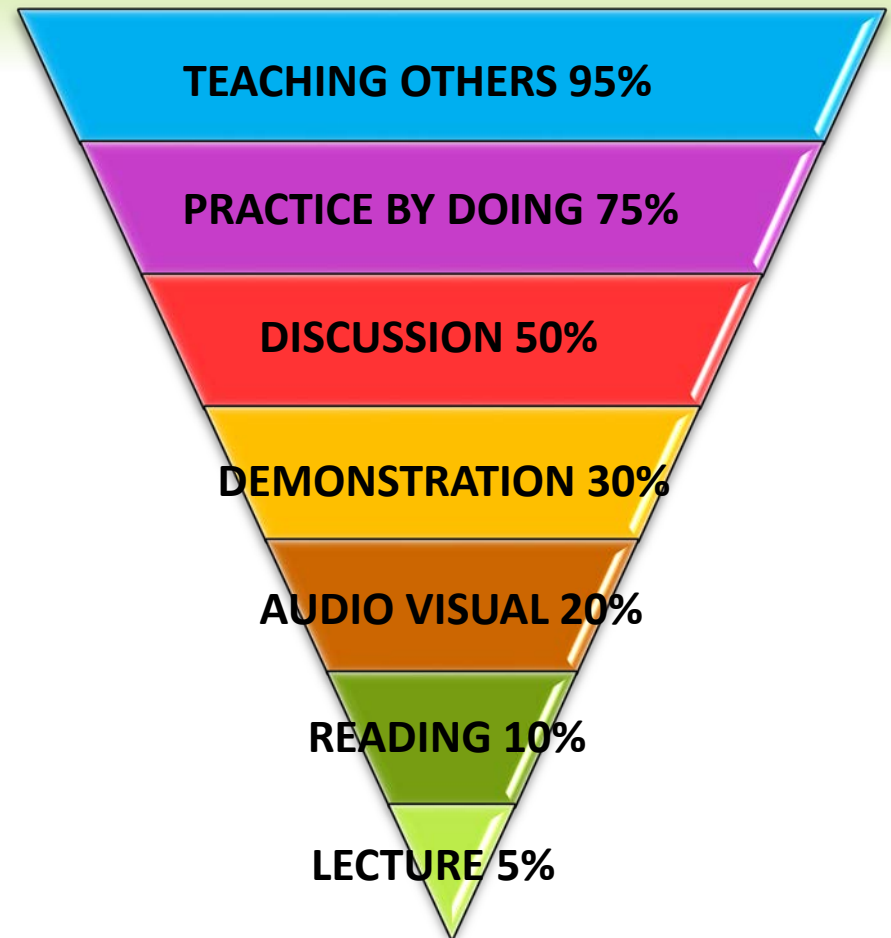Higher Order Thinking Skills

Creating

Evaluating

Analysing

Applying

Understanding

Remembering

Lower Order Thinking Skills

TEACHING OTHERS 95%

PRACTICE BY DOING 75%

DISCUSSION 50%

DEMONSTRATION 30%

AUDIO VISUAL 20%

READING 10%

LECTURE 5%
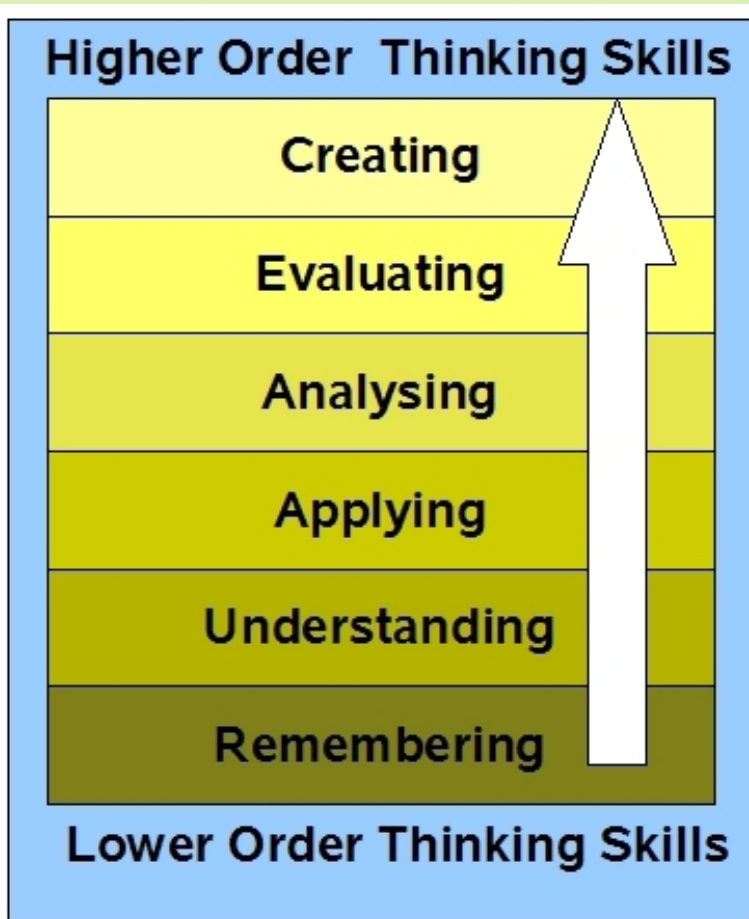
STUDENT CENTERED LEARNING

◉ **PROJECT BASED LEARNING**

◉ **HYBRID PROJECT BASED LEARNING**

◉ **STEM / STEAM**

◉ **LEARNING COMMUNTITIES**

◉ **CONSTRUCTIONIST**

◉ **ETC…..**

Prensky's Purpose of Technology

◎ **The Role of Technology In The Classroom Is To Support The New 21st Century Teaching Paradigm**

◎ **Technology As the new No2 Pencil – Always Available and Everywhere**
  - ⊙ **Desktops, Laptops**
  - ⊙ **Tablets**
  - ⊙ **E-Readers**
  - ⊙ **Smartphones**

THE "OLD DAYS"

Traditional Information

Didactic Channel

Teacher (Information Gatekeeper)

Learner/ Absorber

THE "NEW DAZE"
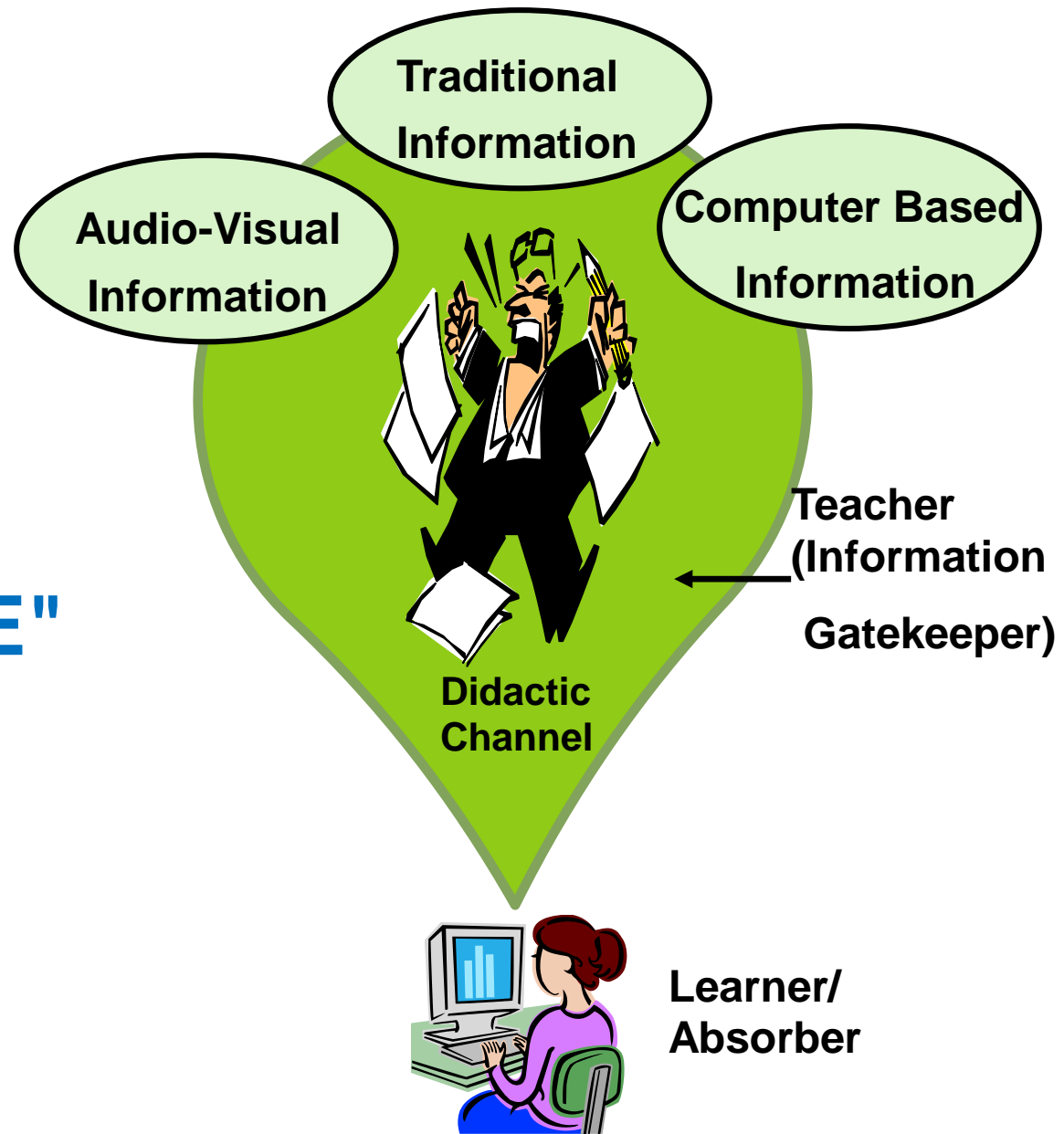
Traditional Information

Audio-Visual Information

Computer Based Information

Teacher (Information Gatekeeper)

Didactic Channel

Learner/ Absorber

STUDENT CENTERED
21ST CENTURY T+L ELEMENTS

DELIVERY METHODOLOGIES

DATA DRIVEN EXPERIENCES

21st CENTURY SKILLS

COMMON CORE

BLENDED LEARNING

COMMON CORE

◎ **Academic Rigor (Differential 40%- 60%)**

◎ **College and Career Ready Outcomes**

◎ **LOTS to HOTS**

   ○ **Knowledge Acquisition**

   ○ **Knowledge Deepening**

   ○ **Knowledge Creation**

21ˢᵀ CENTURY SKILL SETS

◎ **Critical Thinking – Problem Solving**

◎ **Collaboration**

◎ **Communication**

◎ **Creativity and Innovation**

www.P21.org

DELIVERY METHODOLOGIES

- Discussions
- Hands On Projects
- Student As Teacher
- Individualized Learning
- One To Many

DATA DRIVEN STUDENT EXPERIENCE

- Aligned to Curriculum

- Based on Student Readiness

- Student Experience Contains Formative Assessments

- Differentiation

- Data Teams

BLENDED LEARNING

- Differentiated
- Web Based
- On Campus – Off Campus
- Synchronous – Asynchronous
- Technology As No.2 Pencil

PLANNING FOR 21ST CENTURY LEARNING AND TEACHING

CREATING A ROADMAP

IF THIRTY PERCENT (30%) OF THE MEMBERS OF AN ORGANIZATION ADOPT CHANGE – **THE ORGANIZATION CHANGES**

WHAT/ HOW STUDENTS LEARN

FACILITIES

INFRA – STRUCTURE

PROFESSIONAL DEVELOPMENT

WHAT/ HOW KIDS LEARN

SYSTEMS & LOOSE EQUIPMENT

POLICIES & PROCESSES

TECHNICAL SUPPORT
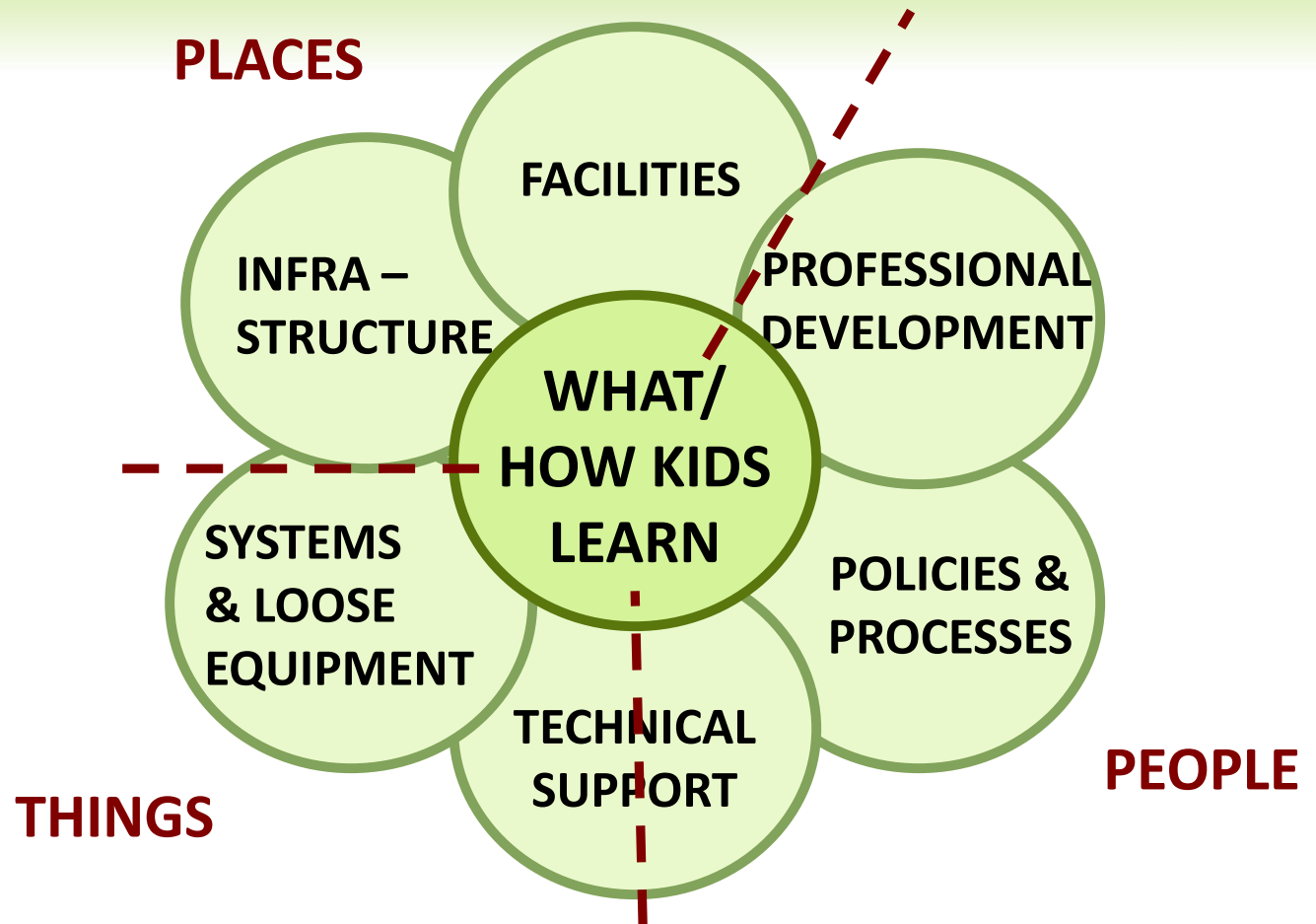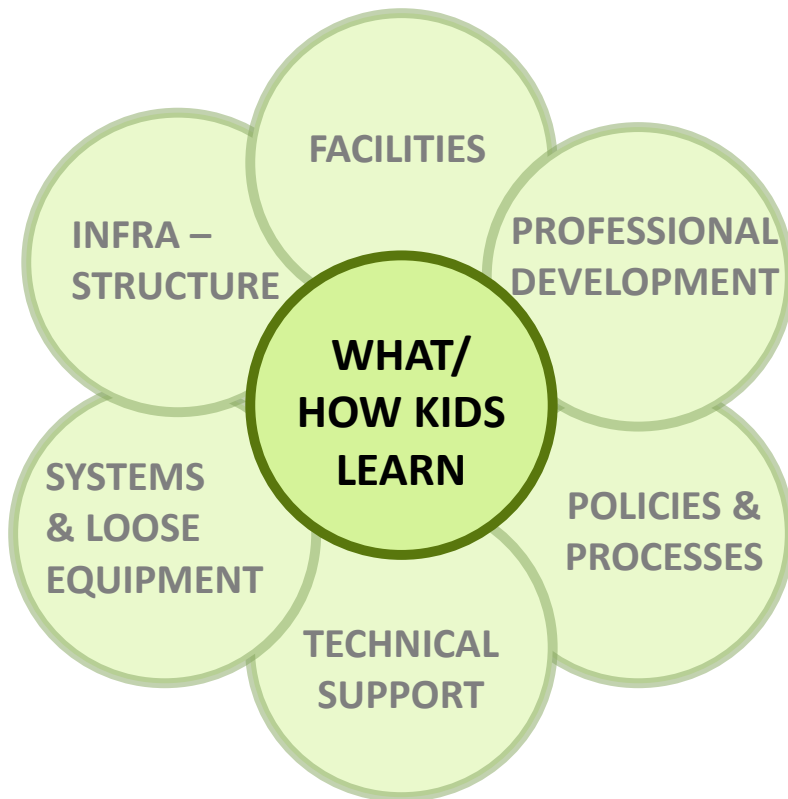
- Is There A Vision
- Whose Vision Is It?
- Student-Centered?
- Teacher Align To Standards?
- Student Tech Literacy?
- Real-Time Formative Assessments?
- Equity of Access

DATA DRIVEN STUDENT LEARNING

CURRICULUM CALENDAR PACING GUIDELINE
STUDENT READINESS
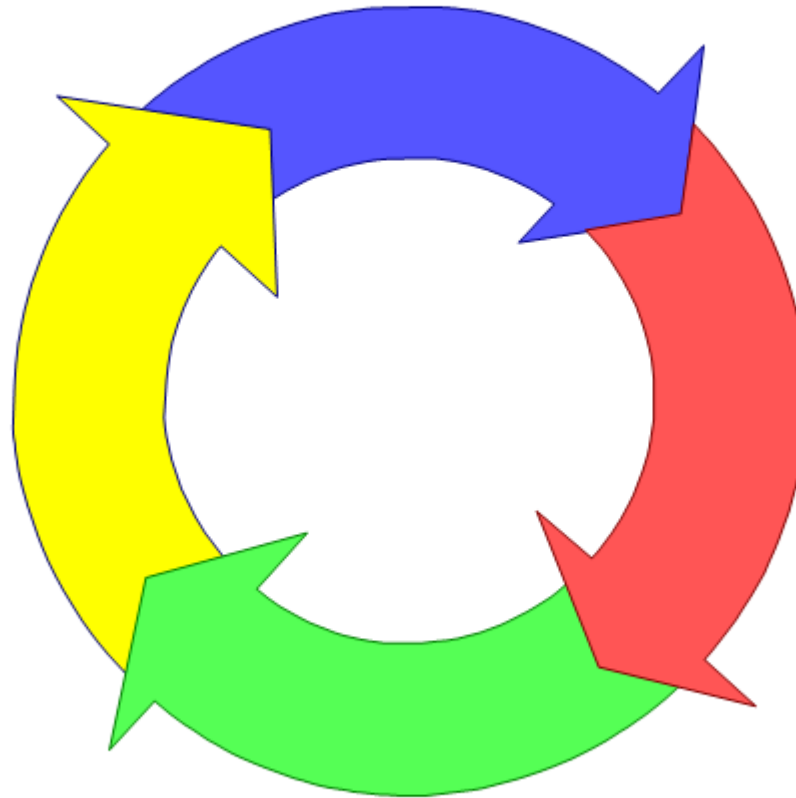
STUDENT EXPERIENCE
INCLUDES CURRICULUM BENCHMARKING (ASSESSMENTS)

ALIGN TO CURRICULUM

INSTRUCTIONAL ANALYSIS
DIFFERENTIATION

PROFESSIONAL DEVELOPMENT

FACILITIES

INFRA – STRUCTURE

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WHAT/ HOW KIDS LEARN

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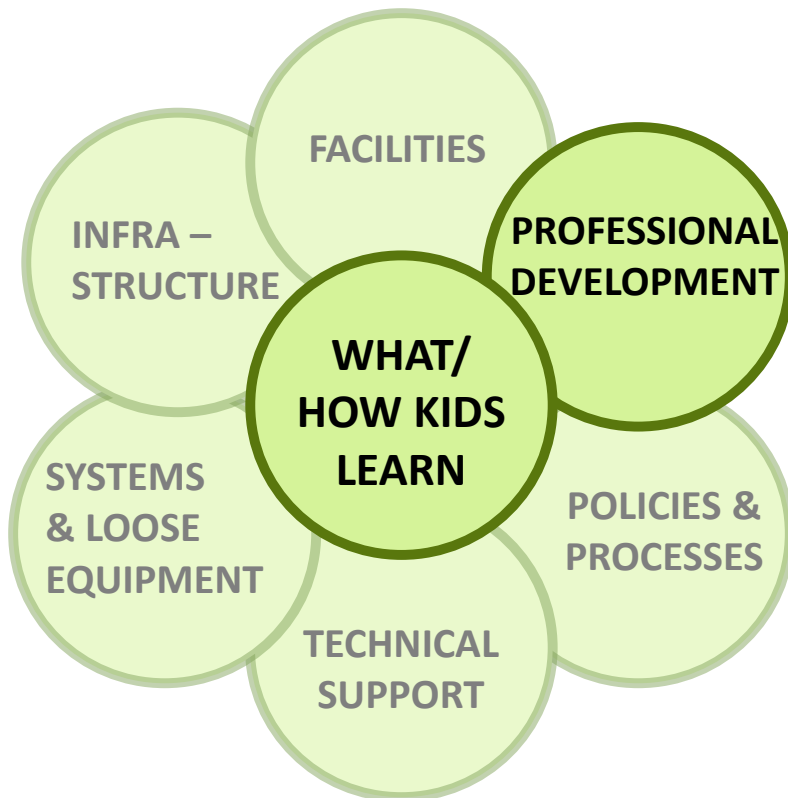
- ◎ Scope and Sequence Defined?
- ◎ PD Scheduled/Reactive
- ◎ PD Formal/Ad Hoc
- ◎ PD Central/Distributed
- ◎ Teacher Tech Literacy
- ◎ Best Practices
- ◎ Systems
  - ○ SIMS, LMS, Social Media, Student Data Dashboard

Staff Professional Development
Scope and Sequence Matrix

	Teacher	Media Specialist	Instruct. Specialist	Principal	Administrator	Classified

21st CENTURY LEARNING and TEACHING

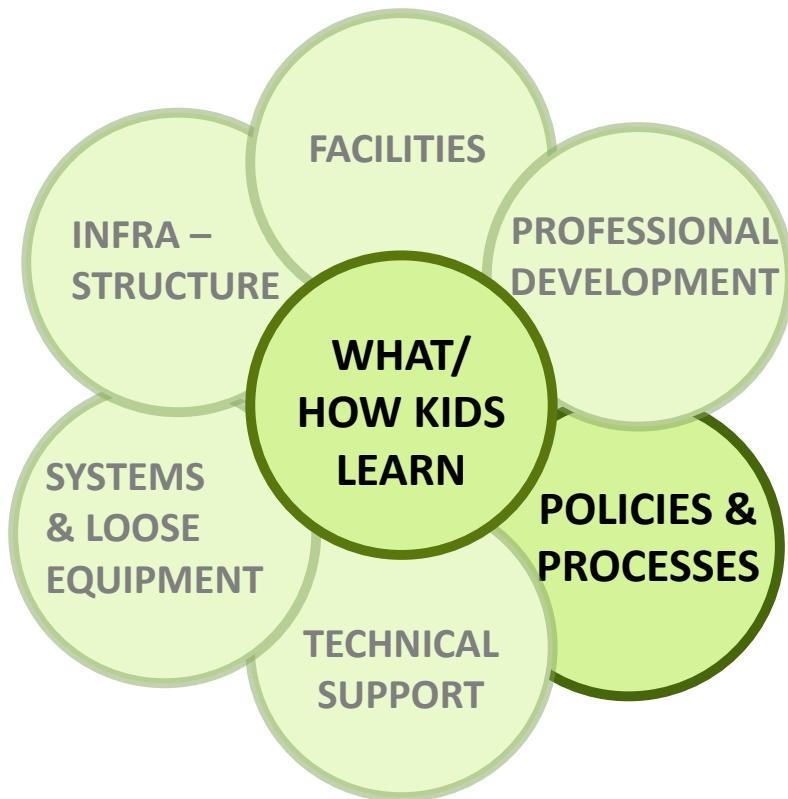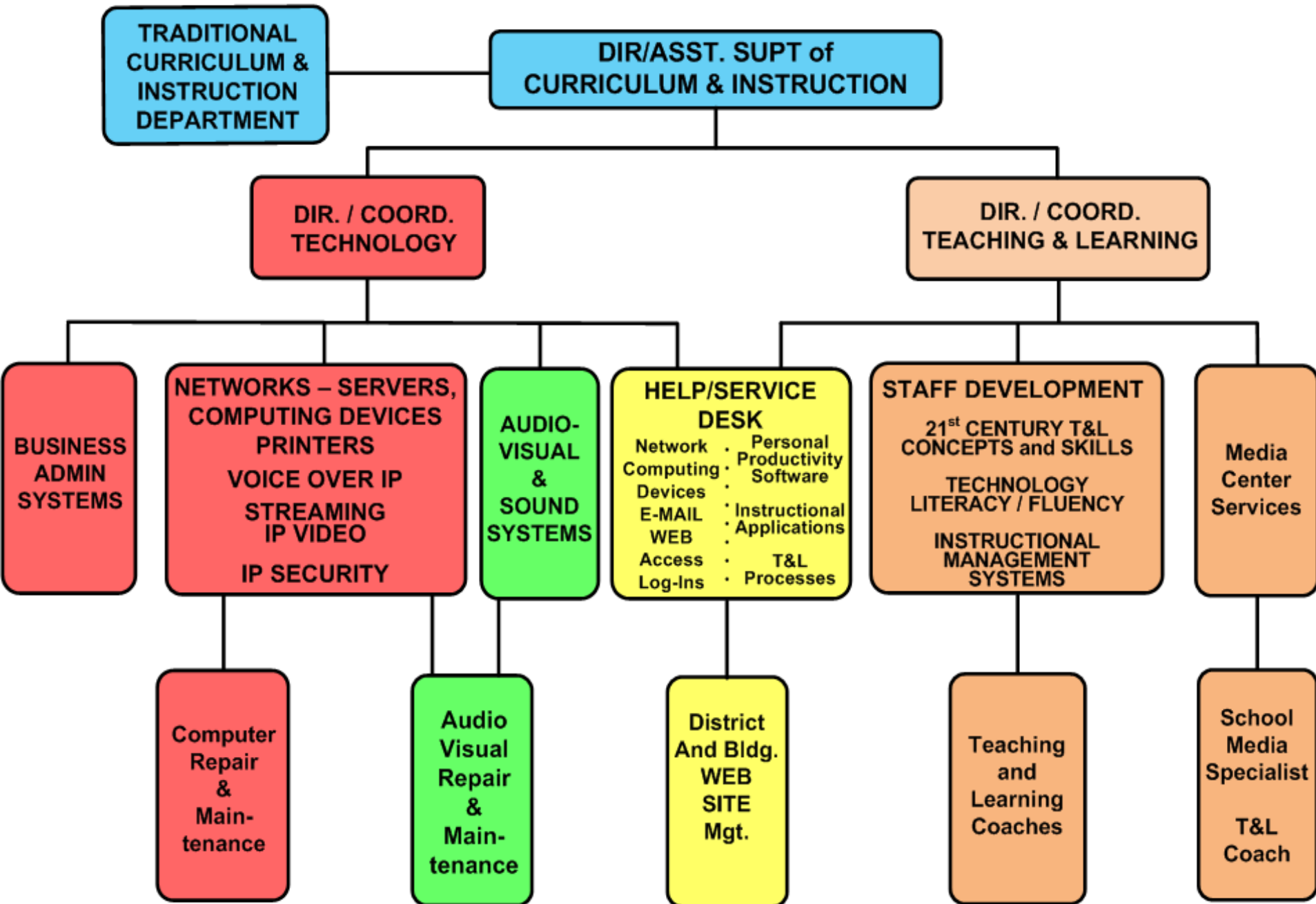| Level	Teacher / Media Specialist / Instruct. Specialist	Principal	Administrator	Classified
MASTER	Advanced Level AND Portfolio of 21st Century L&T Student Experiences Designed By Teacher (Individually or In A Group)	Demonstrate Knowledge of 21st Century L&T Concepts & Practices	Demonstrate Knowledge of District 21st Century L&T Concepts & Policies	Not Applicable
ADVANCED	Majority of Student Experiences Are Oriented to 21st Century L&T Concepts and Practices	– – – – –	– – – – –	
INTERMEDIATE	Starting to Use Student Experiences Oriented to 21st Century L&T Concepts and Practices (33%)	Can Assess and Manage L&T Practices Of Their Teachers	Can Assess and Manage L&T Practices Of Principals	
BASIC	Demonstrate Knowledge of 21st Century L&T Concepts and Practices			

TECHNOLOGY LITERACY / FLUENCY

Level	Teacher / Media Specialist / Instruct. Specialist	Principal	Administrator	Classified
ADVANCED	Portfolio of Student Experiences Designed By The Staff Member (Individually or In A Group) With Embedded Technology	Demonstrate Basic Computer Skills and Use Personal Productivity Tools	Demonstrate Basic Computer Skills and Use Personal Productivity Tools	Demonstrate Basic Computer Skills and Personal Productivity Tools Equal to Job Description Minimum Requirements
INTERMEDIATE	Demonstrate Computer Skills and Personal Productivity Tools Equal to Grade Level or Job Description Minimum Requirements	– – – – –	– – – – –	
BASIC	Demonstrate Basic Computer Skills – Troubleshooting - Personal Productivity Tools	Can Assess Skill Level of Employees They Manage	Can Assess Skill Level of Employees They Manage	

DISTRICT POLICIES AND PROCESSES

FACILITIES

INFRA – STRUCTURE

PROFESSIONAL DEVELOPMENT

WHAT/ HOW KIDS LEARN

SYSTEMS & LOOSE EQUIPMENT

POLICIES & PROCESSES

TECHNICAL SUPPORT

◎ **Organizational Structure**

◎ **Software Adoption Process**

◎ **Accountability**

  ○ **District**

  ○ **Building**

  ○ **Classroom**

◎ **Quality Management**

◎ **Formal Comm. Roles**

◎ **Funding**

IDEAL STRUCTURE FOR 21st CENTURY T&L With TECHNOLOGY SUPPORT

TRADITIONAL CURRICULUM & INSTRUCTION DEPARTMENT — **DIR/ASST. SUPT of CURRICULUM & INSTRUCTION**

- **DIR. / COORD. TECHNOLOGY**
  - **BUSINESS ADMIN SYSTEMS**
  - **NETWORKS – SERVERS, COMPUTING DEVICES PRINTERS**
    VOICE OVER IP
    STREAMING IP VIDEO
    IP SECURITY
    - Computer Repair & Main-tenance
  - **AUDIO-VISUAL & SOUND SYSTEMS**
    - Audio Visual Repair & Main-tenance
  - **HELP/SERVICE DESK**
    - Network
    - Computing Devices
    - E-MAIL
    - WEB
    - Access
    - Log-Ins
    - · Personal Productivity Software
    - ·
    - · Instructional Applications
    - · T&L Processes
    - District And Bldg. WEB SITE Mgt.

- **DIR. / COORD. TEACHING & LEARNING**
  - **STAFF DEVELOPMENT**
    21st CENTURY T&L CONCEPTS and SKILLS
    TECHNOLOGY LITERACY / FLUENCY
    INSTRUCTIONAL MANAGEMENT SYSTEMS
    - Teaching and Learning Coaches
  - **Media Center Services**
    - School Media Specialist
    - T&L Coach

TECHNICAL SUPPORT

- Tech Systems – Type & Quantity of Personnel
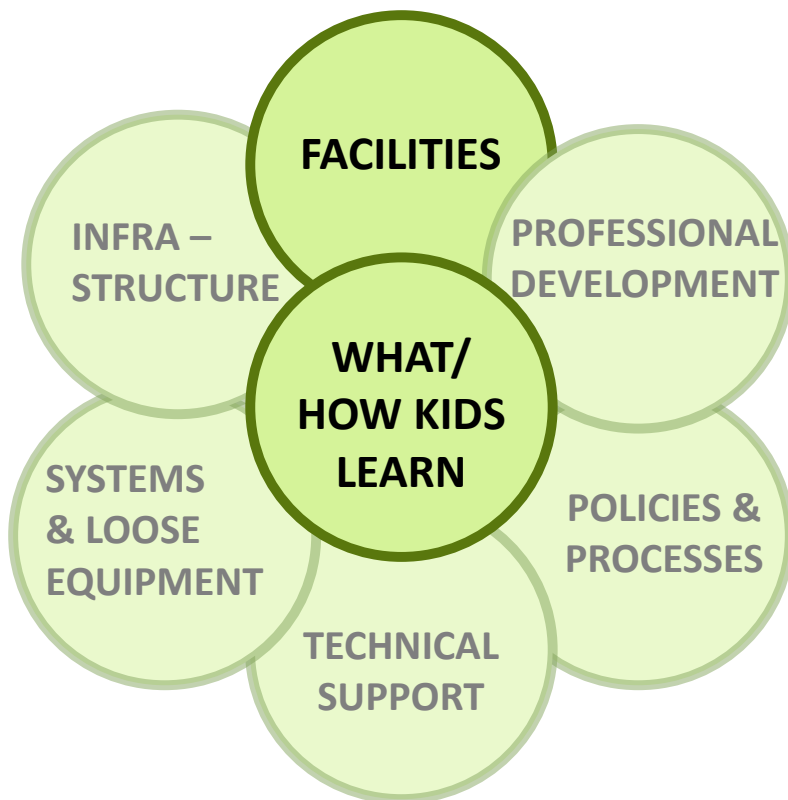- Learning Coaches – Type & Quantity of Personnel
- ITIL Service Desk
- ITIL Processes (Information Technology Infrastructure Library)
- Servers and Apps

FACILITIES

INFRA – STRUCTURE

PROFESSIONAL DEVELOPMENT

WHAT/ HOW KIDS LEARN

SYSTEMS & LOOSE EQUIPMENT

POLICIES & PROCESSES

TECHNICAL SUPPORT

FACILITIES

- **Flexible Learning Spaces**
- **Adjacent Learning Spaces**
- **Flexible Furniture**
- **Technical Spaces**
- **Physical Security**
- **After Hour Access**

INFRASTRUCTURE

- **FACILITIES**
- **INFRA – STRUCTURE**
- **PROFESSIONAL DEVELOPMENT**
- **WHAT/ HOW KIDS LEARN**
- **SYSTEMS & LOOSE EQUIPMENT**
- **POLICIES & PROCESSES**
- **TECHNICAL SUPPORT**
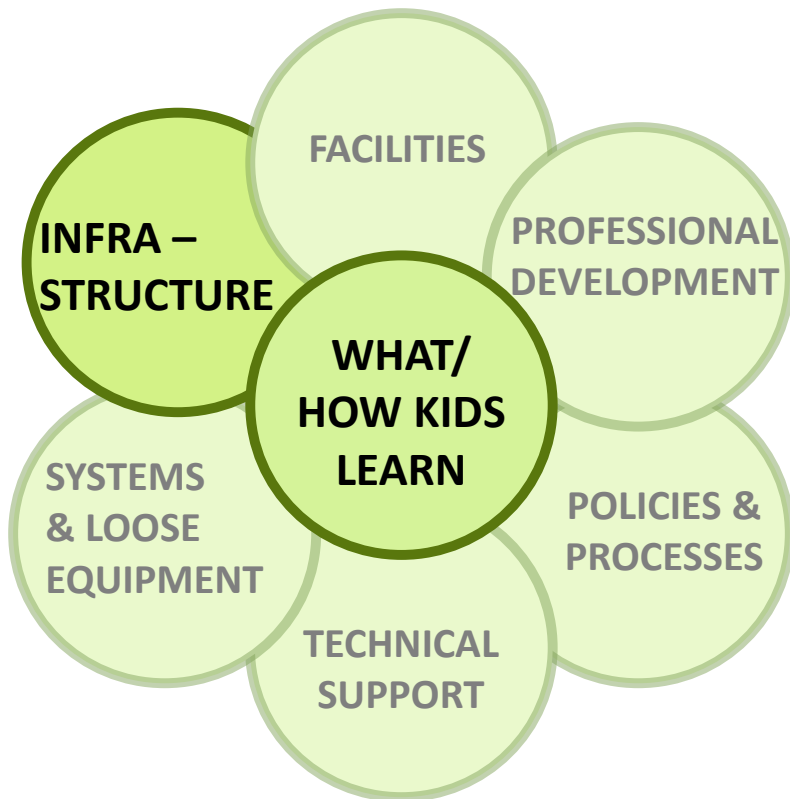
- AC Power
- HVAC
- Cable Pathways
  - Primary
  - Secondary
- Lighting
  - Direct
  - Ambient

SYSTEMS AND LOOSE EQUIPMENT

FACILITIES

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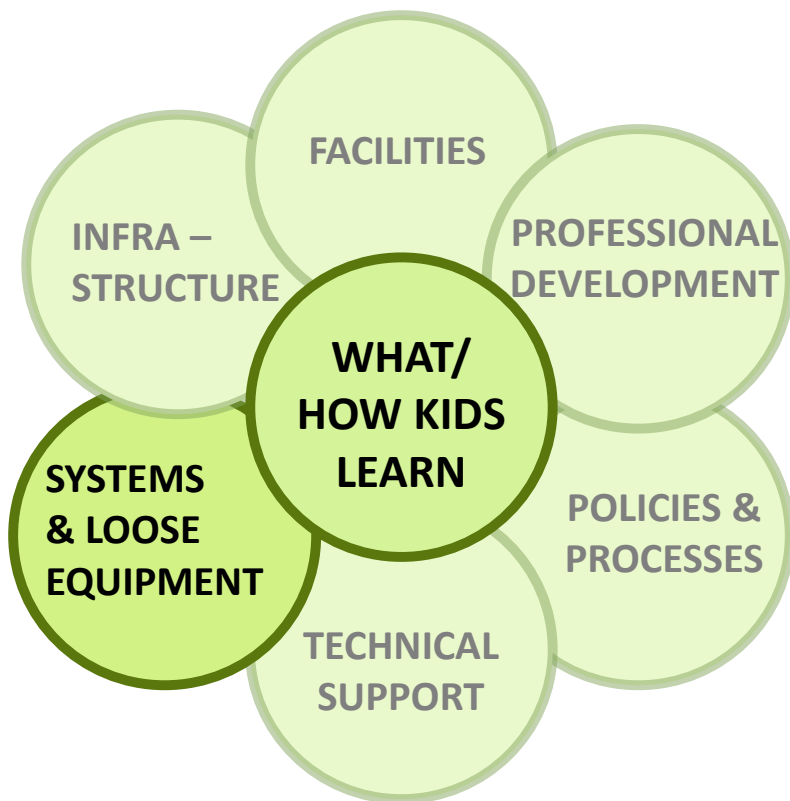
- ◎ **Student, Teacher Devices**
- ◎ **Data – Wired & Wireless**
- ◎ **Phone**
- ◎ **Paging and Sound**
- ◎ **Integrated AV Systems for Classrooms**
- ◎ **Access Control and Video Surveillance**
- ◎ **Student & Teacher Apps**

COMPOSITE VIDEO

WIRELESS KEYBOARD

DOCUMENT CAMERA

PRESENTATION DEVICE

HDMI INPUT

AV CONTROL

HDMI INPUT (Teacher or Student Device)

MAIN PRESENTATION STATION

TEACHER IR MIC

STUDENT IR MIC

AV Control IR Audio Power Amp

NETWORK RESOURCES

BUILDING LAN

CEILING SPEAKERS

Mute Override

Wall As Projection / Writing Surface

Video Presentation Tool

VIDEO PROJECTOR

PAGING

VoIP PHONE

TEACHERS COMPUTING DEVICE

BLUE TOOTH

TEACHER DESK

Wireless AP

Two USB or HDMI Monitor With Keyboard For Small Group Collaboration Using Student Device

OR

STUDENT COMPUTING DEVICES

Student and Teacher Devices Connected to Main Presentation Computing Device Using WiFi Network and Up To Projector

COHERENT PLANNING PROCESS