Early Learning Success
an Essential Step toward Equity and Opportunity

Bob Sornson, Ph.D.
Earlylearningfoundation.com
The Age of Learning, Ideas, and Innovation

• New ideas and discoveries
• The opportunity to share ideas
• An age of innovation and opportunity for those who love to learn, have good learning skills, self-management skills, and the ability to collaborate with others
Change based on information, ideas, and innovation

- Information access and sharing
- Big data
- Robots and automation
- Medical advances
- Artificial intelligence
- 3-D printing
- Jobs for the creative, empathetic, collaborative, and technically fluent
What a time to be a learner!
One-Size-Fits-All
Curriculum Driven Instruction
Devours Vulnerable Children
As the World Changed, We Doubled Down on the Standardized Delivery of Instruction

• A Nation at Risk
• Goals 2000
• No Child Left Behind
• CCSS
• PARCC and Smarter Balance
• Race to the Top
• School Improvement Grants
In the age of learning, our national learning outcomes are stagnant
Decades of School Reform

NAEP Long Term Reading Trends, Average Scaled Scores

Decades of School Reform
NAEP Long Term Math Trends, Average Scaled Scores
Source: National Assessment of Educational Progress, *Trends in Academic Progress*, 2012
Decades of School Reform

PISA International Testing

US PISA Results in Mathematics, Reading, & Science 2000 - 2012
And stagnant learning outcomes when better learning outcomes have great value are a huge problem.
Is Curriculum-Driven Instruction Working?

66% of American children are scoring below proficient reading levels at the beginning of 4th grade on the National Assessment of Educational Progress reading test.

Is Curriculum-Driven Instruction Working?

• 80% of fourth graders from poor families have reading skills below the proficient level (Hernandez, 2017).
NAEP Math Proficiency (Grade 4), 2015

- 40% Grade 4 Proficient
- 60% Less than Proficient
NAEP Math Proficiency (Grade 8), 2017

- 67% Less than Proficient
- 33% Grade 4 Proficient
NAEP Math Proficiency (Grade 12), 2017

- 26% Grade 12 Proficient
- 74% Less than Proficient
NAEP Math Proficiency for African American Students (Grade 12), 2017

- 7% Grade 12 Proficient
- 93% Less than Proficient
One-Size-Fits-All
Curriculum Driven Instruction
Devours Vulnerable Children
Decades of School Reform

Detroit Fourth Grade NAEP Rates of Reading Proficiency, 2015
- Below Basic: 73%
- Basic: 21%
- Proficient: 5%
- Advanced: 0%

Detroit Fourth Grade NAEP Rates of Math Proficiency, 2015
- Below Basic: 64%
- Basic: 31%
- Proficient: 4%
- Advanced: 0%
### Decades of School Reform

<table>
<thead>
<tr>
<th></th>
<th>% of N.Y. Students Proficient in ELA Across All Grades, 3-8</th>
<th>% of N.Y. Students Proficient in Math Across All Grades 3-8</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>NYC</strong></td>
<td>30.4</td>
<td>38</td>
</tr>
<tr>
<td><strong>Buffalo</strong></td>
<td>11.9</td>
<td>16.4</td>
</tr>
<tr>
<td><strong>Rochester</strong></td>
<td>4.7</td>
<td>6.7</td>
</tr>
<tr>
<td><strong>Syracuse</strong></td>
<td>8.1</td>
<td>10.9</td>
</tr>
<tr>
<td><strong>Yonkers</strong></td>
<td>20.3</td>
<td>26</td>
</tr>
</tbody>
</table>
The Fading American Dream

Percent of Children Earning More than Their Parents, by Year of Birth

Source: Chetty, Grusky, Hell, Hendren, Manduca, Narang (Science 2017)
This is Our Moment of Opportunity

Opportunity

- Ineffective Political Meddling
- Smothering Bureaucracy
- Stressed Educators
- Stagnant Test Scores
- Gross Inequity
- Public Pressure
It’s Our Time to Redesign

- Clear concise learning goals along a pathway to higher level skills
- Teachers know precisely where their students are on the skill development continuum
- Students know exactly where they are on the skill development continuum
- Personalized instruction gives students what they need at their optimal level of challenge
- Teachers carefully monitor progress and adapt instruction as needed to maximize student learning
- Students advance upon demonstrated mastery
Our Moment of Opportunity

- No more sitting through lessons already learned/ No more struggling with impossible lessons
- Students maintain a growth mindset
- Assessment is meaningful, and contributes to student ownership of their own learning
- Students are offered choice in how they learn
- Learning is joyful, and never a race
Standardized One-Size-Fits-All Curriculum-Based Education

- **Cover** standardized content for each grade or course
- **Test** students after each unit of instruction
- **Sort** students by grades into different levels of success
- **Move on** to the next unit of instruction
Horace Mann
What a time to be a learner!
Finding a Better Way: Using Personalized Competency Based Learning in the Early Childhood Years
Preschool to Grade 3
High Quality Early Learning Systems Recognize the Individual Needs of Children

- Abecedarian Project
- Abbot Preschools
- Educare
- Original Perry Preschool Project
- Early Learning Foundation
- Bright Beginnings
- Smart Start
<table>
<thead>
<tr>
<th>Systems Architecture</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Curriculum-Driven</strong></td>
</tr>
<tr>
<td>1. Use a standardized one-size-fits-all curriculum</td>
</tr>
<tr>
<td>2. Deliver instruction at the same pace for all</td>
</tr>
<tr>
<td>3. Test students after each unit of instruction</td>
</tr>
<tr>
<td>4. Sort students by grade into levels of success</td>
</tr>
<tr>
<td>5. Move forward with the delivery of standardized instruction whether students are ready or not</td>
</tr>
<tr>
<td><strong>Competency Based</strong></td>
</tr>
<tr>
<td>1. Identify clear learning outcomes</td>
</tr>
<tr>
<td>2. Assess student readiness for learning</td>
</tr>
<tr>
<td>3. Offer instruction at each student’s level of readiness</td>
</tr>
<tr>
<td>4. Monitor progress and adapt instruction as needed</td>
</tr>
<tr>
<td>5. Give all the time and support needed to develop competency in any essential skill</td>
</tr>
</tbody>
</table>
Personalized Competency Based Learning

- Assess Student Learning Readiness
- Identify Essential Learning Outcomes
- Informed Instruction
- Ongoing Systematic Measurement of Progress
- Competency
The Rise of Competency Based Learning

Personalized Instruction/Competency Based Learning
- New Hampshire
- Maine
- 30 other states

Western Governor’s, Capella, dozens of other Universities

Khan Academy and other Digital Learning Options

Global Learning XPRIZE
- RoboTutor: software to learn basic math and reading independently/Carnegie Mellon
- Literacy Education and Math Lab: Learning through play labs in or out of school/Columbia
Learning Math with Competency

Essential Math Skills, Pre-K to Grade 3
The Essential Math Skills Inventory
Shell Education
The Pre-K to Grade 3 Essential Math Skills Inventory

(Pre-K) Demonstrates one-to-one correspondence for numbers 1-10, with steps
(Pre-K) Demonstrates one-to-one correspondence for numbers 1-10, with manipulatives
(Pre-K) Adds on using numbers 1-10, with steps
(Pre-K) Adds on using numbers 1-10, with manipulatives
The Pre-K to Grade 3 Essential Math Skills Inventory

(K) Demonstrates counting to 100
(K) Has one-to-one correspondence for numbers 1-30
(K) Understands combinations (to 10)
(K) Recognizes number groups without counting (2-10)

(1) Counts objects with accuracy to 100
(1) Replicates visual or movement patterns
(1) Recognizes number groups without counting (2-10)
(1) Understands concepts of add on or take away (to 30)
(1) Can add or subtract single digit problems on paper
(1) Shows a group of objects by number (to 100)
The Pre-K to Grade 3
Essential Math Skills Inventory

(2) Quickly recognizes number groups (to 100)
(2) Adds/subtracts from a group of objects (to 100)
(2) Adds/subtracts double digit problems on paper
(2) Counts by 2, 3, 4, 5, and 10 using manipulatives
(2) Solves written and oral story problems using the correct operations
(2) Understands/identifies place value to 1,000
(3) Reads and writes numbers to 10,000 in words and numerals
(3) Uses common units of measurement: Length, weight, time, money, temperature
(3) Can add or subtract three digit problems on paper with regrouping
(3) Can round numbers to the 10s
(3) Can round numbers to the 100s
(3) Add and subtract 2 digit numbers mentally
(3) Counts by 5,6,7,8,9,10 using manipulatives
(3) Uses arrays to visually depict multiplication
(3) Recognizes basic fractions
(3) Solves written and oral story problems using the correct operation
Competency Based Learning in Action

- Assess Student Learning Readiness
- Informed Instruction
- Ongoing Systematic Measurement of Progress
- Identify Essential Learning Outcomes
- Competency
The Most Important Learning Years in the Life of Every Child: Birth through Grade 3
Preschool Essential Skills

Oral Language
Listens with interest to stories
Retells stories using main ideas
Expresses needs and wants verbally
Uses words to solve problems
Uses age-appropriate vocabulary
Follows two-part oral directions

Literacy
Shows an interest in books and print
Understands basic concepts of print
Identifies if sounds are the same or different
Recognizes basic rhyming words
Identifies basic shapes

Recognizes and prints first name
Identifies uppercase letters in first name
Identifies some letters and the sounds they make

Number Sense
Counts by rote to 20
Recognizes numerals 0 to 10
Counts using 1 to 1 correspondence for numbers (to 10)
Models gross motor and fine motor patterns
Understands concepts of add-on and take-away (to 10)
## Preschool Essential Skills

### Visual Motor Skills
- Uses coloring and writing tools with skill
- Can draw a picture to express an idea
- Demonstrates appropriate cutting skills
- Uses proper pencil grip
- Prints name in own style
- Gives sustained effort to visual-motor tasks

### Gross Motor Skills
- Throws and catches a large ball
- Throws and catches a small ball
- Stands on one foot with eyes open
- Hops on two feet
- Hops on one foot
- Demonstrates ability to cross midline

### Behavior
- Separates from parents/caregivers without excessive upset
- Plays/shares with others
- Waits his/her turn
- Perseveres to complete a task
- Respects classroom rules and procedures
- Demonstrates good listening skills

### Self-Care
- Can use the bathroom independently and complete hygiene tasks
- Able to dress self (puts on coat and shoes; fastens snaps, buttons and zippers)
- States full name and age
Kindergarten Essential Skills

Shapes
• Identifies basic shapes
• Draws basic shapes

Visual
• Uses hands and eyes at nearpoint
• Maintains visual focus at nearpoint

Letters
• Identifies uppercase letters
• Identifies lowercase letters

Phonologic Skills
• Identifies if sounds are the same or different
• Identifies rhyming words
• Produces rhymes for a given word
• Identifies beginning or ending sounds of words
• Blends given sounds into words
• Segments words into sounds
• Listens with interest to stories
• Identifies a letter sound associated with each letter

Language
• Asks questions when appropriate
• Follows 2-part oral directions
• Uses age-appropriate vocabulary
• Uses language to solve problems

Motor Skills
• Demonstrates throwing and catching skills with a small ball
• Can balance on one foot with eyes closed for 6 seconds
• Skips well for at least 10 yards

Literacy
• Understands concepts of print
• Recognizes personally meaningful sight words
• Prints 10-20 personally meaningful words
• Uses letter-sound knowledge to write words
• Prints full name

Numeracy
• Demonstrates counting to 100
• Has one-to-one correspondence for numbers 1-30
• Understands combinations (to 10)
• Recognizes number groups without counting (2-10)

Behavior
• Perseveres to achieve a task
• Respects basic rules/procedures in the classroom
Kindergarten Math Variance
First Grade Essential Skills

Letters
• Identifies uppercase letters
• Identifies lowercase letters

Phonologic Skills
• Produces rhymes for a given word
• Identifies beginning, middle and ending sounds of words
• Combines phonemes to make words

Language
• Identifies a letter sound associated with each letter
• Produces rhymes for a given word
• Identifies beginning, middle and ending sounds of words
• Combines phonemes to make words

Motor Skills
• Demonstrates appropriate balance
• Demonstrates appropriate skipping
• Uses comfortable nearpoint vision

Visualization
• Draws pictures with detail
• Can tell/retell a story

Literacy
• Recognizes basic sight words
• Follows print when reading (visual tracking)
• Decodes grade-appropriate print
• Reads short sentences
• Reads for meaning
• Prints 30-50 personally meaningful words
• Expresses ideas in writing (simple sentences)
• Spells using common word patterns
• Spells words using visual memory

Numeracy
• Counts objects with accuracy to 100
• Replicates visual patterns or movement patterns
• Recognizes number groups without counting (2-10)
• Understands concepts of add on or take away (to 30) with manipulatives
• Can add or subtract single digit problems on paper
• Shows a group of objects by number (to 100)

Behavior
• Delays gratification when necessary
• Plays well with others
• Shows interest in learning
Second Grade Essential Skills

Reading
• Uses phonics knowledge to decode words in context
• Recognizes basic sight words
• Reads with fluency
• Reads for pleasure
• Identifies story elements
• Identifies main ideas
• Makes text-to-text connections
• Makes text-to-self connections
• Makes inferences when reading

Visual Memory
• Spells using visual memory
• Can remember 3-block visual patterns

Language
• Uses age-appropriate vocabulary
• Demonstrates effective listening skills
• Uses language to recognize feelings in self and others

Writing
• Prints neatly
• Writes in full sentences

Mathematics
• Quickly recognizes number groups (to 100)
• Can show a group of objects by number (to 100)
• Can add-on or take-away from a group of objects (to 100)
• Can add or subtract double digit problems on paper
• Counts by 2, 3, 4, 5, and 10 using manipulatives
• Solves written and oral story problems using the correct operations
• Understands/identifies place value to 1,000

Behavior
• Demonstrates empathy for fellow students
• Shows interest in learning

• Spells using phonics skills
• Makes simple revisions to a draft
• Writes using rich detail

Motor Skills
• Demonstrates excellent balance and skipping
Third Grade Essential Skills

Reading
• Uses phonics knowledge to decode words in context
• Recognizes basic sight words
• Reads with fluency
• Reads for pleasure
• Identifies story elements using reading strategies
• Identifies main ideas
• Monitors comprehension while reading
• Makes inferences when reading
• Makes text-to-text, self, world connections

Language
• Uses age-appropriate vocabulary
• Demonstrates effective listening skills
• Uses language to recognize feelings in self and others

Writing
• Prints neatly and writes neatly in cursive
• Spells using visual memory
• Spells using phonics skills and word patterns
• Uses capitalization and punctuation
• Writes a paragraph using full sentences

Expresses a clear opinion in oral and written form
• Edits and revises drafts

Mathematics
• Reads and writes numbers to 10,000 in words and numerals
• Uses common units of measurement: Length, weight, time, money, temperature
• Can add or subtract three digit problems on paper with regrouping
• Can round numbers to the 10s
• Can round numbers to the 100s
• Add and subtract 2 digit numbers mentally
• Counts by 5,6,7,8,9,10 using manipulatives
• Uses arrays to visually depict multiplication
• Recognizes basic fractions
• Solves written and oral story problems using the correct operation

Behavior
• Shows interest in learning
• Demonstrates empathy for fellow students

Organization
• Organizes to complete a task in school
• Organizes to complete a task at home
# Systematic Measurement of Progress

## Essential Skill Inventory: Preschool

<table>
<thead>
<tr>
<th>Area of Assessment</th>
<th>Oral Language</th>
<th>Literacy</th>
<th>Number Sense</th>
<th>Visual Motor Skills</th>
<th>Gross Motor Skills</th>
<th>Behavior</th>
<th>Self-Care</th>
</tr>
</thead>
<tbody>
<tr>
<td>Essential Skills</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>8</td>
<td>9</td>
<td>10</td>
<td>11</td>
<td>12</td>
<td>13</td>
<td>14</td>
</tr>
<tr>
<td></td>
<td>15</td>
<td>16</td>
<td>17</td>
<td>18</td>
<td>19</td>
<td>20</td>
<td>21</td>
</tr>
<tr>
<td></td>
<td>22</td>
<td>23</td>
<td>24</td>
<td>25</td>
<td>26</td>
<td>27</td>
<td>28</td>
</tr>
<tr>
<td></td>
<td>29</td>
<td>30</td>
<td>31</td>
<td>32</td>
<td>33</td>
<td>34</td>
<td>35</td>
</tr>
<tr>
<td></td>
<td>36</td>
<td>37</td>
<td>38</td>
<td>39</td>
<td>40</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Student Name**

Indicate mastery by writing date to the right of the student’s name and under feature mastered.

---

Sample/Not for Distribution

Copyright © Early Learning Foundation
Teacher Perception

• Improved relationships with students
• Improved understanding of the whole student and his/her learning needs
• Better understanding of how the different domains of early childhood interact and support one another
• Much improved delivery of differentiated and high-quality instruction

-The Effects of Using the Essential Skills Inventory on Teacher Perception of High-quality Classroom Instruction, Preventing School Failure, Spring 2014
Books for Kids

- *It's Time to Stand Up and Speak Up! For Yourself and Others*
  - Written by Bob Sornson
  - Illustrated by Shelley Johannes

- *The Juice Box Bully*
  - Empowering Kids to Stand Up for Others
  - By Bob Sornson and Marie Diamond
  - Illustrated by Kim Shaw
  - Foreword by Jim Fay
  - Co-Founder of the Love and Logic Institute

- *Stand in My Shoes*
  - Kids Learning About Empathy
  - By Bob Sornson
  - Illustrated by Shelley Johannes
Competency Based Learning
BRAINLESS SAMENESS
The Demise of One-Size-Fits-All Instruction and the Rise of Competency Based Learning

Bob Sornson
You have the opportunity

Create a system that allows vulnerable learners to succeed
Start with **Clear Learning Goals**, then Give Kids the Instruction They Need **at Their Level of Readiness** for as Long as They Need It.
In Love with Learning For Life

Learning reading and math the way it was done 100 years ago is not going to prepare anyone for the future. Up to 70 percent of the tasks in most jobs are on track to be automated, leaving only the most creative, empathetic, technically fluent, collaborative work for humans.