

Learning to play: Playing to learn



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**Keynote address at the 2011 Family Impact Seminar held
at the Copley Theater in Aurora, Illinois on February
19, 2011**

**Co-sponsored by the Institute of Government and Public
Affairs at the University of Illinois and Illinois Action
for Children**

What do you hear?

Repeat after me



Changing the lens:



What's going on?



Just play?

Changing the lens



Language

Perspective taking

Social skills

Planning and
executive function

It is time to change the lens....

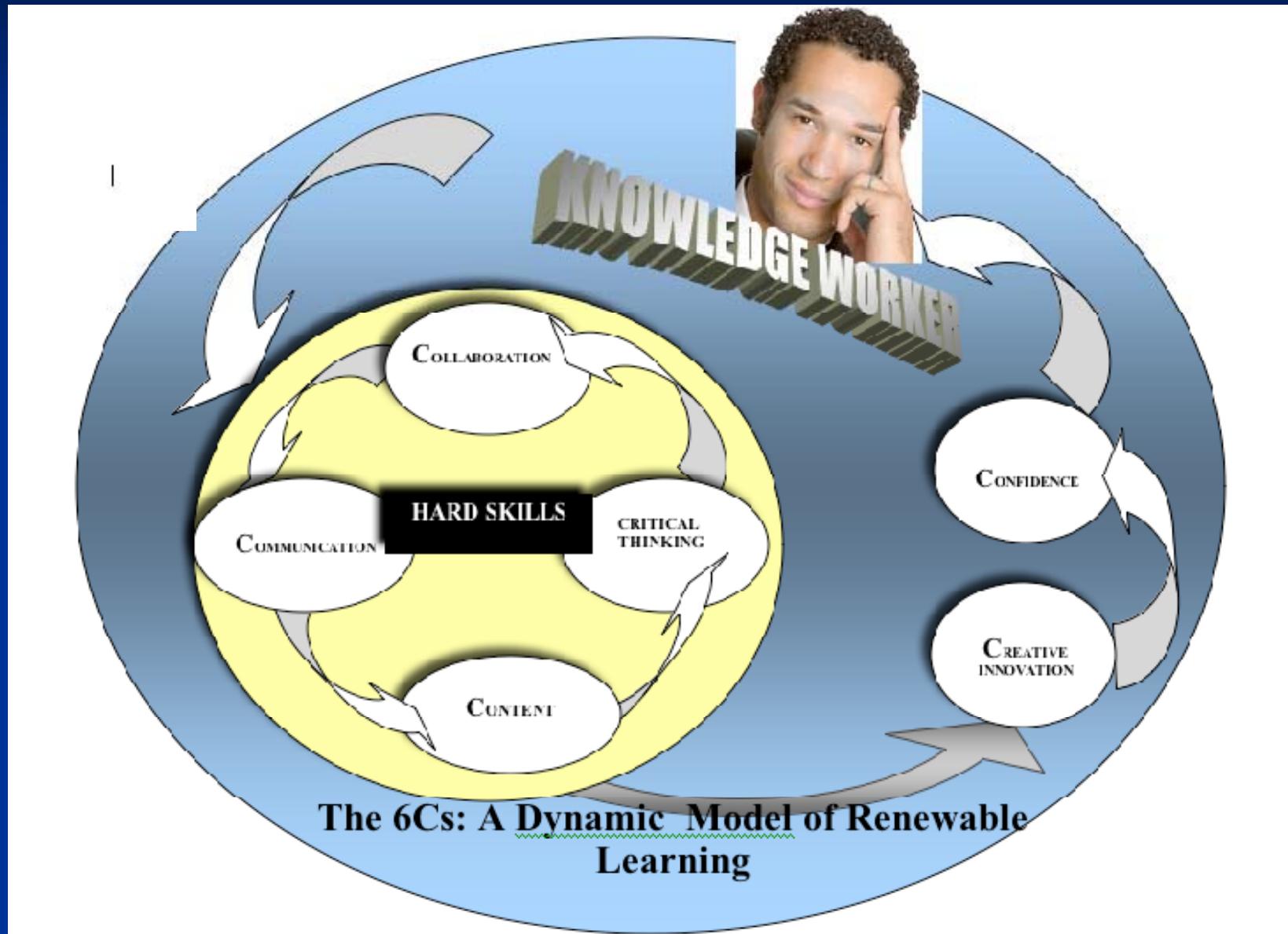


- On the role of play in education
- To have parents and policy makers see the social and academic value of playful learning

SOME INTERESTING FACTS

- We are leaving the information age, where getting the factoids was enough....
- We are entering a new era, **a knowledge age** in which information is doubling every 2.5 years.
- Integrating information and innovation is key.

Success in the global workforce of the 21st century requires that our children be skilled in the 6Cs™



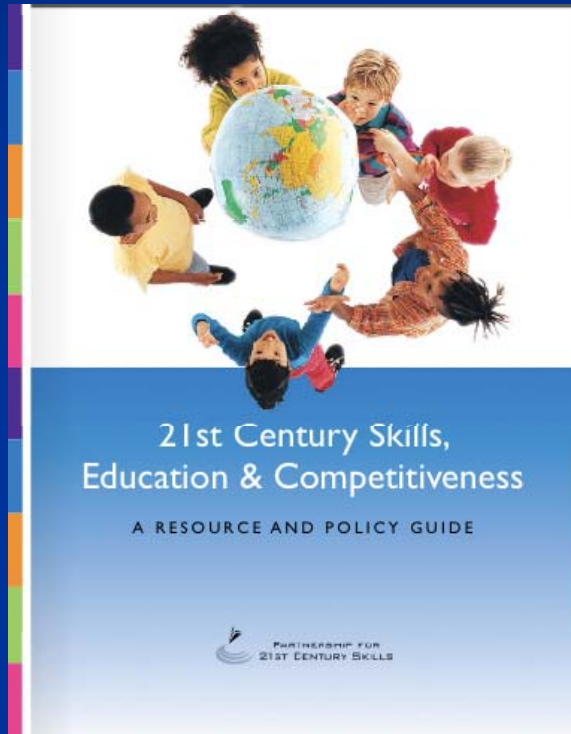
As Daniel Pink (2005), author of *A whole new mind* writes:

*The past few decades have belonged to a certain kind of person with a certain kind of mind-- computer programmers who could crank code, lawyers who could craft contracts, MBAs who could crunch numbers. **But the keys to the kingdom are changing hands.** The future belongs to a very different kind of person with a very different kind of mind - creators and empathizers, pattern recognizers, and meaning makers...*



And, the Partnership for the 21st Century Skills

(September 10, 2008)



In an economy driven by innovation and knowledge ... the **ingenuity, agility and skills** of the American people are crucial to U.S. competitiveness.

21st Century Skills: Education and Competitiveness

- What does all this have to do with the way we raise and educate Illinois' children?

EVERYTHING BECAUSE.....

**Our children are
The workforce of that future,
The workforce of the year 2040**



**Today, I am going to shock you
(or maybe you guessed already)**

- **With one way we can achieve the very goals that our nation wants to instill.....**

Through.....

PLAYFUL LEARNING

In fact, a large body of research suggests that....



High quality preschool programs are characterized by **playful environments** in which children have strong relationships with their caregivers and are engaged in active learning.

— Galinsky 2005



This holds for all children

- In the US, England, China and Singapore
- For children who are rural or urban
- For children who are rich or poor
- For children who are Hispanic, Asia, Caucasian or Black

But whatever happened to play?



In 1981, a typical school-age child in the United States had 40% of her time open for play. By 1997, the time for play had shrunk to 25%.

What percentage is it down to now??

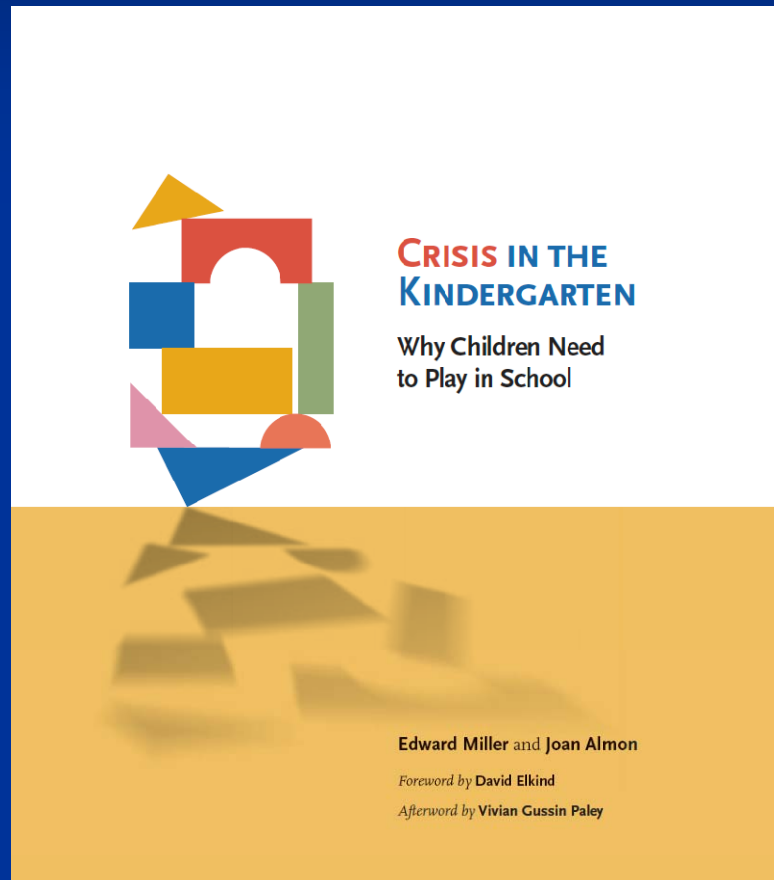
Recent research suggests that

- In the last two decades children have lost 8 hours of free play per week
- Thousands of schools in the United States have eliminated recess to make time for more academic study.

Elkind, (2008) *Greater Good*

Center for Public Education, 2008

And a recent report from the *Alliance for Childhood Survey in New York and LA (April 2009)* showed...



That play -- in all its forms, but especially open-ended child-initiated play, is now a minor activity in most kindergartens, if not completely eliminated.

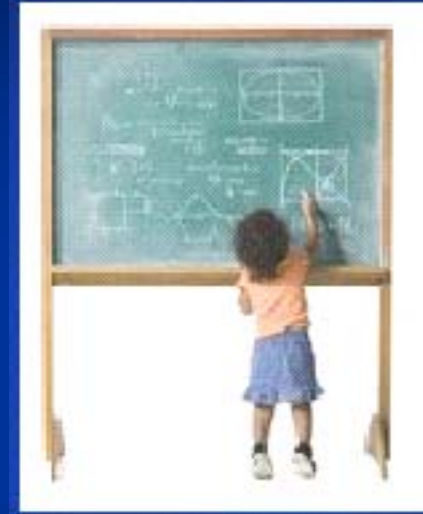
Direct observation of 142 NY classrooms and 112 LA classrooms revealed that...

- 25% of the teachers in the Los Angeles sample reported having no time whatsoever in their classrooms for children's free play.
- 61% of the teachers in the New York sample reported having 30 minutes or less of daily choice time. (In Los Angeles, the figure was 81%.)
- 79% of the New York teachers reported spending time every day in testing or test preparation. In Los Angeles, it was 82%.

In fact, several recent articles raise the importance of play!

- **Scientific America, February, 2009:**
 - *Play-deprived childhood disrupts normal social, emotional and cognitive development in humans and animals.*
- **NYTimes, September, 2009**
 - Can the right kinds of play teach self control?
- **NYTimes, February 2010**
 - Playing to Learn
- **NYTimes, January 2011**
 - Movement to restore play gains momentum

We are wearing out our youngest children by



- Engaging in “drill-and-kill” activities rather than playful and meaningful learning, *even at the youngest ages!*
- Testing for “factoids” in our assessments rather than real learning







These issues and more prompted a report from the American Academy of Pediatricians in October 2006 entitled:

The Importance of Play in Promoting Healthy Child Development and Maintaining Strong Parent-Child Bonds

They wrote:

These guidelines are written in response to the multiple forces challenging play. The overriding premise is that play ...is essential to the cognitive, physical, social, and emotional well-being of children and youth.

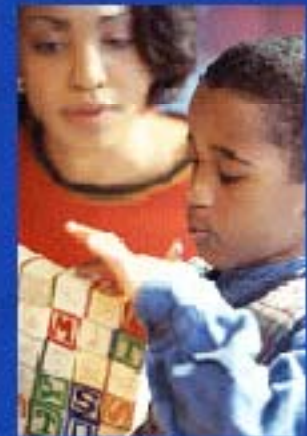
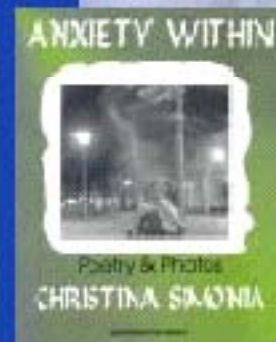
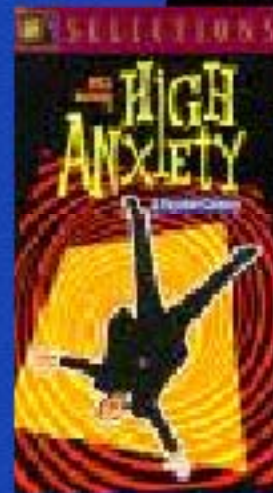
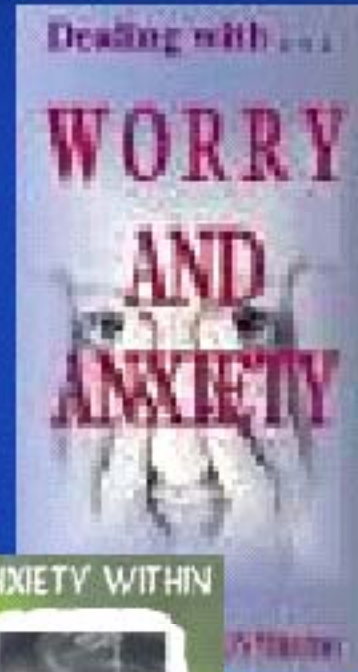
Our society often confuses

learning with memorization

and

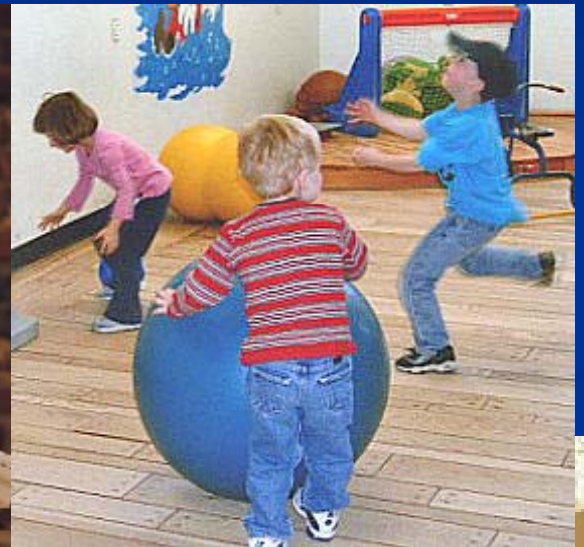
test scores with success

And parents are barraged with books that speak to their newly created anxieties about whether their children will succeed



Have we forgotten how to play?

"Play is under siege" (Zigler, 2004)



Maybe....

We have data from a study with Fisher-Price suggesting that play really is under siege



as the public's ideas of what constitutes play are changing...
and that parents now consider flash cards a kind of play : (

Fisher, Hirsh-Pasek & Golinkoff (2008)

The consequence for a society is huge,
between raising ...



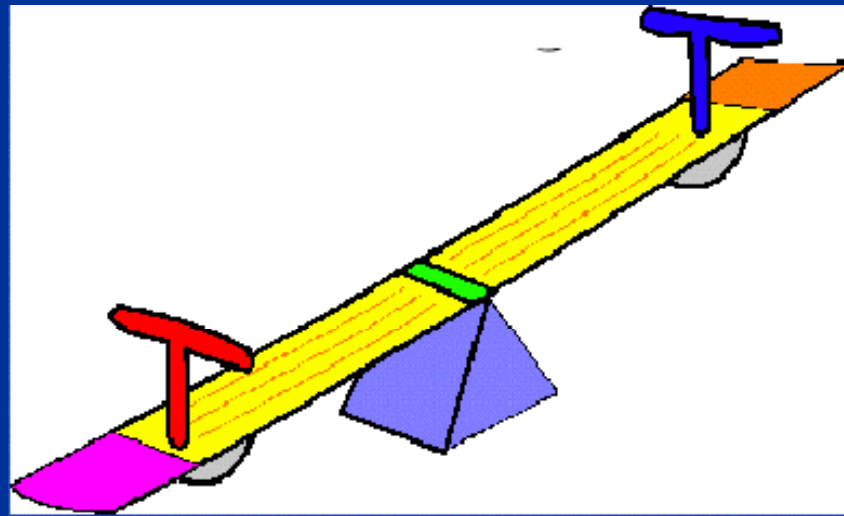
ROBOTS?



CREATIVE THINKERS?

The challenge is to strike a balance...

between the desire to enrich children's lives and the need to foster play as a foundation for learning skills like **collaboration, communication, content, critical thinking,** and **creative innovation** and **confidence.**



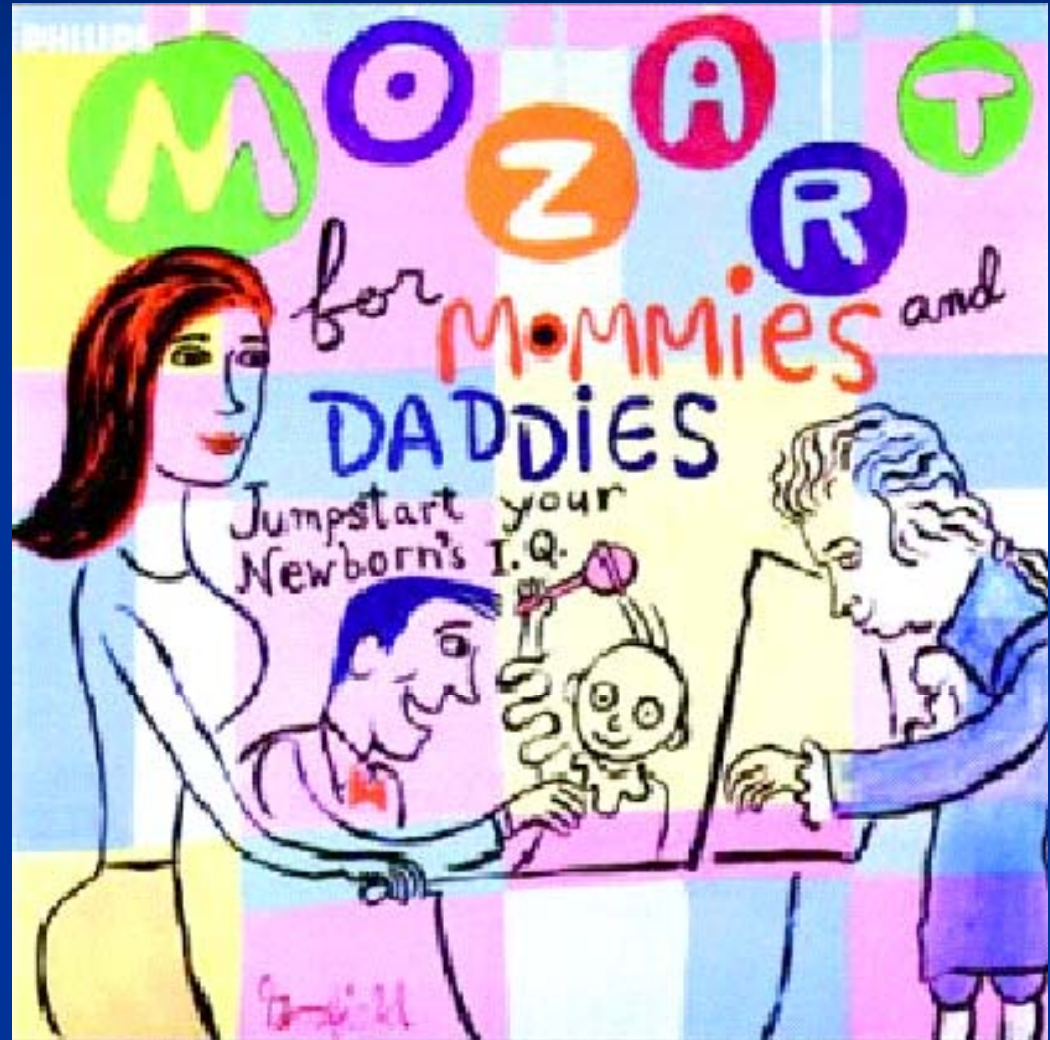
- **Why are we so hesitant to let our children play?**
- **Why were our childhoods so different than our children's?**

**We believe that
Well-intentioned parents and teachers
Have been misled by . . .**

- Exaggerated science
- Societal forces
- Marketing ploys

Exaggerated Science

Remember the
“Mozart Effect”?



The REAL evidence

*Professor Lois Hetland (Harvard):
examined 67 studies on the “Mozart
Effect” with 4,564 adults*

“the existence of a short-lived effect by which music enhances . . . performance in adults does not lead to the conclusion that exposing children to classical music will raise their intelligence.”

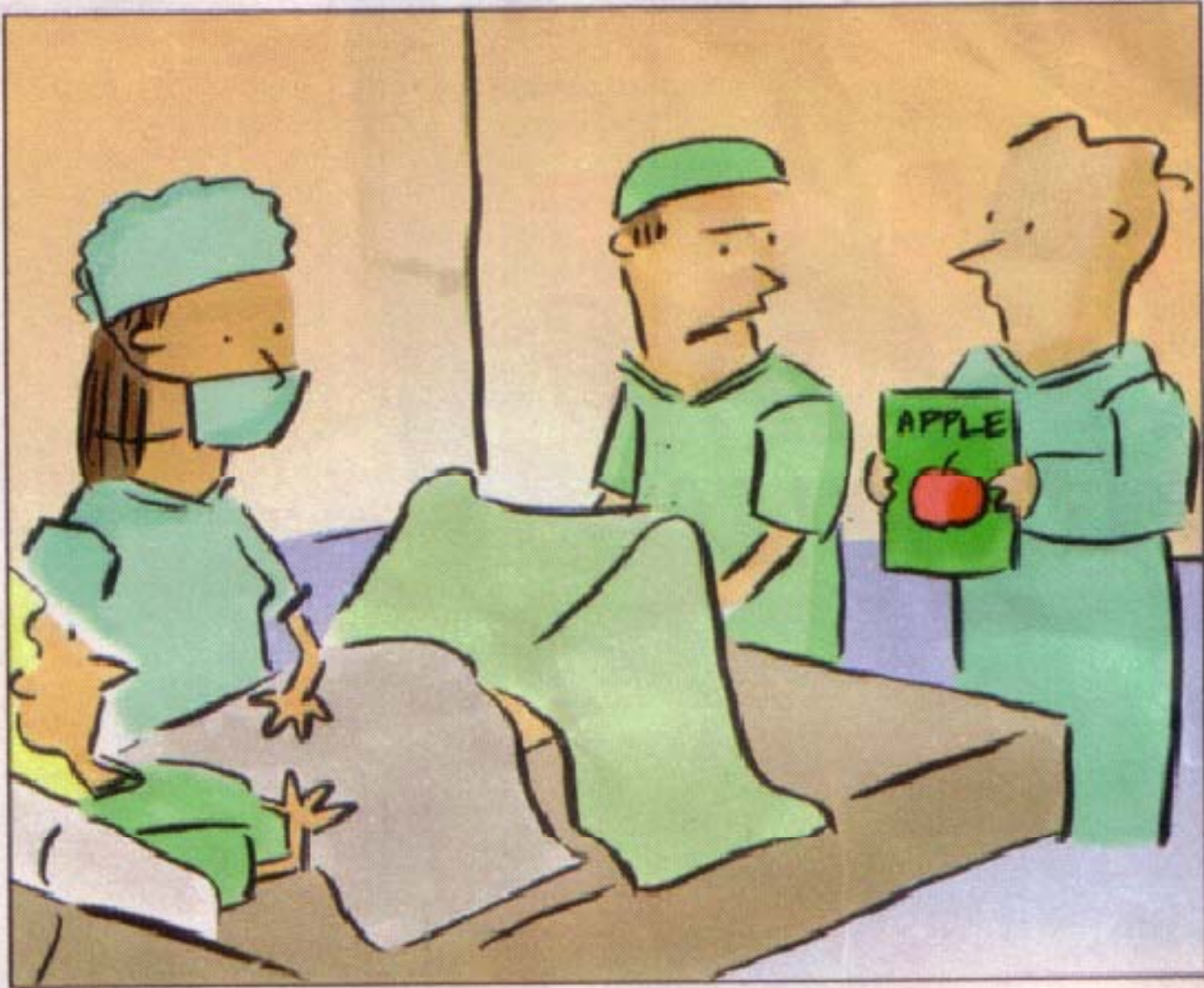
Societal Forces

Even comic strips reflect our insatiable appetite for products that will boost IQ and save our children from the fate of being *gasp* “normal.”

From Baby Blues

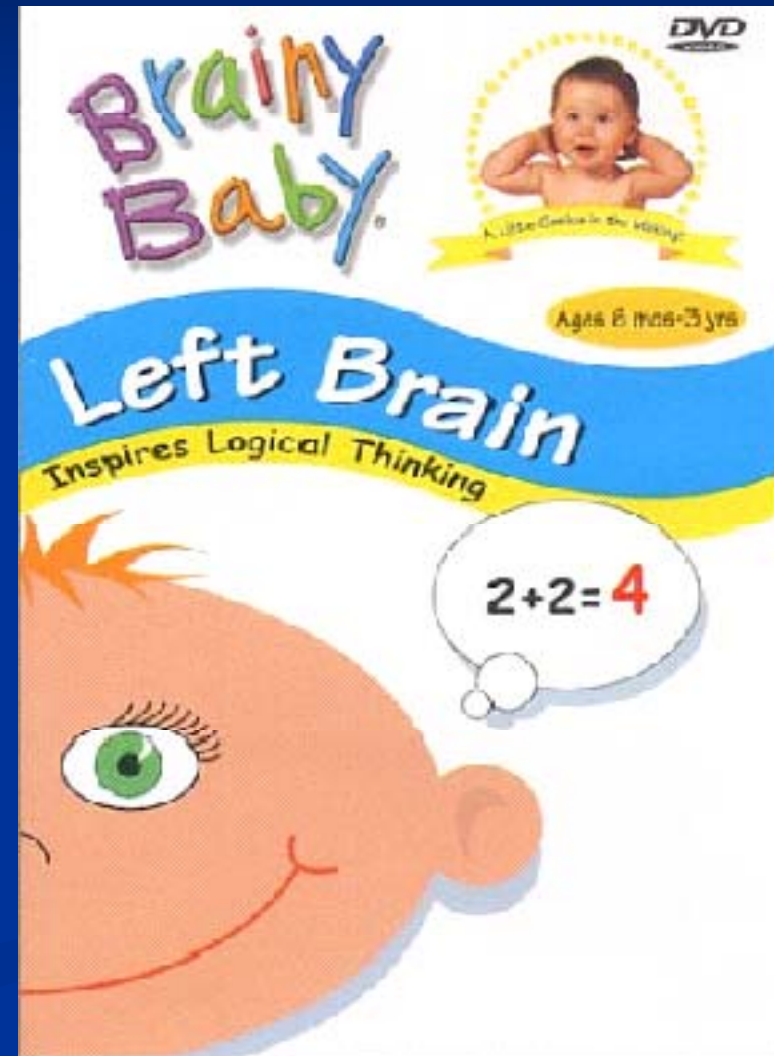
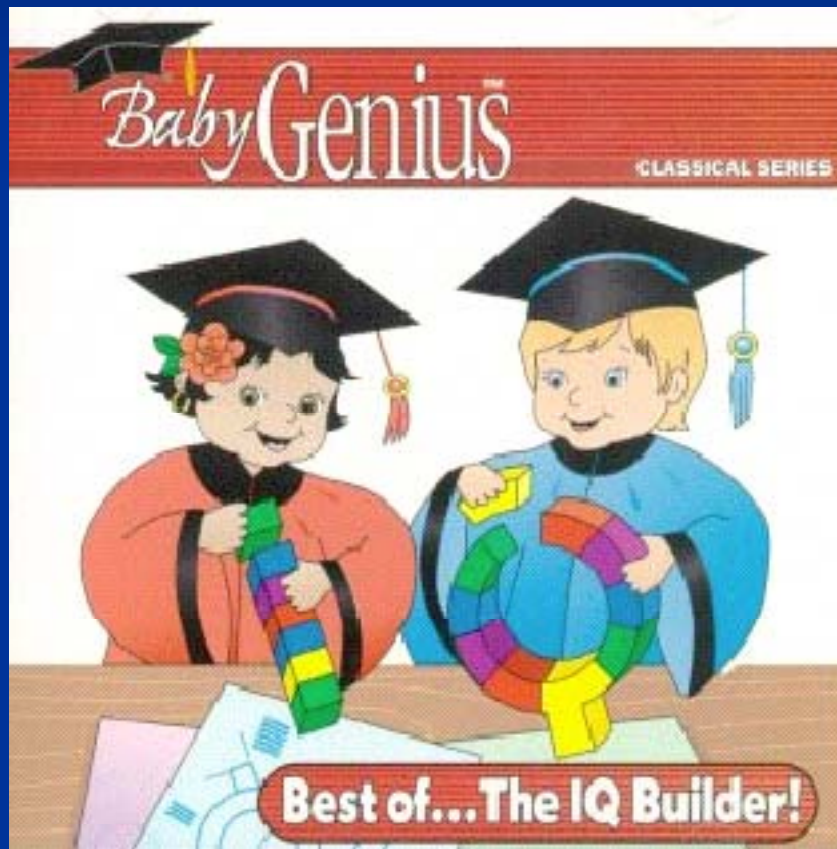


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"Could you at least lay off the flash cards until we see a head?!"

Marketing Ploys



In the remainder of this talk I will demonstrate . . .

What 40 years of science in psychology has taught us about how to create children who have great outcomes in reading and math and who are creative lifelong learners.

The accumulated evidence suggests:

A talk in three parts

1. **Early education with rich content is important but . . .**
 - *How* you learn is as important as *what* you learn.
2. **E.Q. is as important as I.Q.**
3. **Each of us has a role to play in helping children become life-long learners.**
 - We are a village

Part 1

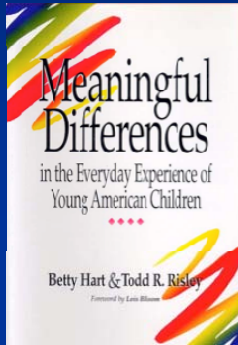
1. **Early education with rich content is important.**
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Mountains of evidence suggest that...

- **Preschool experience dramatically increases children's:**
 - **Collaboration**
 - > Social skills by as much as 62%
 - < Problem behaviors
 - **Communication**
 - > Language skills by 25%
 - **And in Content we see dramatic increases in**
 - > Reading by 59%
 - > Writing
 - > Math by 50%

US Head Start Data, 2002, 2005; High scope data Schweinhart, 2004; NIERR State reports, 2008; Pianta et al., 2010

To take one example from language learning



Hart and Risley (1995) found that children from professional homes hear 2,153 words per hour while those from welfare homes hear only 616.

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Anne Fernald (2009) finds that the amount of language heard influences mental processing efficiency



And Martha Farah (Hackman & Farah, 2010) reports that by age 5 poor children's brains differ from middle class children's brains in areas of attention and language!

So having programs with rich language content early matters for learning and school readiness!

Yet....

It's not just *what* you learn that matters, but
how you learn

We know, for example, that preschool children in highly academic, “drill and kill” learning environments are:

More aggressive

More anxious

More perfectionistic

Than those who learn in **playful** environments where learning is active and **meaningful**.

Comparisons between developmentally appropriate schools (DAP) and more traditional “academic” direct instruction (DI) schools tell the same story.

Hirsh-Pasek, Golinkoff, Berk, & Singer. (2009). *A mandate for playful learning in preschool: Presenting the evidence*. Oxford University Press.

- **DAP schools (sometimes called progressive schools)**
 - Have active learners
 - More playful learning (guided play)
 - Whole child approach
 - Integrated curricula
 - Discoverer/Explorer metaphor
- **DI**
 - More passive learners
 - Learning is more compartmentalized
 - Empty vessel metaphor

DAP schools offer advantages in

■ Social emotional development

- > Emotional regulation

- < Child stress

Burts, Hart, Charlesworth, Fleege, Mosley & Thomasson, 1992

- < Behavior problems

Marcon, 1994, 1999, 2003

- > Motivation for school

Hirsh-Pasek, 1991; Stipek et al., 1998

■ Academically

- > Reading and math scores

Stipek, Feiler, Byler, Ryan, Milburn, and Salmon (1998); Marcon (1999, 2003)

These advantages last into the primary grades

One recent study...

Celebrated a Montessori education over the more traditional education. Montessori classrooms are more developmentally appropriate. They embrace a metaphor of learning that is more playful in which children are active and less passively involved in learning.

--Lillard & Else-Quest, 2006

The results suggested that...

Children in Montessori classrooms at age 5 yrs.
did...

Better in academic tasks like reading and math

Better in social tasks that required positive peer play

Better in tasks that required attention to another person's beliefs

At age 12 years these children...

Liked school more

Were more creative in their writing

Did better in reading and math

WHY???

**Because the children were more
actively engaged and learned
through play**

And yet another recent study

(Diamond, Barnett, Thomas & Munro, *Science*, 2007)

- Found that playful learning through the *Tools of the Mind Program* helped children develop executive function skills (EF) like inhibitory control, working memory and cognitive flexibility.
- These skills are highly correlated with fluid intelligence and outcomes in math and reading.
- When teachers promote these skills through playful -- playful learning *throughout the day*, children's outcomes on standardized tests increase -- even for poor children.

Can the right kinds of play teach self-control?

NYTimes Sept 25, 2009

And a final study

- Looked across 164 studies to ask whether children learned best in explicit instruction, playful learning (discovery learning) or through play alone and found...



DRUMROLL PLEASE

That playful learning or discovery learning trumped the other pedagogies!

Alfieri et al., 2010

A perfect day for our children, then, includes playful learning

- Free play (choice time),
 - Where children choose their own activities
- And (**importantly**) guided play or discovery learning where
 - adults subtly guide children's discovery by
 - Putting toys around the room that encourage discovery of shape or number
 - Are play partners who build on children's interest and questions

This is a key point!

- Play and learning are NOT incompatible
- Play is not merely free time with no objectives!
- Play can be -- if used properly, a powerful pedagogical approach that will INCREASE children's performance in literacy, math and even science all the way through the primary grades and beyond!

Some examples??

In language and reading...



- Telling stories (in many languages)
- Word play
 - (what rhymes with “hat”?)
- Singing songs
- Dialogical reading
- Reading product labels
- Engaging conversations
- Dramatic play (Christie)

READING IS NOT

- Phonics without fun
- Simply memorizing the alphabet or a set of disjointed vocabulary words
- It's a meaningful, engaged activity where children ask questions and go beyond the pages of the book.



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An example from our own research On e-books and t-books



Research supported in part by Fisher-Price Toys

E-books are now in 95% of the homes of parents we surveyed

Yet, when parents read t-books with preschool aged children

- The reading experiences they share are predictive of later literacy
- A *dialogic* reading style has been shown to effectively improve reading and school outcomes
- Contributes to language development



- Do e-book consoles promote *the kind of dialogic parent-child interactions that predict later literacy?*



No!

When 80, 3-and 5-year olds were randomly assigned to read matched e- or t-books with their children, we found that...

When reading t-books:



Parents talk **MORE** about the story



Parents talk **LESS** about behavior



Parents say **MORE** that goes "beyond the story"



In a follow-up study we also found...

- That children reading t-books were better able to:
 - Tell us the plot line
 - Remember the sequences of events in the story

Why??

- When children are engaged with us
- When the book is meaningful
- When they are **not distracted** by the pop-up, bells and whistles
- And *when we are there* to highlight the important messages...

They learn better!

In math and spatial skills

- Finding patterns
- Dividing candy and sharing
 - Squire & Bryant, 2002
- Sorting trail mix
- “I spy”
- Playing with blocks & trains
- Conversations
- Playing board games
 - Ramani & Siegler, 2008
- Puzzles



MATH IS NOT

- Memorizing equations
 - $1 + 1 = 2$
- Flashcards of numbers
- Or toys that only promote one right answer



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An example from our own research

Spatial learning with blocks



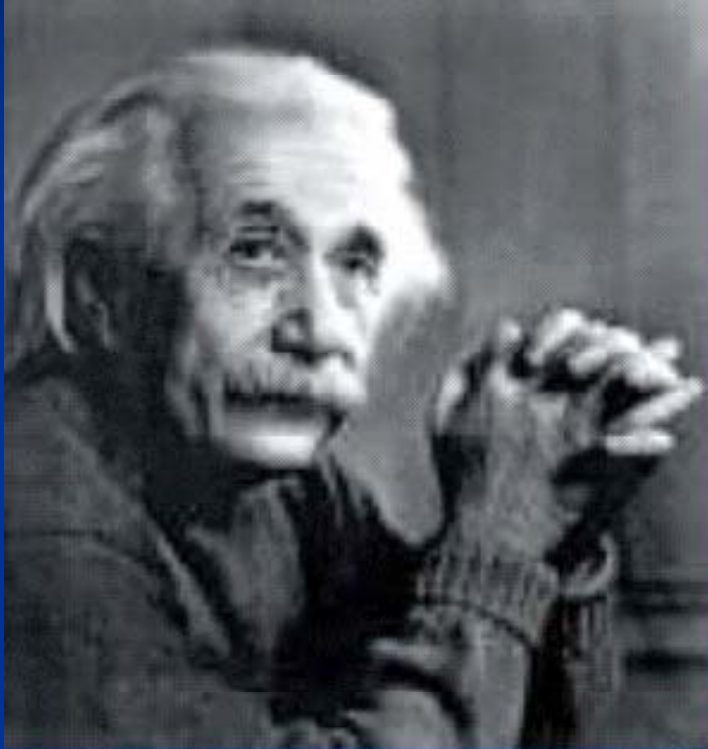
Research supported in part by Mega Bloks

See also Levine, Huttenlocher, Cannon, Pruden, Ratliff & Saunders, 2008

When parents engaged in guided play with children...

- They use richer spatial vocabulary and build a foundation for later math and spatial skills!
- And that language is related to better spatial tasks that feed into the STEM disciplines of Science, Technology, Engineering and Mathematics (Levine et al., 2008)

As Einstein once said...



"The only thing
that interferes
with my learning
is my education."

How you learn is as important as *what* you learn



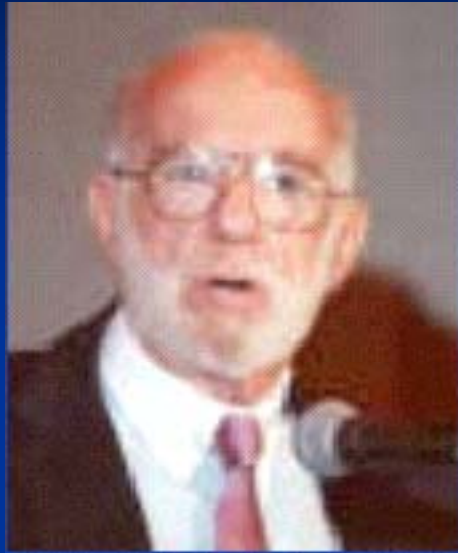
PLAY = LEARNING



Part 2

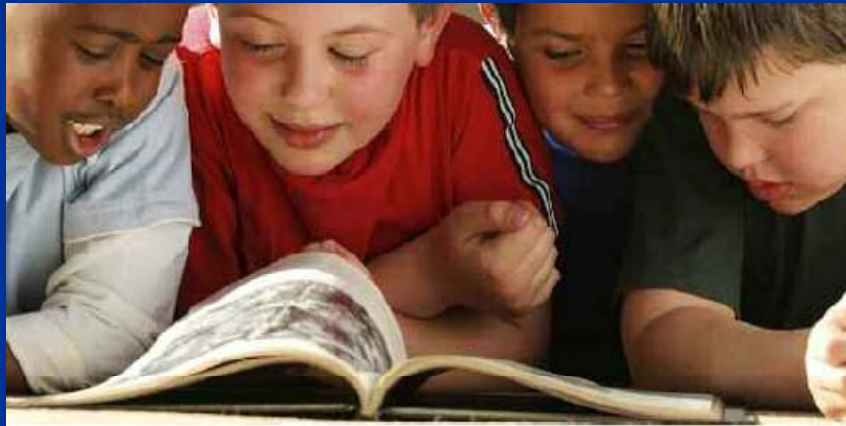
1. How you learn is as important as what you learn.
2. **E.Q. is as important as I.Q.**
3. Each of us has a role to play in helping children become intelligent and happy.

A tale of two Spocks



- Dr. Benjamin Spock got it all along: social and emotional skills matter -- a lot
- Mr. Spock did not get it: He is all intelligence and no social skills

Scientific evidence also points to the power of social skills for emotional health and intellectual growth!



Social and Emotional Learning for Illinois Students: Policy, Practice and Progress

How Illinois SEL standards came to be and what the state has learned through putting them into practice

From the last two decades of research, it is unequivocally clear that children's emotional and behavioral adjustment is important for school success. Raver, 2003

Social, emotional learning (SEL) programs... enhanced student's behavioral adjustment... reduced conduct ... problems and improved academic performance...

Gordon et al., in press

And Illinois was the first to put in standards for SEL!

For example...

- Parental talk about emotions creates children who are more sensitive to others' emotions.



“How would you feel if she took your bear?”

And children with social emotional control do better in school....



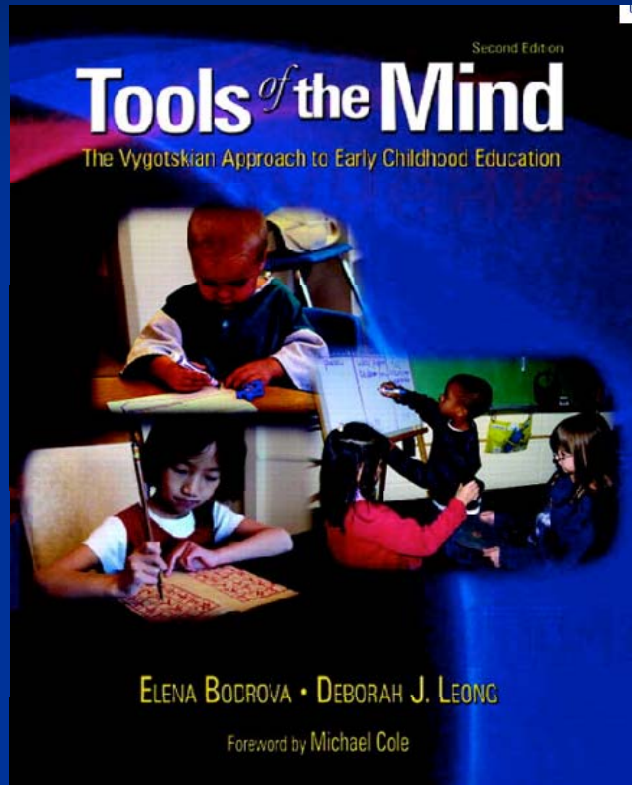
Mischel et.al., (1989) for a review

Guess what happened over time!!!!

Those who waited scored over 200 points better on their SATs?

Eigsti, et al., 2006

Further, we can teach emotional control



Through children's play

EQ and emotional control does not develop on its own

- Children learn it from adults
- Children learn it from other children
- Children learn it through PLAY: Free and guided



Tan-Niam, 1997



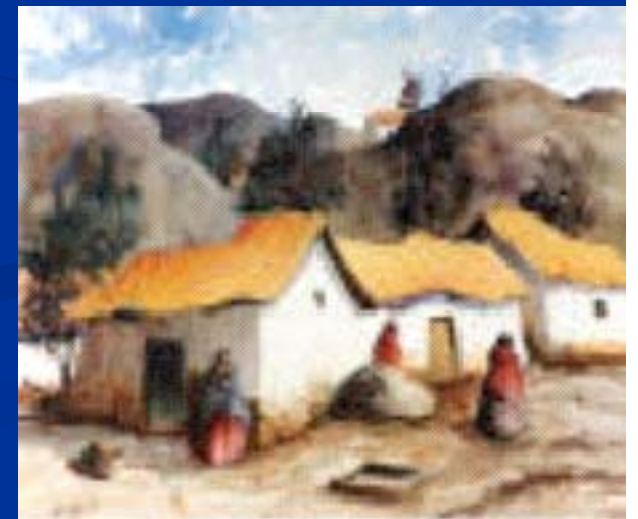
Part 3

1. Early education is important but . . .
 - How you learn is more important than what you learn.
2. E.Q. is as important as I.Q.
3. Each of us has a role to play in helping children become happy and intelligent.



'It takes a village to raise a child'

Ancient African Proverb



“Learning is the heartbeat of a strong society.”

Andrea Camp



Or put simply ---

The schools cannot do this alone. Successful education demands that we have a parents involved as partners with schools and a community that focuses on children and families. Illinois has been a leader here too!

Did you know that – counting recess and vacations) only 16% of a child's average day is spent in school?

A Huge GAP

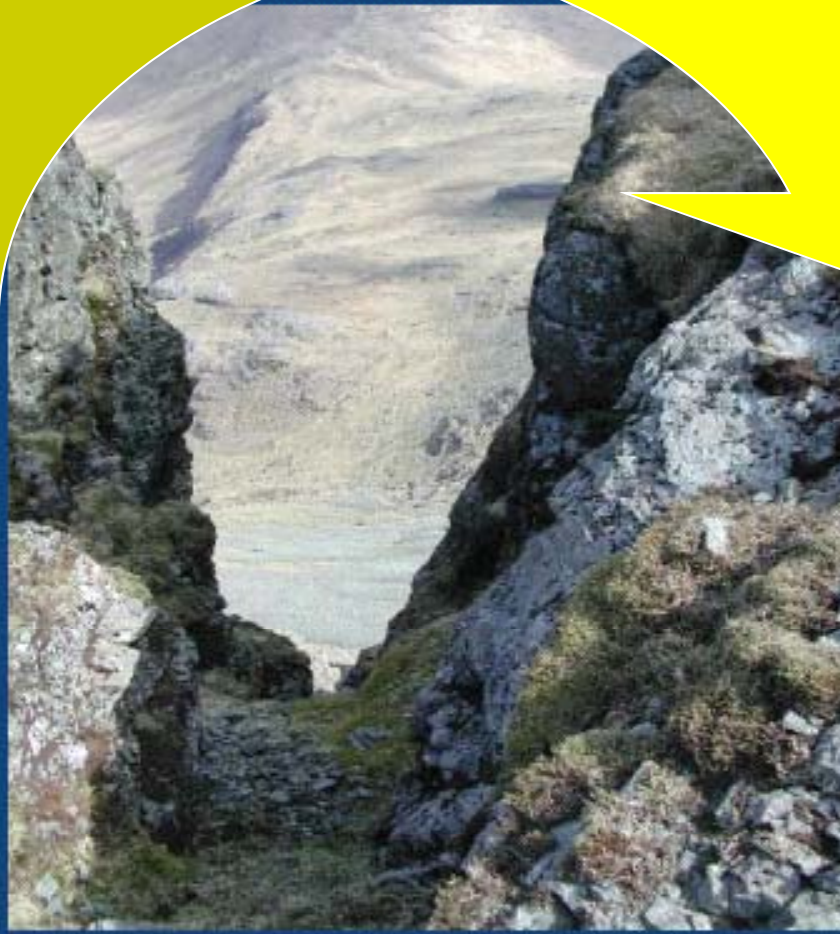
What we know in science...



What we do

It is time to bridge the GAP!

What we know...



What we do

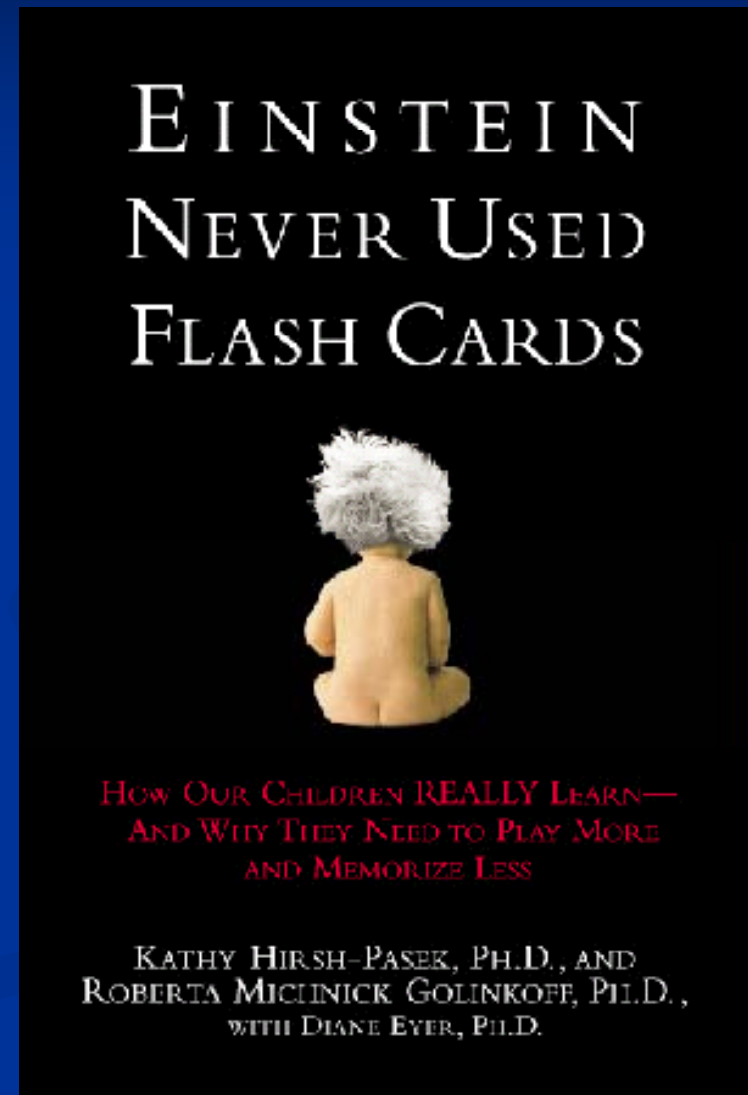
The science seems to...

- Offer virtual consensus that children who have time to discover and explore through play learn skills required for success in the global world.

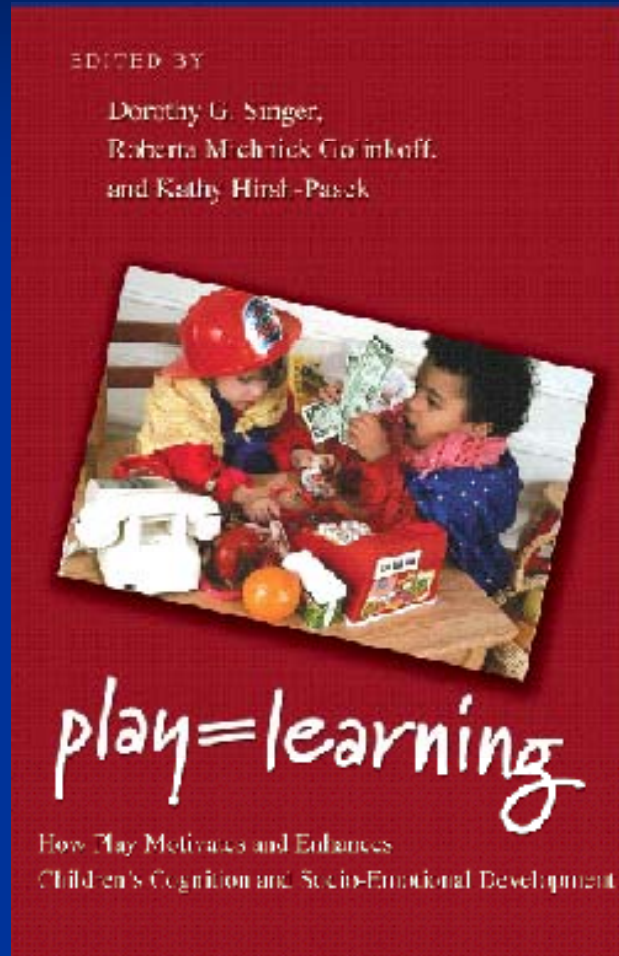
Thus, in *Einstein Never Used Flash Cards*

We,

- Bridge the gap between science and practice
- Show how children *really* learn
- Give real life examples that can be used in the school room and in the living room (as well as in the library, museum and media)

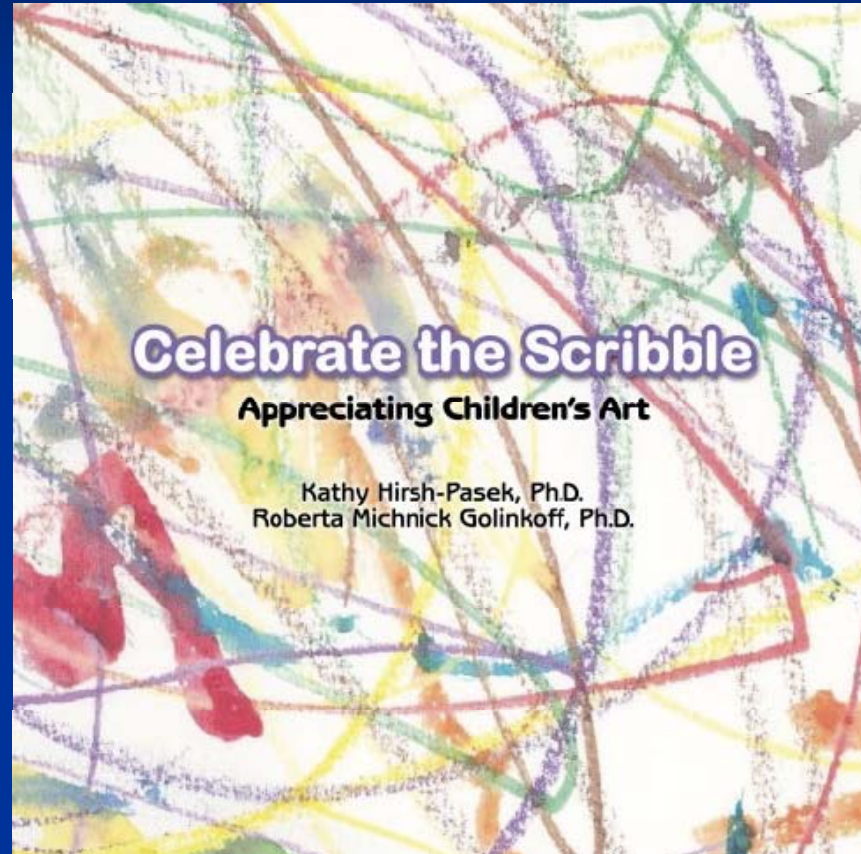


And we published



To lay forth the evidence about how play encourages social and academic development

Then we published...

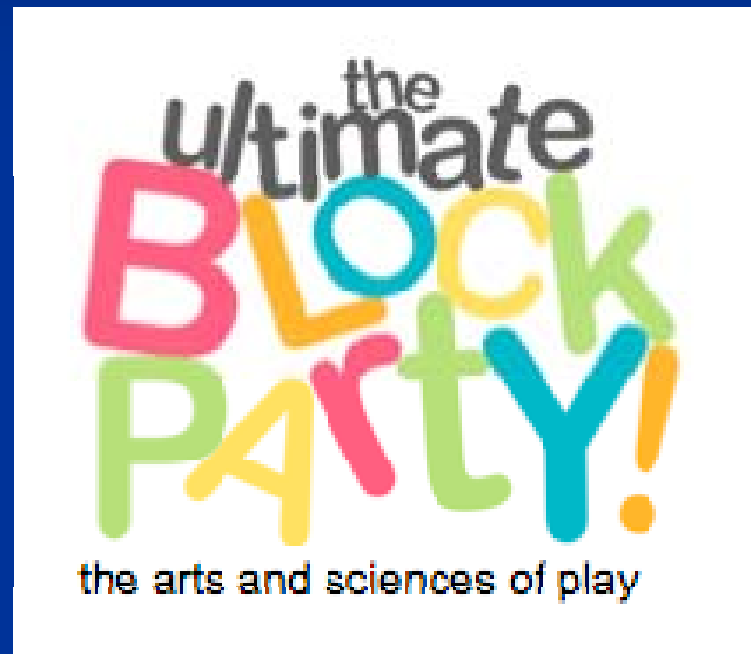


So that parents and teachers could better understand the learning evident even in the early swooshes and swipes of scribbled art.

And last year, we published



In October of 2010, we also put this science in the hands of families in Central Park for children 0-12!



And there is already a movement to bring the event to Chicago



50,000 +

The science of learning in action

Our point?

Playful learning can help children develop 21st century skills in **collaboration, communication, content, critical thinking, creative innovation and confidence**. It is now our job to use play as a key pedagogy for education and an acceptable pastime for parents and children .

In the knowledge era ...



A child must do more than just learn the facts; she must integrate those facts into a creative framework that solve tomorrow's problems

To reach her potential as a productive citizen in the year 2040...



she needs to have a high-quality early education that will prepare her as a **thinker** in the workplace of tomorrow.

We know what that workplace will demand (The 6 Cs) and we know what it takes to raise intelligent, well-adjusted, successful adults.

As Einstein said,

"Imagination is more
important than knowledge."

