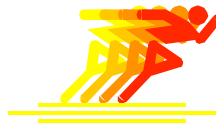


Everybody Needs Fluency!



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Agenda

- Background
- Problems? Opportunities?
- What does it mean to “be good at” something?
- A Research-based Methodology
- Applications and Implications
- Q & A

It's Not Just Poor Spelling!



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Problems? Opportunities?

- Employees “practicing” in front of customers.
- Too much re-training on the job.
- New Hires forgetting what they learned.
- Trainees pass tests but can't apply learning?
- Employees performing inefficiently.
- Training takes too long, still doesn't achieve objectives.
- Increasing failures in our schools.

What's the ROI?

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What is *Fluency*?

- You will have exactly 1 minute.
- Write (abbreviate) as many words or phrases as you can think of in association with this term.

Kindly don't start.....

...until I say....

"Please begin!"

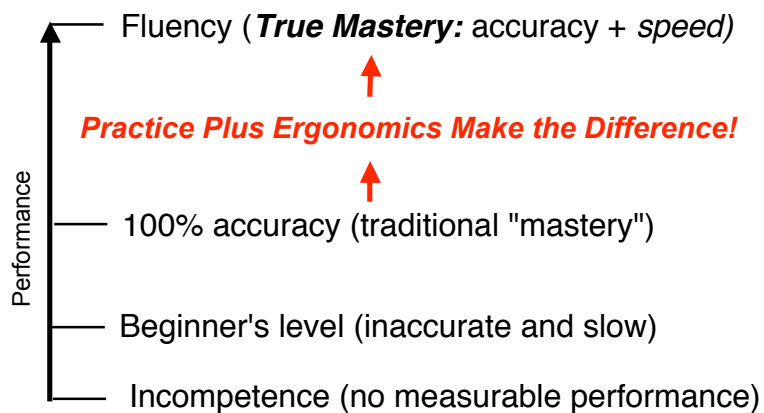
What Others Have Said...

- Smooth
- Can recall
- Easy
- Expert
- Unconscious competence
- Confidence
- Fun
- Automatic
- Practiced
- Fluid
- Creative like jazz
- Language skills
- Expressive
- Easy to apply
- Don't have to guess
- Know it forever
- Fast
- Accurate
- Know that you know
- Timing
- Rhythm
- Pace
- Sounds good
- ... and more....

Fluency: The *True* Definition of *Mastery*

- Fluency = Accuracy + Speed
- = Quality + Pace
- = Doing the Right Thing without Hesitation
- = Automatic or “Second Nature” Response
- = **True Mastery**

Levels of Performance



John Wooden, Basketball Coach

“ Skill, as it pertains to basketball, is the knowledge and the ability, quickly and properly, to execute the fundamentals. Being able to do them is not enough. They must be done quickly. And being able to do them quickly isn't enough, either. They must be done quickly and precisely at the same time. You must learn to react properly, almost instinctively.”

John Wooden of UCLA
They Call Me Coach (1988), p. 87

Champions in the Making!

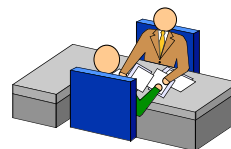
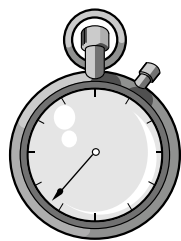


At the heart of the problem is
a misunderstanding about what it
means to be **“good at”** something

...and how we measure it.

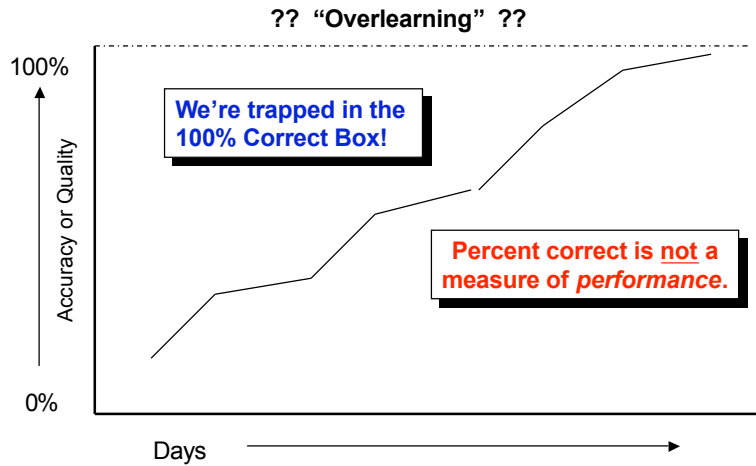
**The largely *unconscious* assumption
that mastery = 100% correct.**

***“You can take behavior out of time.... but
....you can't take the time out of behavior.”***
- Dr. Eric Haughton



100% Correct: A Measurement Ceiling

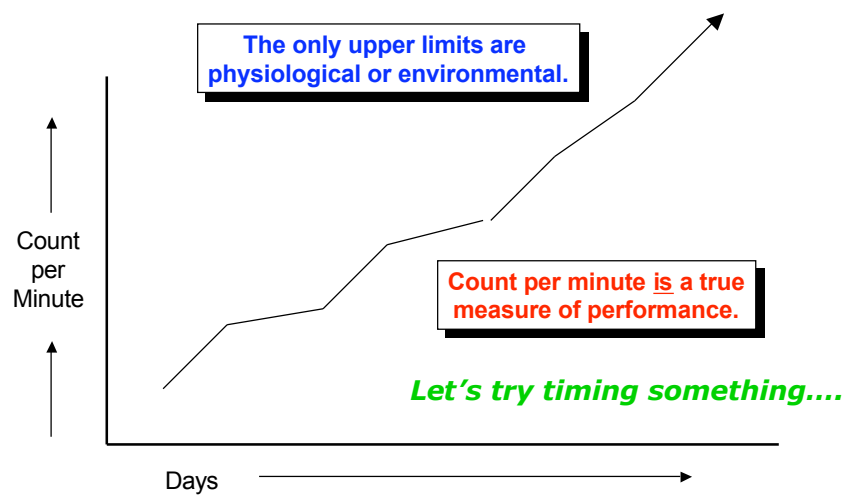
We've All Grown Up in A Percent Correct World



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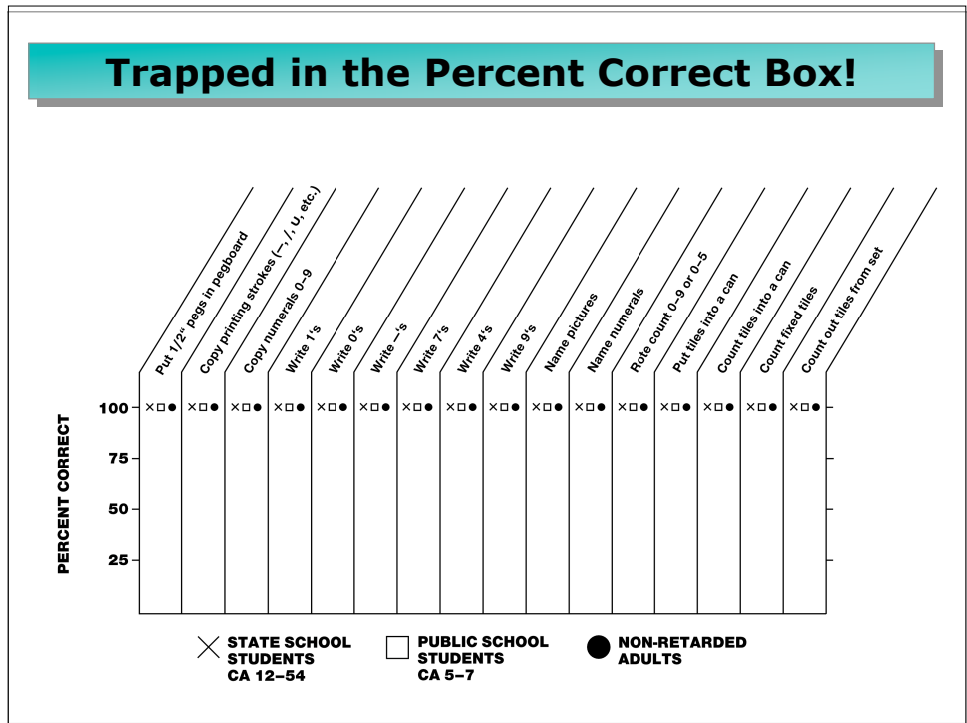
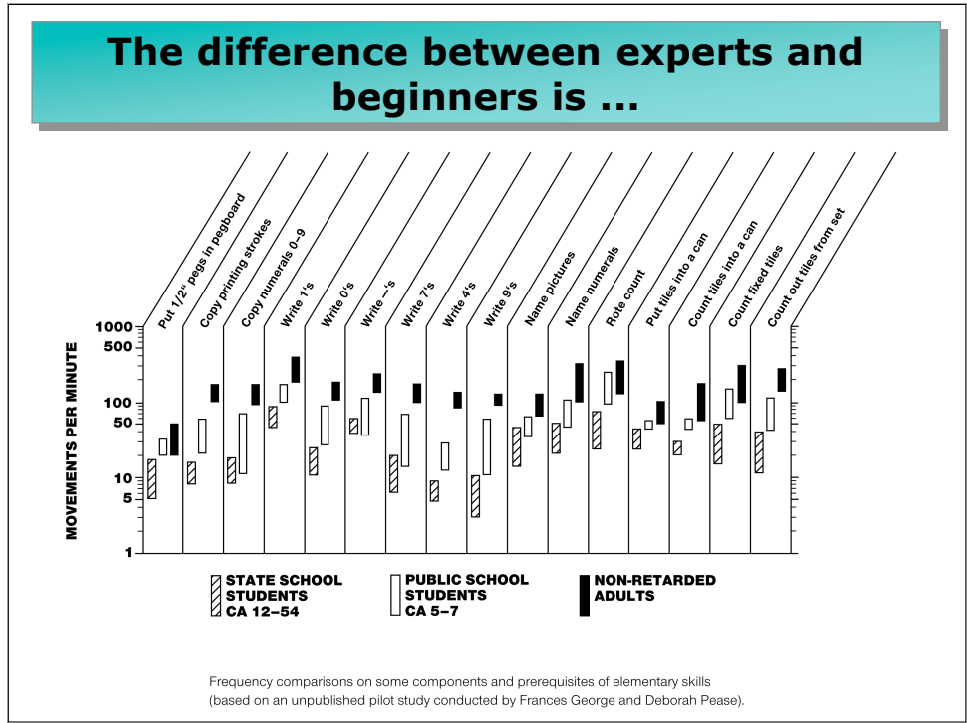
NO Ceiling on Time-based Measures!



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Time Underlies Objective Performance Standards

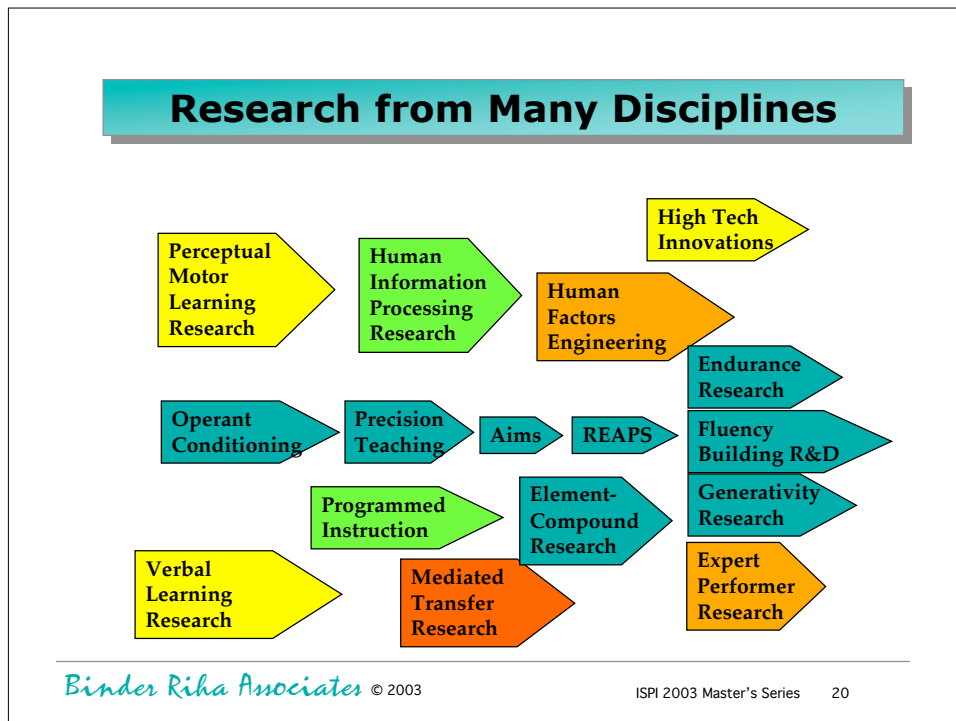
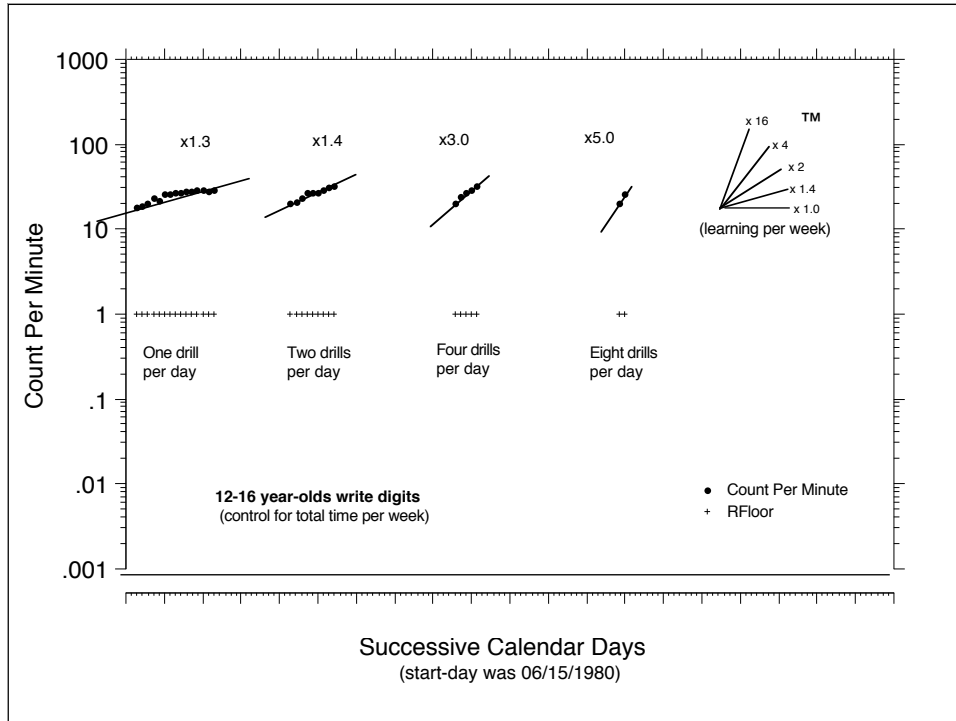
- **Tapping a surface:** 250-350 per minute
- **Writing Digits:** 140 to 160 characters per minute
- **Adding numbers:** 70 to 110 computations per minute
- **Typing on a keyboard:** 60 to 90 words per minute
- **Brainstorming ideas:** 20 to 35 ideas per minute
- **Choosing multiple choice items:** 15 to 25 per minute
- **Shooting basketballs:** 15-25 hits per minute
- **Speaking about a topic:** “at the same pace you’d speak about your hobby” (or 110 - 170 words per min.)
- **Playing a tune:** at the right tempo

Michael Jordan on Practice

“If you want to get better at anything, you have to practice. There’s no other way to do it. For me practicing is fun. I enjoy improving myself, and I enjoy developing new skills.”

*Michael Jordan, 1991
Television Spot*

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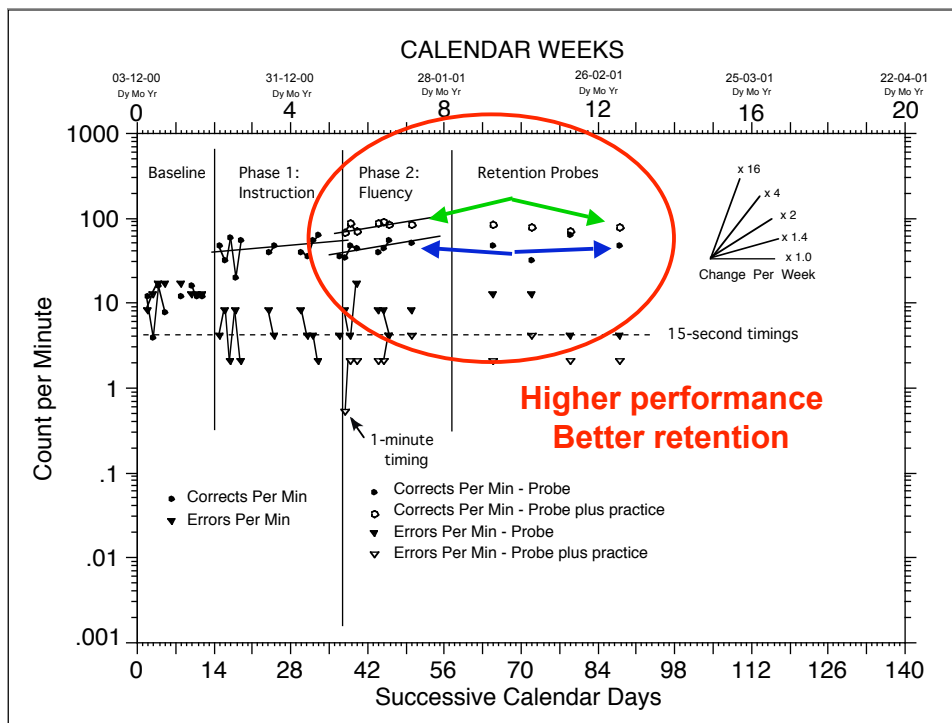


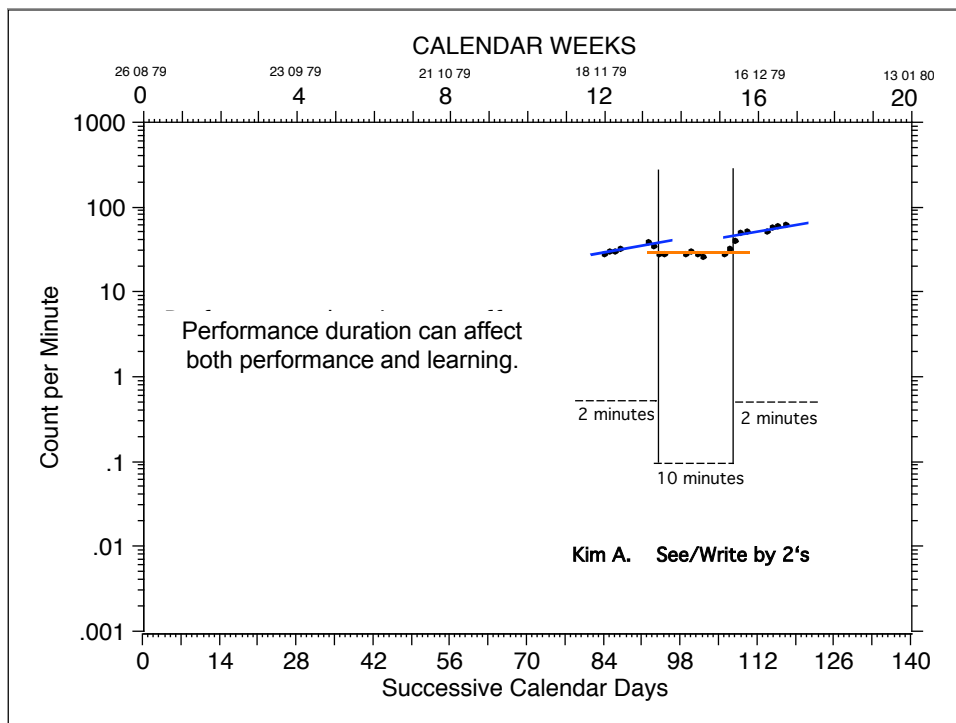
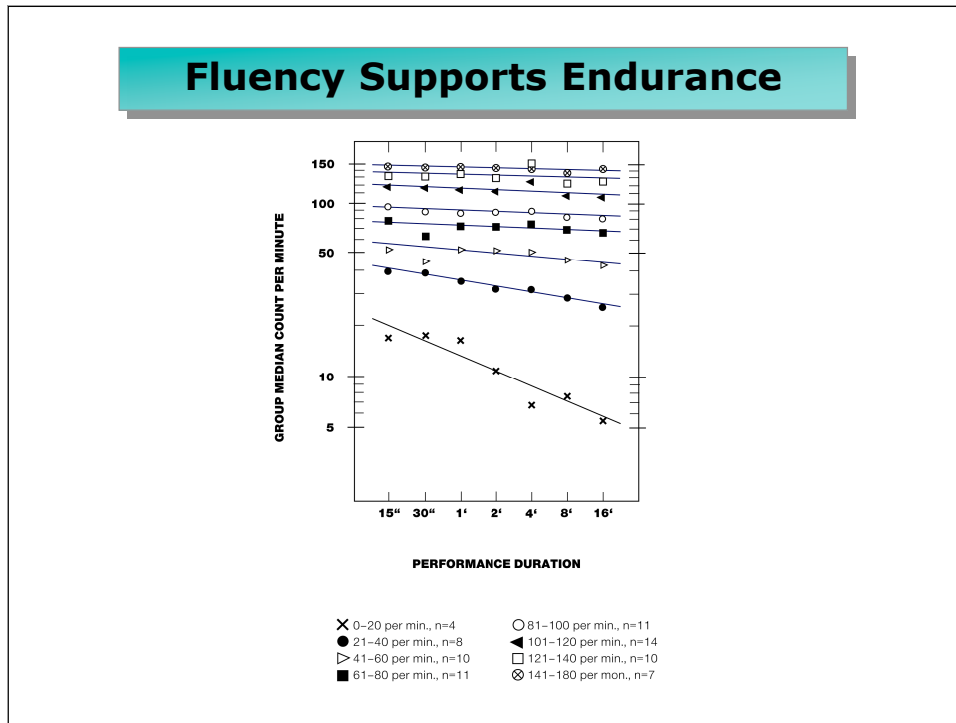
Results Associated with Fluency

Improves....

- Retention and maintenance of skills and knowledge
- Endurance, attention span, resistance to distraction
- Application or transfer of training to more complex tasks and subsequent learning (generativity, creativity)

Valuable Learning Outcomes!





Excessive practice durations prior to achieving fluency can.....

- suppress performance levels
- increase errors, negative thoughts and feelings, resistant behavior, etc., *and*
- slow down learning.

Let's experience it...

Using What We Know about Endurance

In the beginning, many brief practices are better than a few long ones for producing learning.

10 or 15-second “sprints” are best to start with many cases.

Application:

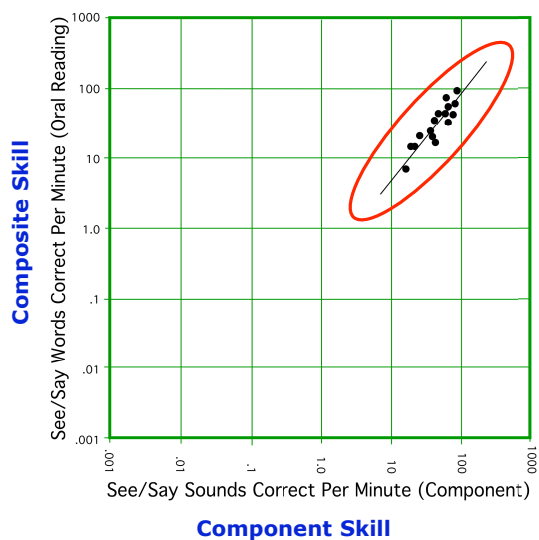
Building Behavior Composites from Components

- Steps in procedures, links in behavior chains
- Discriminations and actions
- Actions performed simultaneously (“coordination”)
- Paired associates, verbal equivalences

- We use different terms to describe such relations:
 - *Part / Whole*
 - *Element / Compound*
 - *Component / Composite*
 - *Core Fundamental / Routine*
 - *Tool Skill / Basic Skill*

Application

Fluent Components Enable Fluent Composites



**Component fluency
supports
composite fluency**

**This is true with
*all kinds of skills***

Ray Charles on *Practicing Components*

ROBERT SIEGEL: You practice a lot?

RAY CHARLES: Whenever I can. I don't -- I don't practice as much as I would like to, because I'm not around a big piano all the time. But I try to, you know, I try to practice a little bit every day for the most part.

ROBERT SIEGEL: And when you practice, I mean, do you practice the tunes that you'll be playing at the next concerts.....?

RAY CHARLES: Oh, no, no, no, no, no, no, no, no, no, no, no.....

ROBERT SIEGEL: I guess the answer is no, you're saying?

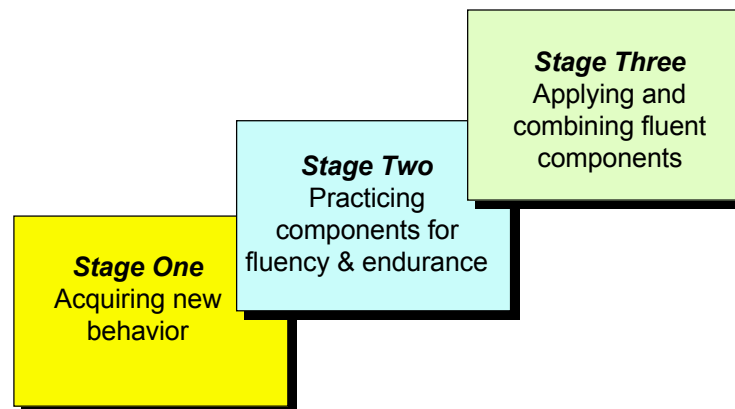
RAY CHARLES: No. No. I practice things like scales and chords and movement of my hands and things like that, because, I mean, I -- what I'm going to play on stage, I know. What I'm practicing for is to try to improve what I might play, you know. You gotta practice. I mean you gotta keep your fingers loose, you gotta keep your mind active, you know, because what your mind think of -- the question is: what your mind think of, can your fingers play it?

ROBERT SIEGEL: Right.



*Interview on National Public Radio
Celebrating Ray Charles 50 years in recording
September 23, 1997*

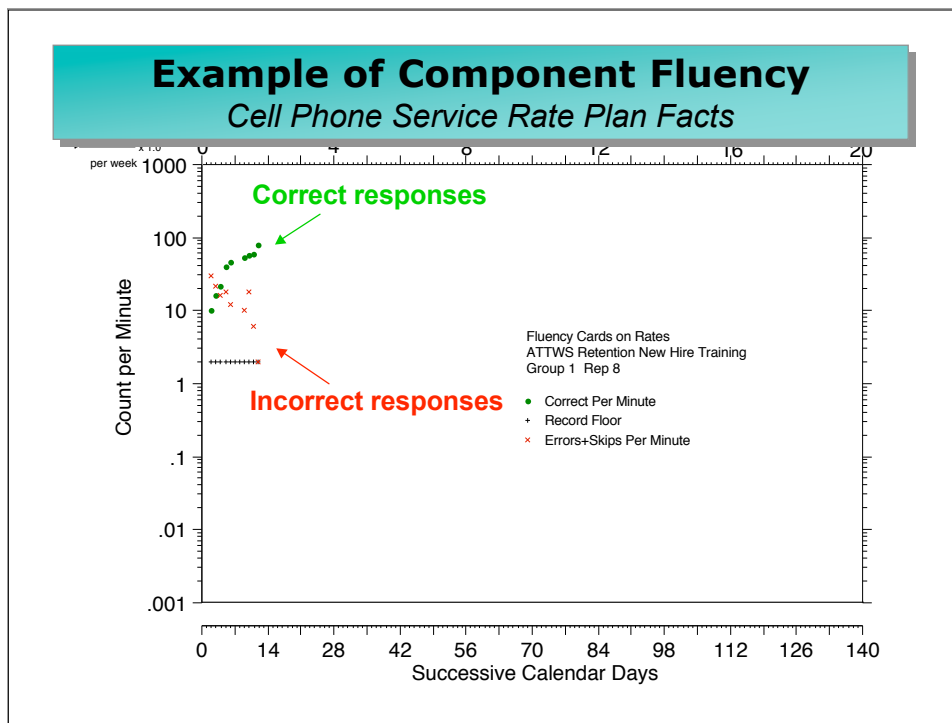
Implication for Learning Design: *Three Stages of Learning*

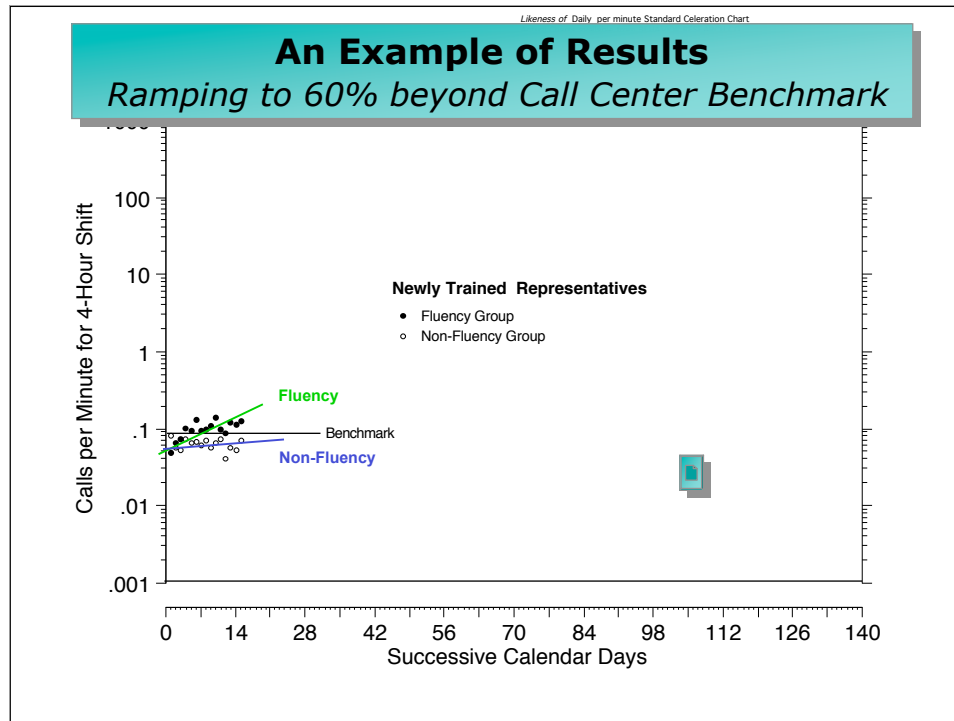


Each requires different procedures and materials.

<div style="background-color: #00A0A0; color: white; padding: 5px; text-align: center;"> Call Center New Hire Training <i>A Shift in Program Time Allocation</i> </div>		
	Previous Model	New Fluency Model
Classroom Lecture	70%	25%
Observe Tenured Performers	10%	0%
Review and application of job aids	10%	15%
Fluency Practice Exercises	0%	55%
On-the-Job Training	10%	5%

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Qualitative Observations of Program

- “Never a dull moment.”
- Energized, not numbed out by the end of the day
- “Bright eyed and bushy tailed.”
- “Boredom is our enemy.”
- Previously trained representatives asked if THEY could receive this type of training.
- Felt more like a gym than a classroom.
- Excitement, enthusiasm, confidence.

Positive Emotion plus Accelerated Productivity

Identifying and Replacing Fluency Blockers with Fluency Builders

- **Measurement** of performance and learning
- **Procedures** for learning and practice
- **Materials** for learning and reference
- **Skill** elements
- **Knowledge** elements

Features of Learning and Performance Systems that
Can Either Prevent or Ensure Fluency. 

Summary and Implications...

Fluency describes the goal of learning in a way that most people can understand. It quickly shifts their perspective, makes clear why percentage correct is a poor way to measure, and naturally leads to a discussion of fluency-based learning methods as solutions to a problem, means to an important end
..... achieving ***True Mastery***.

One cannot distinguish between expert and non-expert performance without *measuring the time dimension.*

It is essential to design materials, procedures, user interfaces, and other elements of performers' environments to encourage rather than obstruct the development of fluent performance.

If we do *not* measure the time dimension, we will likely fail to build environments that support fluency.

Achieving fluent performance often, if not always, involves the development of *fluent component behavior* prior to or at the same time as development of composite behavior.

Often the greatest obstruction to fluency development is simply *a lack of opportunity* to achieve fluency on critical components before being expected to perform composite applications.

It is helpful to view learning as occurring in three stages: 1) *initial learning* for accuracy or quality; 2) *practice of components* for fluency and endurance; and 3) *application or combination of components* into composite behavior.

Many programs fail to produce mastery because they skip or minimize the 2nd stage and prematurely plunge learners into the 3rd stage before they can fluently perform key components.

Perhaps the single greatest potential for improving the ROI of any program is to *allocate more time to practice on critical components* prior to requiring application or transfer.

This can usually be offset by *trimming scope with careful front end analysis, allocating less time to initial learning, and reducing time needed for application* by first building fluent components.

The revised program is almost always *significantly more cost-effective*.

Everybody Needs Fluency!



Discussion?

Thank You.



Replace Fluency Blockers with Fluency Builders

Does the MEASUREMENT method...	IF YES, then...
ignore the time dimension?	add time-based performance measurement and evaluation procedures.
provide too few response opportunities to fill the allotted time?	allow more response opportunities than an expert can complete in the allotted time.
lack explicit or sufficiently high fluency aims?	set aims that specify a <i>high standard of performance</i> (count per minute, duration, or appropriate pace – REAPS).

Do the learning PROCEDURES...	IF YES, then...
provide too few practice opportunities?	allow sufficient practice for each learner to achieve measured fluency.
prevent learners from moving at their own pace?	create opportunities for learners to practice and measure performance at their own pace.
limit the number of response opportunities per minute to a level below what top performers can complete?	change procedures to allow faster responding and prevent imposing arbitrary upper limits.
prevent or correct errors in ways that keep learners from gaining momentum?	treat errors as “learning opportunities” and place a high value on <i>fluent</i> responding.

Do the MATERIALS or ENVIRONMENT...	IF YES, then...
provide too few examples or non-examples?	include many examples to ensure learning.
drag down performance by being difficult to use, cumbersome, or inefficient?	create easy-to-use, efficient tools, materials, and ergonomics, and test for usability.
include unnecessarily wordy reference materials, work sheets, or directions?	revise and test for brevity and clarity.
present content that is difficult-to-read or understand?	edit or reformat for easier reading, accessibility, and comprehension.

Do learners have NON-FLUENT SKILL ELEMENTS that include...	IF YES, then...
critical steps in procedures or chained skills?	provide practice for fluency in critical steps.
“tool” skills or other components of more complex behavior?	ensure fluency in tool skills or other critical components.

Do learners have NON-FLUENT KNOWLEDGE ELEMENTS that include...	IF YES, then...
prerequisite knowledge that is not “second nature”?	provide practice for fluency in prerequisite knowledge topics (facts, concepts, structures, principles, classifications, or processes).
an inability to locate critical information in reference tools or job aids?	provide practice for fluency in using reference tools or job aids.