Designing Activities and Environments to Produce Fluency

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What is Behavioral Fluency?

Directions: Take a minute to jot down as many words or phrases as you can that describe behavioral fluency or its effects. ABBREVIATE so you can get your ideas down as fast as possible.

What is *behavioral fluency?*	What are its effects?

Summary: Key Ideas about Fluency

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Designing Environments and Activities to Produce Fluency

An Engineering Approach

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Agenda

- Introduction
- Research Background
- Experience Fluency and Dysfluency
- Fluency Blockers and Builders
- Application Exercise
- Discussion

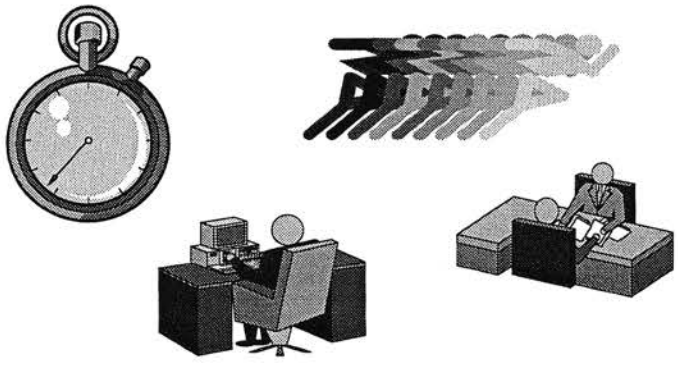
Problems? Opportunities?

- Less transfer of training to the job than you'd like?
- Employees not using tools and systems efficiently?
- Job aids that don't become part of the job?
- Training that takes too long, costs too much?
- Trainees forgetting what they "learned"?
- On-the-job coaching less effective than you'd hoped?

What's the ROI?

You can take behavior out of time..... but ....you can't take the time out of behavior.

- Dr. Eric Haughton



Fluency: The Definition of Mastery

Fluency = Accuracy + Speed

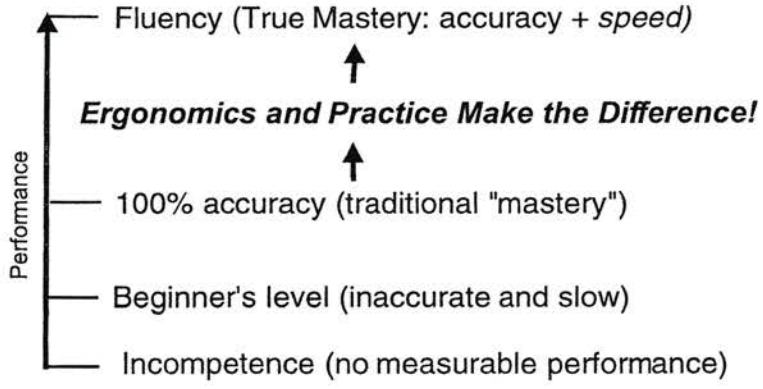
= Quality + Pace

= Doing the Right Thing without Hesitation

= Automatic or "Second Nature" Response

= True Mastery

Levels of Performance



Research on Fluency

- **Retention** and maintenance of skills and knowledge
- **Endurance**, attention span, resistance to distraction
- **Application** or transfer of training on the job and in subsequent learning

Learning outcomes that contribute directly to ROI.

Retention and Maintenance

- "Overlearning" trials in verbal learning studies produced faster responding and longer retention (e.g., Osgood, 1946).
- Practice to fluency in college calculus nearly doubled retention 5 weeks later (Bower and Orgel, 1984).
- Achieving more rapid accurate responding in basic skills yields greater retention in school children (e.g., Berquam, 1991).
- Over 30 years of applied research in Precision Teaching have shown that fluency improves retention.

Endurance and Attention Span

- Practice to achieve "automatic" responding in verbal learning produced greater resistance to distraction (e.g., LaBerge and Samuels, 1974; Binder, 1996).
- Ability to maintain high rates of responding in basic skills is related to speed of responding (Binder, 1984).
- Attention span in children is related to speed of performance (Binder, Haughton, Van Eyk, 1990).

Application

- Fluency in component skills allows fluency to develop in composite skills (Haughton, 1972).
- Fluency in elements of sales knowledge improves performance in complex cases (Binder & Bloom, 1989).
- Keyboarding fluency facilitates learning complex patterns (Daniels-Blakeslee, 1985).
- Building fluency on components of complex academic skills generates new skills (e.g., problem-solving) "for free" (Binder, 1979; Johnson & Layng, 1992).
- 30 years of Precision Teaching and FluencyBuilding™ have shown that fluency improves application.

Examples

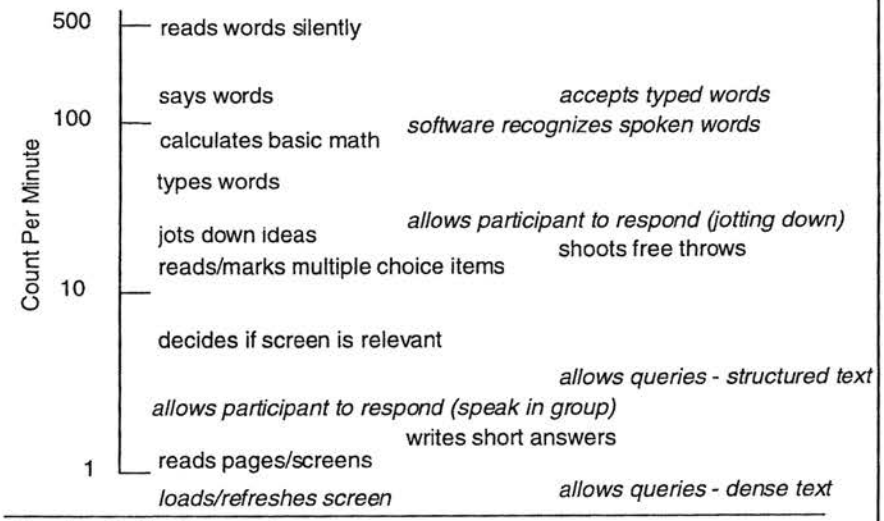
- Bank Cash Management Executives
- Software Sales Professionals
- Phone Center CSRs
- Interstate Truck Drivers
- Insurance Enrollers
- Women's Basketball Champion

Ergonomics and Frequency Matching

ERGONOMICS: an engineering science concerned with the physical and psychological relationship between machines and people who use them. The ergonomicist assesses these interactions and attempts to improve efficiency and reduce strain and discomfort. Applications include the design of automobile interiors and the placement of machine switches and gauges.

To enable fluency, we match frequency of behavior with frequency of the environment's ability to "respond."

Behavioral & Environmental Frequencies



Try to Match Behavioral and Environmental Frequency Ranges

BEHAVIOR frequency range:	ENVIRONMENTAL frequency range:
Performing sales in real time	Web page response speed
Entering words into a database	Ability of system to receive words per minute
Shooting basketballs	Rate of providing balls to shooter
Generating ideas about a topic	Capacity to allow / receive / record ideas
Discriminating examples	Ability to present examples and record answers
Typing answers to math facts	Pace of computer-based learning program
Adjusting parts on an assembly	Speed of assembly line
Shooting aliens in online game	Speed at which system presents alien targets

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

Ray Charles on Practice

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 do 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.....

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

Categories of Fluency Blockers and 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.

Are These Fluency Blockers?

- Microsoft Office "help guy" interrupts work flow.
- Web pages too slow for customer service rep.
- Slow typing speed undermines sales automation.
- Poorly structured documents discourage use.
- Non-fluent system navigation slows telesales.
- Lack of practice opportunities prevents fluency.
- Slow math facts prevent solving "story problems."
- Lack of fluent knowledge impedes face-to-face sales.
- Inefficient tool use yields slow maintenance cycles.
- Untimed multiple choice tests allow "plenty of time."

Application Exercise

Use the FluencyBuilder Worksheet to identify fluency blockers and potential fluency builders in the Application Scenario.

If you have time, think about potential blockers and builders in your work or school environment.

Questions? Comments?

- New ideas?
- Examples and comparisons
- Things you plan to try?
- Questions about application?
- Other comments or questions?

Fluency = Accuracy + *Speed* = True Mastery

Category	Fluency Blockers	Fluency Builders
Measurement	Measurement procedures that ignore the time dimension. Measurement procedures with too few response opportunities for the allotted time.	Time-based performance measurement and evaluation. More response opportunities than an expert can complete in the time allowed.
Procedures	Too few practice opportunities. Preventing learners from moving at their own pace. Limited response opportunities per minute. Emphasis on preventing errors during learning.	Sufficient practice to attain fluency. Self-paced learning and practice procedures. Many opportunities per minute for active responding. Treating errors as "learning opportunities."
Materials	Too few examples. Materials that are difficult to use, waste paper, movement, etc. Unnecessarily wordy worksheets and directions. Difficult-to-read and comprehend.	Many examples. Easy-to-manipulate or use, efficient use of paper, space and movement. Succinct worksheets and directions. Easy-to-read and comprehend.
Skill Elements	Critical steps in procedures or chained skills that are not fluent. "Tool" skills or elements that are not fluent.	Fluent steps in procedures. Fluent "tool" skills or elements.
Knowledge Elements	Prerequisite knowledge that is not "second nature" or fluent. Inability to fluently locate critical information.	Fluent prerequisite knowledge (facts, concepts, structures, principles, classifications or processes.) Ability to use reference systems or job aids fluently, confidently.

For more information about the FluencyBuilding™ methodology, including published articles and research reviews, or to discuss on-site workshops for your organization, call 1-800-FLUENCY(358-3629) or visit www.Binder-Riha.com.

Identify Fluency Blockers and Fluency Builders

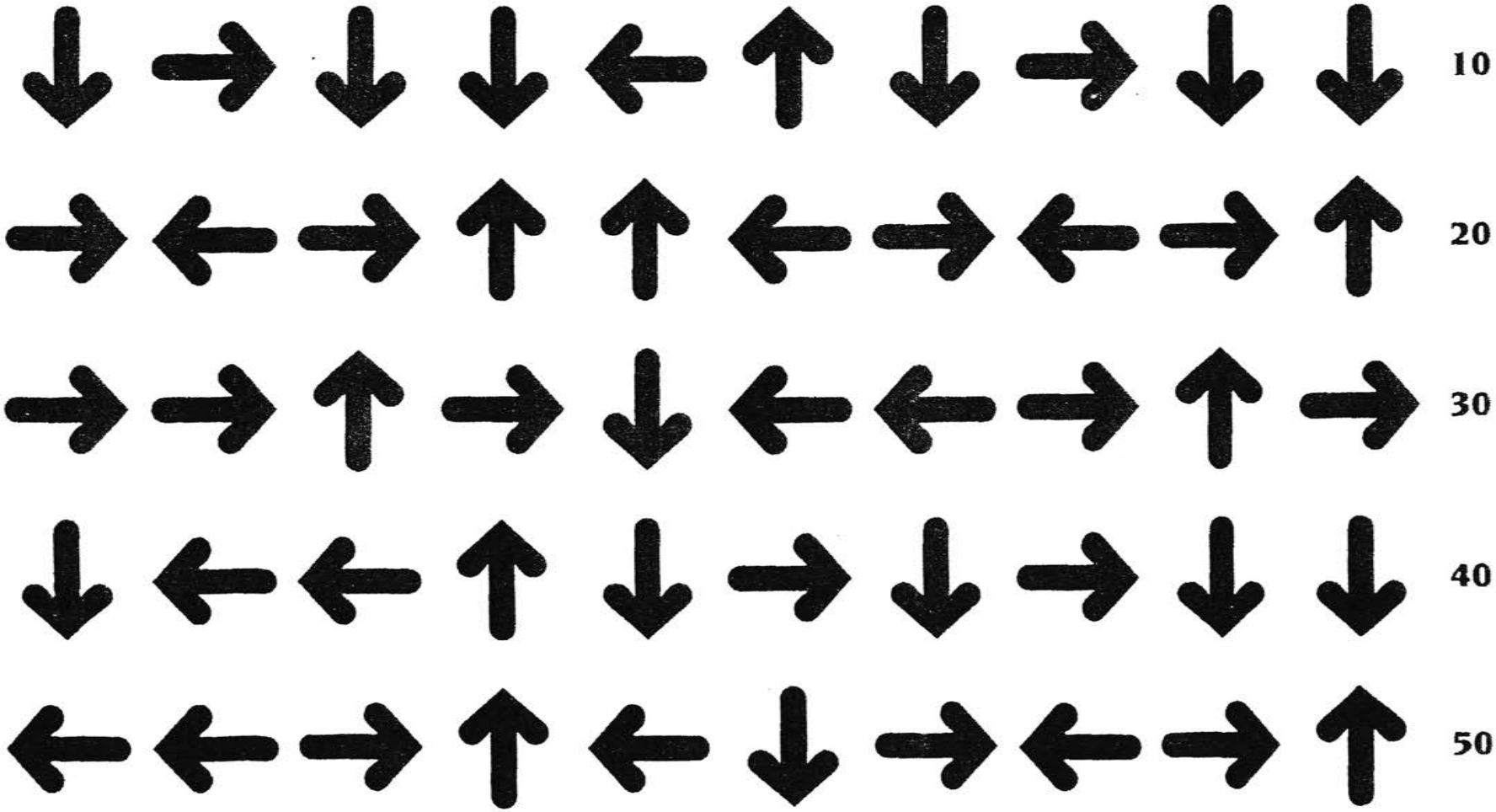
See/Mark Fluency Builder (+) or Fluency Blocker (-) Fluency Standard: *40 - 30 correct per minute*

+ or -	Description	+ or -	Description
	Wordprocessor automatically turns web URLs into links		Cute cartoon animates Microsoft Office help system
	Multiple choice test allows unlimited time to respond		Kids' software corrects or praises each response in game
	Give many examples and non-examples of key concepts		Practice rapid recall of details before brief presentation
	Voice recognition (vs. typing) for entering sales notes		Teacher presents basic multiplication facts one at a time
	Counting on fingers to answer math problems		Practice counting by 7's before learning 7 times tables
	Trainees who read at 60 words per minute		"Green lighting" criticism in brainstorm session
	Participants suggest new ideas in class, one at a time		Practice chords and scales before playing jazz solo
	Web page refreshes in 7 seconds		Eliminate extra words from practice materials
	10-minute test contains 20 multiple choice questions		Two opportunities to practice complex role play
	Student answers basic add facts at 25 per minute		Practice difficult steps in assembly before whole task
	Trainees practice each step before whole role play		Web page refreshes in 50-60 seconds
	Help system interrupts with suggestions as you work		Executives on email lack typing skills
	3-ring reference binder does not have index or tabs		All Product Marketing web sites are organized the same.
	Teach product knowledge to Sales in PowerPoint lecture		Reformat job aids in a more readable font.
	Use many balls and a helper to practice free throws		Can answer simple subtraction facts at 80 per minute
	Stop for 1 min. to jot down ideas before sharing in group		Eliminate speaking pace criteria from speech training
	Sales automation users type 20 words per minute		Two hours of uninterrupted practice for a new skill
	Job aids present user response before stimulus condition		Speed reading for investment analysts
	Trainees practice facts on flash cards before lecture		Users look up screen codes to access customer data
	Trainees practice with job aids to gain confidence		Trainees practice with flash cards until 100% correct

Learning Success Practice Sheet

1) See/say•do direction of arrow
2) Time for 10 seconds, 30 seconds or 1 minute
3) Use "Please begin" to start all timings.

Haughton Learning Center™
(707) 224-8863



Please Recycle

Name_____ Date_____ Count: correct_____ error_____ Time: 1 min.

ADDITION FACTS - Answers 0-10 - Vertical

7	5	8	6	0	0	2	4	0	5	0	5	2	8	6	1	0	2	3	0
+2	+1	+2	+0	+7	+4	+3	+4	+0	+0	+8	+4	+5	+1	+1	+3	+1	+8	+7	+6
0	3	0	2	1	3	4	9	3	5	1	6	3	4	5	2	9	3	1	1
+5	+3	+2	+0	+1	+6	+3	+0	+4	+2	+0	+0	+3	+2	+1	+1	+1	+1	+4	+6
5	7	2	1	0	8	4	1	4	6	2	1	3	4	7	2	1	6	4	3
+5	+3	+6	+8	+3	+0	+6	+9	+2	+4	+1	+5	+2	+5	+0	+4	+7	+3	+1	+5
2	1	2	0	0	2	4	0	0	8	4	6	5	1	1	3	1	8	7	3
+7	+5	+8	+6	+0	+7	+0	+7	+4	+0	+5	+0	+2	+8	+6	+1	+0	+2	+3	+4
5	3	2	0	1	6	3	0	4	2	0	3	2	1	1	4	7	5	3	4
+0	+3	+2	+2	+1	+3	+4	+9	+3	+5	+1	+0	+6	+0	+9	+0	+2	+3	+1	+4

Performance Descripton: _____

Consultant - Analyst: _____ Organization: _____ Date: _____

Categories of Fluency Builders	Opportunities for Improvement
Measurement: *accuracy + speed* • Time dimension? • Responses fill timing period? (don't "run out") • Doesn't stretch endurance?	
Procedures • Many opportunities? • Self-paced? • Many opportunities per time unit? • Minimizes error slow-down?	
Materials & Environment • Many examples? • Easy to use / good ergonomics? • Clear effective directions? • Easy to read / comprehend?	
Skill Elements • Fluent steps / components? • Fluent tool skills?	
Knowledge Elements • Fluent discriminations? • Fluent verbal prerequisites? • Fluent access to critical information / reference systems?	

Application Scenario: Fluency Blockers and Builders

Directions: Read through the following scenario and identify as many opportunities as you can to improve performance by replacing fluency blockers with fluency builders. Use the FluencyBuilder™ Worksheet to record your ideas. Discuss your suggestions with the group.

Scenario: The following describes the environment and training approach used in a customer service telephone center.

Customer Service Representatives (CSRs) work in 8-hour shifts fielding questions, solving problems, and transferring calls to others in the Company, when appropriate.

They use customer relationship software that contains account information and other key data that the CSRs must access in realtime while on the phone with customers. To access information, they either type 5-digit screen codes directly into the system, or they point and click to various menu items, tabs, and buttons on the screen.

The CSRs also use information on an intranet web site while speaking with customers. The site contains broad information about the Company, as well as product information and troubleshooting advice. There are a few procedures in the system written down to the step level, although formats are sometimes hard to read or interpret. Lots of information (e.g., pricing, specials) changes often, while some remains stable for long periods of time.

The CSRs use email and spreadsheets on their desktop computers, as well. The monitors are large enough to have one of the main programs or systems/environments open at a time, so users switch between the intranet and the customer relationship software frequently, sometimes multiple times within a telephone call. There's a policy that discourages using any paper documentation, due to concerns that paper documents may not ensure maintaining accurate information. Some of the most successful CSRs print out certain key information so that they can access it at the same time as they look at another software program on their screens.

Training for newly hired CSRs requires 3 weeks, and is mostly lecture and discussion, with a few games and some brief written activities. There are concepts and background information that the CSRs need in order to understand features and operation of the technology products and services they support, and what can go wrong. There are many terms and definitions, and they spend a lot of time learning how to access appropriate software screens in different customer call situations.

In addition to learning how to use the online systems, and to understand and apply what's in them, the new CSRs learn how to speak with customers , and what to say. The expectation is that they will be confident and genuinely helpful to the Company's customers. They are monitored regularly on the phone, and scored on a range of customer service criteria. Each criterion is associated with the use of specific types of language (e.g., how to say and not say a given thing), tone of voice (e.g., confident, friendly), ways of relating to people (e.g., greetings), etc.

The best CSRs also become very skilled at generating options in problem-solving or customer satisfaction situations. They have learned to "go out of the box" but within policy, to satisfy or delight the customer. Most experienced CSRs, not only new hires, lack this ability.

Evaluation of learning consists of mixed-item tests, including multiple choice, fill-in, and short answers. Facilitators want people to be comfortable in the testing situation, so they allow the students to take as long as they need to complete the tests, within reason.

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