# Secrets of Super Learners

Presented by:
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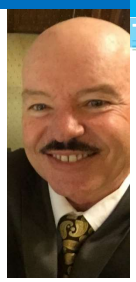
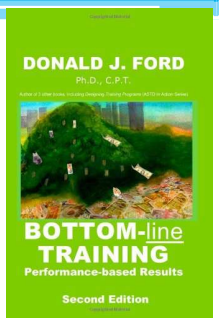


Welcome to this ATD 2021 Conference presentation. You will learn about secrets that Super Learners employ to maximize their learning and how you too can use these strategies.

Your presenter, Donald Ford, Ph.D., has been an Instructional Designer since 1986 and a thought leader in the training and talent development fields for over 30 years, including authoring three books and over twenty articles on these subjects.

## Introductions




Presenter: Donald Ford, PhD

- President, Training Education Management LLC
- ATD Facilitator – Instructional Design, Evaluation, HPI
- Professor Emeritus of Management, Antioch University Los Angeles
- Author – *Bottom-Line Training, In Action: Designing Learning*
- Instructional Designer and Performance Consultant

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As President of Training Education Management LLC since 1997, Dr. Ford has consulted with clients like: ATD, ANSI, Amgen, Toyota, Nissan, Rockwell International, Samsung Electronics, Orange County Transportation Authority, Southern California Edison, Employers Group, Saudi ARAMCO, CompuCom, Central Bank of Egypt and Malaysian Institute of Training and Development. For these and other clients, he has developed custom classroom, structured on the job and web-based training on a wide variety of technical and professional topics, conducted performance and needs analyses, facilitated groups, managed quality improvement projects, taught train the trainer, HR and leadership courses and evaluated results.

He has a Ph.D. in Education (Instructional Design) from UCLA.

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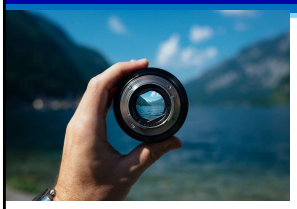
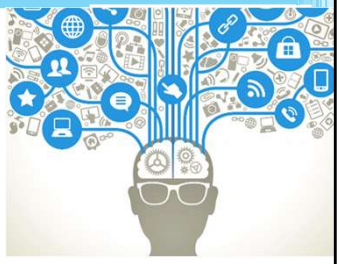


## Workshop Objectives



- Describe the key elements of super learning
- Develop strategies to become a super learner
- Facilitate super learning in others

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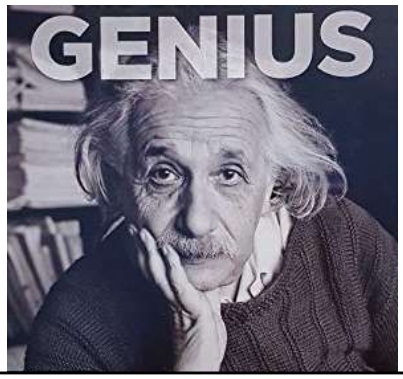
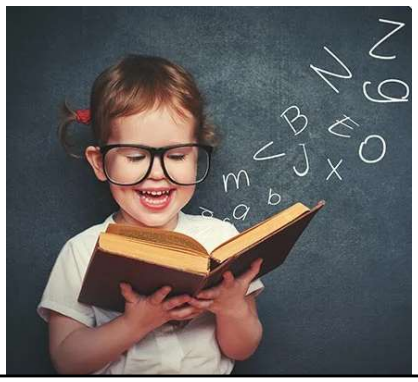
My purpose today is three-fold. First, to introduce the secrets that super learners employ to accelerate their learning. Second, to help you apply these secrets to your own learning journey and third, to help you facilitate super learning for those you serve as a talent development professional.

Through application of these ideas and experience, you will further develop your ability to be a super learner.

## What is Super Learning?

Nature? X Nurture?



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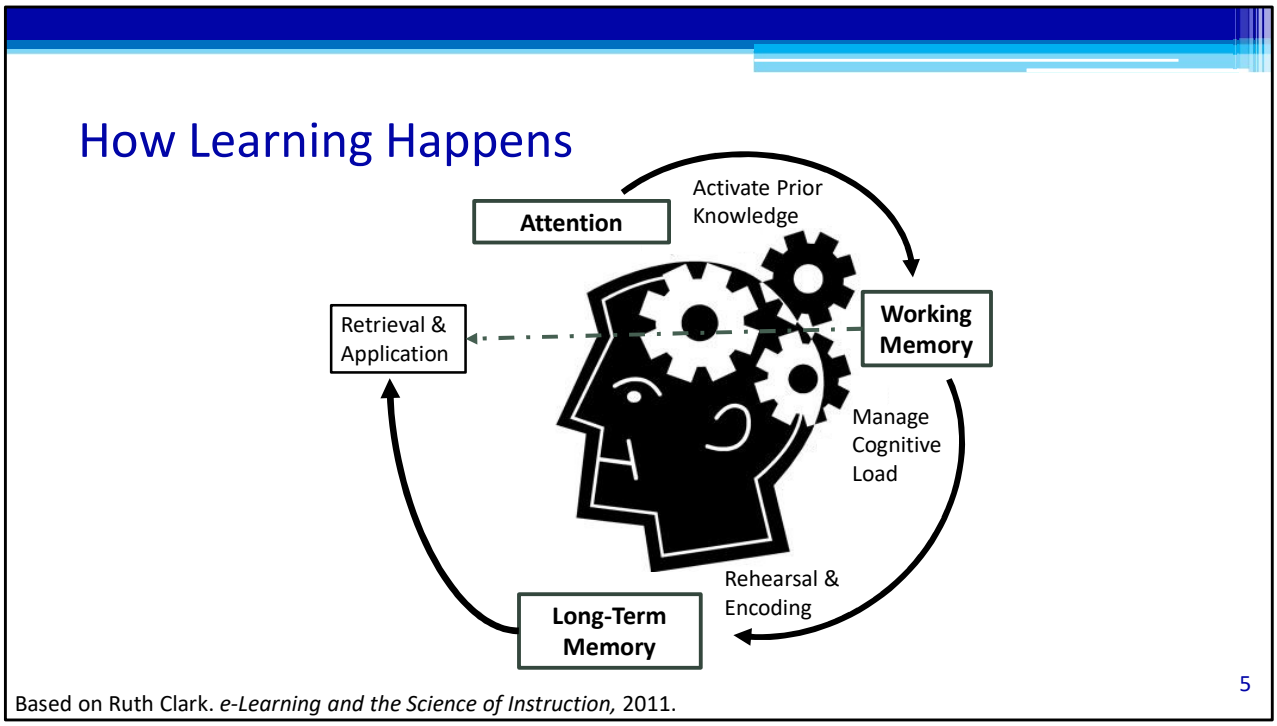
We know that some people learn easier and better than others, but why is this? Is the reason because of superior native intelligence or due to superior education and personal effort? I believe the answer is not either/or, but both. We can take whatever natural ability we are born with and improve it through a systematic approach to learning.

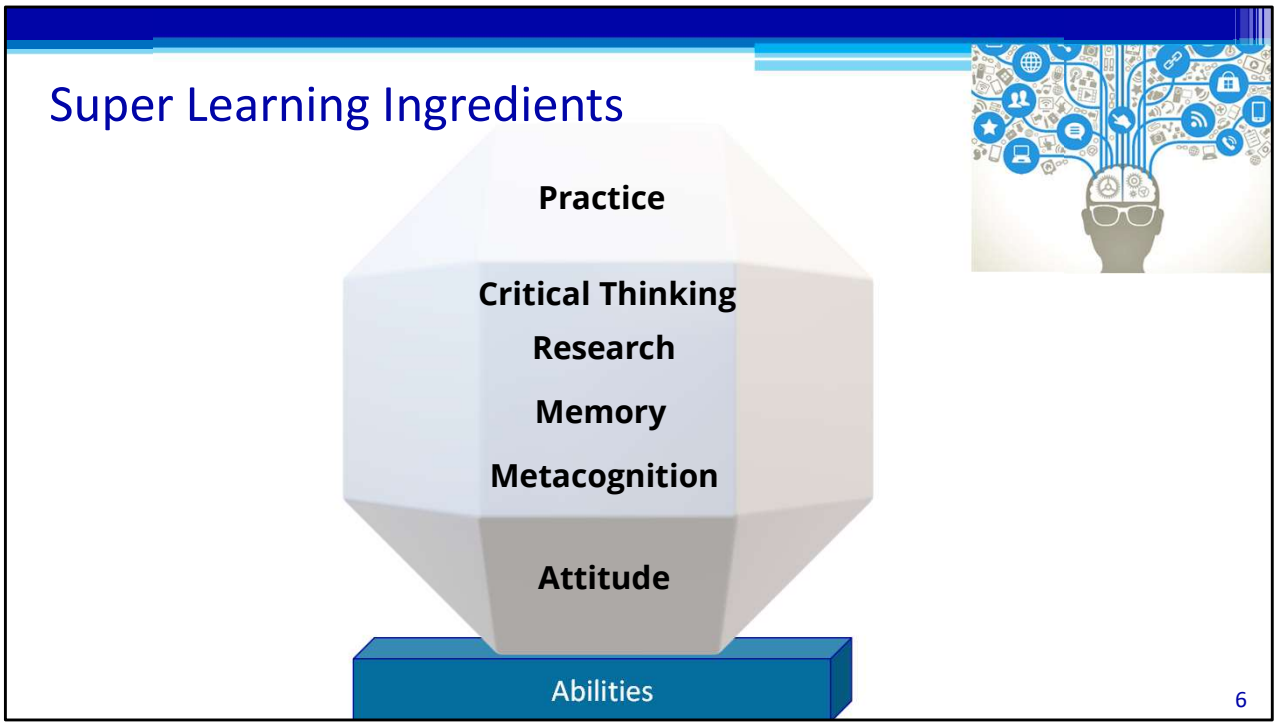
Super learning is a series of strategies to maximize learning. While some people have figured this out through trial and error, it is possible to learn these strategies and apply them to our daily lives.




Neuroscientists have learned a great deal about how learning occurs in our brains. They are now able to measure and detect learning as it occurs, using MRI and other technologies.

Learning starts with attention – focusing our minds on a new subject and activating any prior knowledge we may possess. This gets us ready to learn. Our working (short-term) memory is where we process new information, assigning meaning. Because it is limited to about 7 unique items, we must manage the cognitive load by breaking complex knowledge and skill into manageable chunks of content. To be truly useful, learning must be stored in long-term memory for future use. This occurs through rehearsal (practice), since repetition helps encode the learning as a permanent memory. Finally, we need to be able to retrieve learning from our long-term memory when needed and apply it in the context of our work. This involves moving the memory from long-term storage to our working memory so we can then do something useful with it.

Super learners have figured out ways to make this natural learning process work better and faster, thus allowing them to maximize the benefits of learning.




Super learning strategies include six key elements as shown above. Based on the foundation of our natural abilities, super learners start with a positive attitude about learning and develop strategies to plan their learning, improve their memories, conduct research and employ critical thinking to discover new knowledge and perfect their knowledge through purposeful practice.

## It All Begins with Attitude

- Curiosity
- Open-mindedness
- Learning motivation = I x O

  {Interest X Outcomes}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Human behavior starts with attitude. What we think, feel and believe about the world around us causes us to make decisions based on the values we develop and ultimately to behave in ways we think are consistent with those values. In the case of learning, the key attitudes are:

•Curiosity – spark our interest and sustain our attention

•Open-mindedness – willingness to embrace new ideas and experiences and examine one's beliefs

•Motivation – desire to achieve something of value through our own efforts

Learning motivation consists of two key factors – interest in the subject (intrinsic) and desire to achieve the outcome (extrinsic). Super learners maximize both intrinsic and extrinsic motivation to drive their learning journey.

## How to Maximize Learning Attitudes


- Think of a subject you would like to learn more about
- Ask yourself:
  - What sparks my interest in this subject?
  - How might my life change as a result of learning this?
  - What personal satisfaction and professional benefit could I gain from learning this?

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To help you begin to apply these Super Learning strategies, think of a subject that you would like to learn more about and ask yourself the questions above to define your attitude towards this subject.

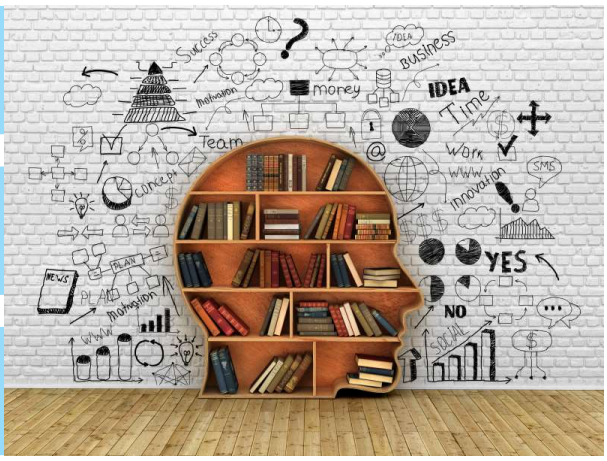
In lieu of small group activities, I would like to welcome several people to share their example with the rest of us.

My example: Becoming an Instructional Designer

1. What sparked my interest? When I started out my career as a high school teacher, I initially enjoyed presenting and facilitating learning for teenagers. Later, I became interested in how the textbooks and learning materials were created for public schools. I began to create some of my own learning materials and found I enjoyed writing as much as teaching.
2. How did my life change? Over time, I transitioned from a classroom teacher to a corporate trainer and then to instructional designer. After managing designers in a large corporate setting, I became an independent consultant selling custom instructional design solutions.
3. What personal satisfaction and professional benefit have I gained? For me, the personal satisfaction comes from knowing that the training programs I have designed have helped tens of thousands of adult learners over the years. I have produced well over 100,000 pages of learning materials in a wide range of subjects, covering both technical and leadership skills. The professional benefit is that I have run a successful instructional design consulting practice from my home for nearly 25 years, a business that has sustained my family and I and provided many benefits, including taking me to over 30 countries on five continents and getting to know thousands of interesting people from all over the globe.

## Metacognition Provides Learning Blueprint

- Thinking about thinking – Mental Models
- Be a self-aware learner
- Create learning strategies

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Metacognition is defined as thinking about thinking or understanding one's own thought processes and the mental models we construct to explain the world around us. Metacognition may take many forms, but is typically divided into two types:

1.Knowledge about cognition – learning how the brain naturally learns and the different forms of knowledge

2.Regulation of cognition – adopting specific learning strategies for different subject matter

In the case of learning, metacognition is expressed in terms of study skills, memory techniques and monitoring progress toward a learning goal. Although a few people are naturally blessed with superior metacognition, most need to be explicitly taught this along with the subject matter of their coursework. The most important metacognitive skills for learning include:

•**Planning**: appropriate selection of learning strategies and the correct allocation of resources

•**Monitoring**: one's awareness of comprehension, memory and task performance and ability to self-correct

•**Evaluating**: appraising the outcome of task or knowledge acquisition and its quality and efficiency

Key learning strategies include:

- Theoretical learning – understanding the big picture and the "why" of things
- Behavioral learning – breaking things down into discrete components and developing fluency through practice
- Discovery learning – using intuition and trial and error to explore and create new things
- Humanistic learning – listening to others and modeling ourselves based on their insights and wisdom

## How to Maximize Metacognition


Thinking of the same subject you want to learn, ask yourself:

- What mental models would help me learn this?
- How can I plan, monitor and improve my learning?
- Which learning strategies would be most helpful?

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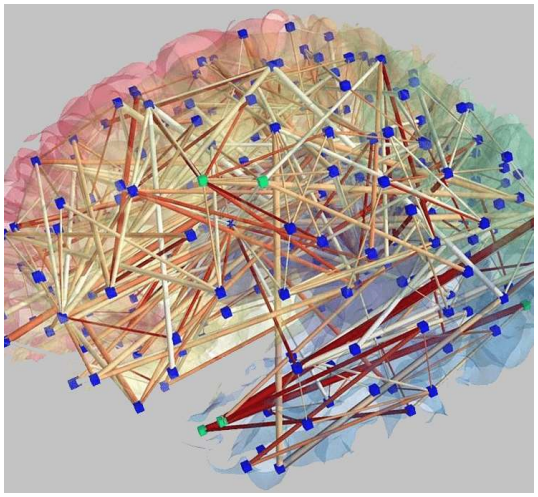
Continuing with the topic you have chosen, ask yourself the questions above to activate metacognition strategies.

My example: Learning Instructional Design

1. Mental Models I used: ADDIE, Bloom's Taxonomy, Gagne's Psychological Processes of Learning, Ruth Clark's Science of Instruction
2. Monitoring and Improving: Debriefed each major instructional design project to identify lessons learned and identified problems and root causes of instructional design projects that did not produce the expected results.
3. Learning strategies that proved useful: Trial and error, Iterative approaches, Peer and End User review, Program evaluation

## Memory Makes Learning Useful

- Repetition
- Mnemonics
- Associations



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As we explained earlier, our brains create memories through a complex process of receiving sensory input, assigning meaning to it and then storing it away for future use. Our sensory memory receives input from the environment through our five core senses (each with its own processing center in our brains). This sensory information is transferred to our short-term working memory, where it is processed and meaning assigned. If not forgotten, this memory is passed to our long-term memory through rehearsal and encoding, where it joins the repository where all our life experiences and knowledge is stored. Our memories benefit from techniques that use simplification and association to increase the likelihood that we will remember when we need to.

Besides repetition, the other factor that affects memory is recency. We remember things that just happened, but the memory tends to fade with time. To increase our ability to remember, we create mnemonics like acronyms, acrostics and rhymes. These simplify the things we need to remember, thus making it easier.

A more powerful way to increase memory is through associations. We pair the thing we want to remember with something we already know. The association helps trigger the memory when we try to recall it. Experts create associations with places, numbers, colors or words. One famous memory technique is the Palace of Memory, where one uses a physical building to associate various items to be memorized, each in its own room.

## Research and Experimentation Create Knowledge

| | |
|---|---|
| Identify | Identify reliable sources |
| Curate | Curate and apply research |
| Apply | Apply scientific methods |
| Discover | Discover new things |

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Super Learners don't settle for acquiring knowledge; they also set out to create new knowledge. They do this through strategies that include:

- Identify reliable sources of information about their subject
- Curate research studies into useful bodies of knowledge and share them with others to guide better practices
- Apply the scientific method of controlled experimentation to confirm truth and discover new things.
- Discover new things by boldly exploring the world around us

## Critical Thinking

- Evaluate facts vs. opinions
- Interpret information
- Draw inferences

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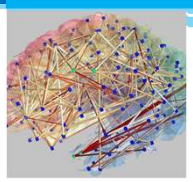
Critical thinking is a key learning strategy for Super Learners. They develop a sense of scientific skepticism about unfounded claims and learn how to separate fact from opinion by being able to confirm facts from multiple reliable sources. They also develop keen interpretive skills that enable them to absorb new information while comparing it to what is already known and constantly adjusting their knowledge.

Finally, Super Learners develop the ability to draw inferences from the knowledge and evidence they acquire, using these to predict human behavior and future events. This is the well of wisdom that many years of experience can provide. The key is to be able to draw accurate inferences from our past experience that can help us do better in the future.

## How to Maximize Learning



Thinking again of your subject of interest, ask yourself:

- What memory techniques would prove useful?
- Where can I find reliable information?
- How do I know if something is true?
- How can I contribute new knowledge?
- How can I use my knowledge to improve future outcomes?

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You have seen how memory, research and critical thinking help Super Learners to achieve greater learning. Now apply this to your own learning. Ask yourself these questions to help guide you to selecting learning strategies that will maximize your learning.

In the case of my pursuit of the field of Instructional Design, the following things proved helpful:

1. Memory – ADDIE is an acronym. Other models are known by the author's name: Bloom, Gagne, Kirkpatrick, Mager, etc.
2. Information – I started with the classics in the field – Dewey, Tyler, Bloom, etc. and earned a Ph.D. in the field. I joined ATD early in my career, since they are at the forefront of our profession. I keep up with the literature in the field. As each new idea emerges, I can compare it to a rich history of learning research and subject it to my own experimentation.
3. Contribution – I began writing about instructional design with my dissertation, which was published as a book. I have subsequently written three other books, 30 articles and numerous blogs and podcasts on instructional design. I also conduct train the trainer programs on this subject, including for ATD.
4. Future Use – I begin every new instructional design project by comparing it to similar past projects and applying the lessons learned from that experience to produce a superior result in the future. I constantly fine-tune my process based on learned experience.

## Perfect Practice Makes Perfect

- Perfect practice
- Learn from mistakes
- Develop learning habits


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We all know the value of practice, but too often our practice is imperfect, gaining us far less than it should. We should aim for "perfect practice." For football coaching legend Lombardi, that meant the practice should be just like the game, simulating it as closely as possible so that the skills would transfer perfectly on game day. The lesson for all of us is that practice should simulate the real world as much as possible. When learners engage in artificial or irrelevant practice activities, they do not gain fluency in the skill and may actually learn incorrectly.

The other keys to good practice include:

- Learn from mistakes – take the time to analyze why a mistake was made and what lessons can be drawn from it and applied to future endeavors
- Develop good learning habits – make learning a lifelong habit and never cease seeking out new knowledge. We'll never live long enough to know everything, but we can certainly try. Researchers have found that continuous learning increases longevity.

## How to Maximize Practice


Thinking again of your subject of interest, ask yourself:

- What would perfect practice look like?
- How can I develop good learning habits?
- How will I learn from my mistakes?

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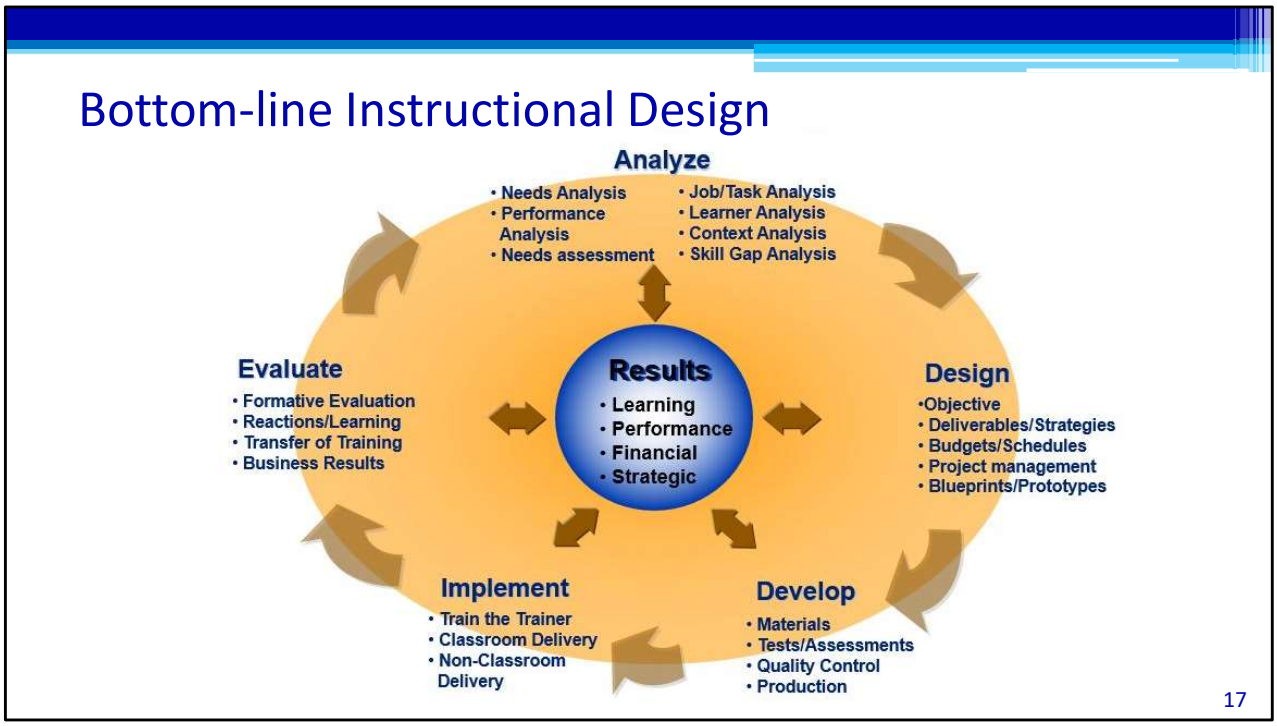
To gain maximum value from your practice, identify how you can most closely simulate the real world. Identify and develop learning habits that can make it easier for you to learn. Make sure to set aside time to debrief your practice and experiences and identify lessons learned.

In my case of learning instructional design, I had the advantage of being thrust directly into real instructional design projects early in my career. I learned a lot through trial and error. As I worked on larger projects in team settings, I began to apply project management techniques to ensure these projects stayed on track and produced the desired results. When these projects sometimes failed, I assembled the team and carefully analyzed what went wrong and how to avoid those errors in the future. I begin each new project by comparing to similar past experience to see what lessons might apply. In this way, I have increased my success rate over the years to nearly 100 percent.




I have developed by own mental model for instructional design based on the Instructional Systems Design (ISD) or ADDIE model. It is illustrated above as a cycle that starts with Analyzing and ends with Evaluating.

I use the Bottom-line ADDIE model to ensure the instructional design process interacts constantly with the results being sought (center) to keep training targeted on the things that will help an organization succeed. In this model, interactions occur in two directions. First, the design process is interactive as training proceeds from analysis to design, development, implementation and evaluation. Any one step in the process changes all other steps and may require rework of previous steps. Second, each step in the design process interacts with the results being sought. At every point in the design process, designers must ask themselves if the work they are doing in that step supports the required results, or if changes are needed to properly address the results.

In the past, trainers were primarily concerned about producing one tangible result: learning. Today, ensuring learning is still paramount; it's simply no longer sufficient. Instead, organizations expect training to produce something more valuable to the firm – performance. By this somewhat nebulous term is meant the ability to work up to the full expectations of a job and full capabilities of the worker. Performance is the application of learning in a work context, and it is performance that organizations want and pay for when they request training.

I believe we would do our clients and learners a great deal of good if we taught them our mental model for instructional design. I have used this to introduce my approach to decision makers and have used a simplified version of this to help learners understand the structure of the programs I design and the big picture theory that guides their learning. This form of metacognition has helped them along the journey to become Super Learners.

## Wrap-up: Super Learning


Maximize learning opportunities

Super learning can be taught

The world needs Super Learners

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You've seen how Super Learners maximize their learning opportunities through proper attitude, metacognition, learning strategies and perfect practice. These are things that can be taught and should be as part of the learning process. If we can teach people how to learn, they will use these strategies for the rest of their lives to make better decisions and create a world that works better for everyone. We could certainly use more of that right about now!

Any questions about the topics we have covered?

Thanks for your time today!
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