



The Application of Errorless Learning Principles

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Objectives

- Understand the fundamentals of errorless learning
- Conceptualize the theory supporting the use of errorless learning with individuals who have sustained a brain injury
- Distinguish between explicit and implicit memory. State the reasons why these differences are important when developing errorless learning practices
- Recognize the importance of meaningful, real-life tasks and activities within cognitive rehabilitation

Objectives

- Appreciate the importance of family and caregivers in the application of errorless learning principles in order to facilitate generalization and carryover of routines
- Articulate ways to immediately incorporate errorless learning principles into treatment and/or care plans of individuals with brain injuries

Fundamentals

Learning

- Acquisition of knowledge and skills through study, practice, or experience

Memory

- Encoding - taking in and processing the knowledge or skills
- Storage
- Retrieval - Expression of what you have acquired

Neuroplasticity

- Changes resulting from practice and experience
- Creation of new neural pathways and connections



Types of Memory

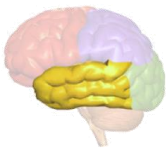
Explicit

- Declarative
- Conscious and associative
- Facts, words, numbers, experiences
- Recalling *that...* or *what...*

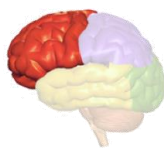


Explicit Memory

Temporal lobe



Frontal lobe



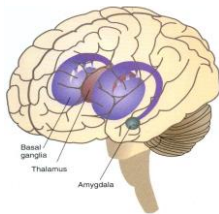
Types of Memory

Implicit

- Procedural
- Skills, procedures, habits
- Recalling *how to...*
- Tie your shoes, swing a golf club



Implicit Memory



Learning and Memory

Study & explicit memory – frontal & temporal lobes
facts and experiences - attention and association

Repetition

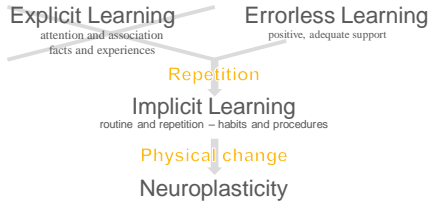
Practice & implicit memory – basal ganglia
routine and repetition – habits and procedures

Physical change

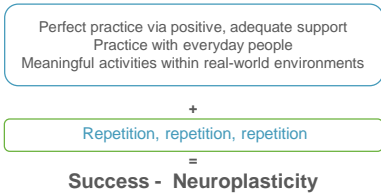
Neuroplasticity



Learning and Memory - After an Injury



Errorless Learning



Perfect Practice

- Avoid or reduce errors
 - Success each time
 - Reinforce correct responses.
 - Avoid punishment or consequences
- Adequate support with gradual and systematic fading
Collaborative
Consistent



Positive and Adequate Support

Don't ask, just tell

Avoid non-verifiable, declarative questions

- Verbal cues and scripts
- Gestural cues
- Pre-teaching
- Modeling

Provide training for all staff

Positive and Adequate Support

External Supports

- Environmental modifications
- Checklists
- Memory books
- Androids, iPhones, and iPads





Practice with Everyday People

Therapy team, caregivers, and family

- Collaboration
- Communication
- Consistency

Teachable moments

- Taking every opportunity to train and educate
- Recognizing those moments

Meaningful Activities

- Functional
- Personalized
- Paramount
 - Safety
 - Supervision
 - Assistance



Real-World Environments

- Provide natural, meaningful context
- Teach the skills where they are needed
- Simulate demands



Case Studies



Errorless Learning

Perfect practice via positive, adequate support
Practice with everyday people
Meaningful activities within real-world environments

+

Repetition, repetition, repetition

=

Success - Neuroplasticity

Success

- Meeting goals
- Regaining function
- Acquiring new abilities
- Quality of life indicators
- Reduced reliance on caregivers
- Fewer negative behaviors



References

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