CHAPTER 17

WHOLE AND PART PRACTICE
THIS CHAPTER’S CONCEPT

Base decisions about practicing skills as wholes or in parts on the complexity and organization characteristics of the skills.
INTRODUCTION

- Which is better, practice the skill in parts or in its entirety?
- Practical application in teaching, and rehabilitation.
  - Should one teach and practice the tennis serve in parts? Or entirety?
  - Should the patient be taught how to get out of bed in parts? Or entirety?
SKILL COMPLEXITY AND ORGANIZATION

- The organization and complexity characteristics of skill provides the basis of using whole or part practice (Naylor & Briggs)
  - Skill Complexity is how many part or components are in the task
    - Level of complexity relates to level of processing demands on the human performer
  - Skill Organization refers to how spatially and temporally the components are interrelated
    - High organization = high inter-dependency
      - E.g. Jump shot, kicking, skating.
    - Low organization = low inter-dependency
      - E.g. Dance routine, gymnastic routine
DECISION TO USE WHOLE OR PART PRACTICE

- Skills low in complexity and high in organization
  - One should practice the skill as a whole

- Skills high in complexity and low in organization
  - One should practice the skill using some type of practice part strategy
Orthopedic Surgical Task Study

- Attaching a metal plate to a fractured bone is a serial skill performed in specific order.

- Which is better:
  - Have the surgeons watch the entire procedure then perform all the parts in a practice condition
  - Have the surgeons practice each part 3 times in a 12 min. session before practicing the next part (blocked)
  - Have the surgeon practice each part randomly.

- Results
  - Whole practice was better
Steps to determine if one uses whole or part method?

1. Analysis of skill
   - How many part are their?
   - Are these part dependent upon each other or independent?

2. Evaluate the skill on a continuum of skill complexity from high to low and organization from high to low
   - Most motor skills and sport skills are closer to complex
   - Group parts into natural part to evaluate organization.
VARIOUS PART TASK TRAINING APPROACHES

- Fractionalization
- Segmentation
- Simplification
FRACTIONALIZATION APPROACH

- Related to bimanual skills where one practices each arm separately before performing with the arms together (asymmetric)
  - Most skills require simultaneously move their arms and legs to achieve a goal.
  - Remember that limbs like to work together (heavily linked)
  - When ever you have a skill where the each arm (leg) does something different from the other arm(leg) one needs to consider fractionalization part approach.
  - For skills where one hand has a more difficult movement pattern over the other (asymmetrical):
    - Practice should begin with the limb that has the more difficult task
SEGMENTATION APPROACH

- Involves separating the skill into parts and then practicing one part.
  - Problem is putting the practice parts back together to perform the skill
- Progressive Part is strategy used to prevent this problem
  - Practice part A then AB then ABC then entire skill
SIMPLIFICATION APPROACH

- Involves reducing difficulty of the whole skill or specific parts of a skill
  - Reduce the difficulty of the objects
  - Reduce the attention demands of the skill without changing the action goal
  - Provide auditory accompaniment for skills having a rhythmical pattern
  - Reducing speed
  - Sequencing of task progression
  - Simulators and virtual reality environments
  - Do not use miming as a simplification method
Attention Approach to Part Practice

- Directing the performer's attention to focus on one part of the skill (momentary intentions).
  - Allows one to practice the entire skill but establishes a part practice environment
  - Results indicate that the attention approach is effective in learning a computer game over not receiving strategic attention strategies.
PROFESSIONAL IMPLICATION

- Determine if the performer should practice the skill as a whole or in parts
  - Whole practice for skills low in complexity and high in organization
  - Part practice for skill high in complexity and low in organization
- Use the various part training approaches in the practice of the skill
- Have the student/client perform the skill then attend to one aspect of the skill that they are having difficulty with.