

## Topic: Blocked, Serial, and Interleaved Learning

Link: [https://coachreed.com/podcast/coachingcode/the\\_c0ach1ng\\_c0de-ep13-blocked-serial-random-oh/](https://coachreed.com/podcast/coachingcode/the_c0ach1ng_c0de-ep13-blocked-serial-random-oh/)

- **Blocked learning:** Blocked practice is when a learner performs a single skill over and over, with repetition being the key. Variance in training is minimized or nonexistent. The learner then moves on to practice another discrete skill in the same way.
  - Example: Shooting free throws
  - Low levels of cognitive interference
  - Athlete is not challenged to think and process thoughts--More robotic
  - Can lead to better performance of individual tasks in training sessions, but not translating to games
  - Athletes may begin to prefer predictable, less challenging activities in practice
- **Serial learning:** A group of discrete movements (blocked skills) that are put together to achieve an objective.
  - Example: A drill that has the player catch, dribble, and shoot the basketball as a series of events.
- **Interleaved (random) learning:** By contrast, in random practice, motor learners work on a number of different skills in combination with each other, randomly working trials and patterns of one and then the next and the next, with each trial interleaved on the previous one.
  - Example: A worksheet with addition, subtraction, multiplication, and division problems randomly arranged
  - Marked by high levels of cognitive interference
  - The learner is forced to be on his/her toes
  - Challenges the learner's cognitive and motor systems to deal with the interference of each task on the next
  - Learner must adapt, rethink, and solve the problem of choosing and executing appropriate motor patterns, upon demand
  - Leads to greater skill retention
  - Skills developed through this method translate better to actual games
- Author: Doug Lemov
  - [https://www.thriftbooks.com/w/teach-like-a-champion-49-techniques-that-put-students-on-the-path-to-college-k-12\\_doug-lemov/249143/?mkwid=syz1q2ArH%7cdc&pcrid=70112878392&pkw=&pmt=&plc=&gclid=Cj0KCQjw45\\_bBRD\\_ARIsAJ6wUXRo-pThqODFcbcSnnGD80fyHrljotFXVfwsAE-FCo11EFKdGr2EnecaArnPEALw\\_wcB#isbn=0470550473&idq=3216383](https://www.thriftbooks.com/w/teach-like-a-champion-49-techniques-that-put-students-on-the-path-to-college-k-12_doug-lemov/249143/?mkwid=syz1q2ArH%7cdc&pcrid=70112878392&pkw=&pmt=&plc=&gclid=Cj0KCQjw45_bBRD_ARIsAJ6wUXRo-pThqODFcbcSnnGD80fyHrljotFXVfwsAE-FCo11EFKdGr2EnecaArnPEALw_wcB#isbn=0470550473&idq=3216383)
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- **Conclusions:**
  - Use blocked learning to teach basic skills for the first time that are absolutely necessary in order to move on and accomplish more advanced concepts.
  - Otherwise, use interleaved learning. It might not yield immediate results, but over time yields better results. Forgetting is part of the learning process. A learner may forget something that he/she learns, but upon forgetting, reviewing, and having to re-learn something, it strengthens the learners skill (forgetting hypothesis).

- Instead of using a 90-minute training session to learn one skill/concept and not regularly revisiting this topic, break the training session into four 22.5 minute chunks devoted to different topics and repeat this session format several times.
- **How to correctly apply blocked and interleaved training to sessions:**
  - Add an extra defender. (The defender becomes unpredictable, which forces the athlete to think and adjust constantly.)
  - Use all types of training.
  - Be very intentional
- Professionals to follow:
  - Doug Lemov
  - Nick Levetz
  - Stu Armstrong
  - Nick Winkelman
  - Russel Earnshaw
  - David Dale
  - John Kesler
  - Dan Abrams

**My idea:** Learning to play out of the back through interleaved learning.

- First session:
  - (30) minute technical warm-up (blocked)
  - (60) minutes of small-sided games with varying types of pressure:
    - 30-minutes: Play out against somewhat low block (a defense obeying the build-out line) and try to pull the opposition's first line out of position
    - 30 minutes: Play out against an opposition whose first line presses high, but is disconnected from the second line
- Second session
  - (30)-minute technical warm-up
  - (60) minutes of small-sided games with varying types of pressure
    - 20-minutes: Play out against low block
    - 20-minutes: Play out against disconnected first line
    - 20-minutes: Play out against disorganized high press (Where is the free man?)
- Third session
  - (30)-minute technical warm-up: Sending and receiving aerial balls
  - (60)-minutes of small-sided games with varying types of pressure
    - 30-minutes: Play out against disconnected third line
    - 30-minutes: Play out against organized high press
- Fourth session
  - (30)-minute technical warm-up
  - (60)-minutes of small-sided games with varying types of pressure
    - 20-minutes: Play out against disorganized high press
    - 20-minutes: Play out against disconnected third line
    - 20-minutes: Play out against organized high press

**Note about above:** You don't want to introduce a ton of new concepts all at once, but don't be afraid to introduce new things in pairs and without much time in between initial introductions. This way, you have more time throughout the season to practice the topics so that the learners can learn, forget, review, relearn, and overall, strengthen their skills as best as possible.