SHOW NOTES

The Look-Away Effect

The Look-Away Effect

Episode 6 | Season 3 | *Coaching Research To Results Podcast*

EPISODE AT A GLANCE

Paper	Optimizing Performance Through Intrinsic Motivation and Attention for Learning: The OPTIMAL Theory of Motor Learning
Author	Wulf, G., & Lewthwaite, R.
Published	2016
Episode Length	Under 13 minutes
Tags	attentional focus, motor learning, OPTIMAL theory, external focus, coaching instructions, skill acquisition

THE THREE STICKY IDEAS

These are the labels to remember from this episode. They are designed to stick with you long after the research fades.

The Look-Away Effect

Directing an athlete's attention to the outcome or effect of their movement, such as the target or implement, produces faster, more accurate, and more durable learning than directing attention to their own body or mechanics. This holds across task types, skill levels, ages, and populations, with consistently large effect sizes. The proposed mechanism is the constrained action hypothesis: internal focus forces conscious control of a motor system that learns better when left to run automatically.

The Dopamine Dividend

When athletes expect to succeed, they learn better, and coaches can create that expectation through how they frame feedback. In studies, participants told they had performed above average showed significantly better retention and transfer than those given neutral feedback, even when the framing was not strictly accurate. The proposed mechanism is dopamine: positive expectancy activates reward circuitry that supports the consolidation of new motor learning.

The Micro-Autonomy Effect

Even trivial, incidental choices, such as which colour ball to use or which order to complete drills, measurably improve motor learning compared to no choice at all. The effect appears to work through the same dopamine pathway as expectancy, since self-determination, however small, activates reward circuitry that supports learning. For coaches, this suggests that leaving room for small moments of choice within a session can matter more than the size of the choice itself.

TWO ACTIONS FOR TOMORROW

Take one or more of these actions into your next coaching session.

To take the key performance indicators (kpis) you already planned to work on and run them through an attentional focus audit before your next session

Run your planned session cues through an attentional focus audit, checking whether each instruction points to a body part or to the outcome of the movement, and rewrite three of them with an external focus. This targets the one- or two-word shifts research shows can meaningfully improve how quickly and durably athletes learn a skill.

To find one moment in each session this week to give feedback that builds expectancy rather than corrects error

Before giving a correction in each session, find one moment to offer feedback that builds the athlete's sense of capability rather than jumping straight to what went wrong. This primes the athlete's brain to expect success, which the research links to better retention and transfer of learning.

RESEARCH REFERENCE

Primary Source: Wulf, G., & Lewthwaite, R. (2016). Optimizing performance through intrinsic motivation and attention for learning: The OPTIMAL theory of motor learning. Psychonomic Bulletin & Review, 23(5), 1382-1414.

Counterpoint Sources: Guadagnoli, M. A., and Lee, T. D. (2004). Challenge point: A framework Behavior, 36(2), 212-224. havice tual: in the effects of various practice conditions in motor learning. Journal of Motor Behavior, 36(2), 212-224.

LINKS AND RESOURCES

- Full episode library: thecoachdeveloper.com
- Show notes: thecoachdeveloper.com/coaching-research-to-results-podcast-notes
- Subscribe and leave a review on Apple Podcasts, Spotify, or your preferred platform

Share this episode with one coach this week, since that's how research actually travels.

SHOW NOTES

FULL EPISODE TRANSCRIPT

The following is the complete script for this episode of *Coaching Research To Results.*

Cold Open

Think about the last time you coached a skill. Think about the exact words you used. Chances are, you said something like: 'Keep your elbow up.' 'Watch your hand.' 'Bend through your knees.' It sounds precise. It sounds like coaching. And you've probably said it a hundred times.

But here's what thirty years of motor learning research has to say about that: those instructions, the ones about the body, the joints, the mechanics...they're reliably slowing your athletes down. And it all comes down to where you're pointing their attention.

Today we're looking at a paper that is going to change the way you think about every instruction you give. And the best part is that it's not complicated. In fact, the fix is sometimes just one word.

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Intro and Show ID

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The Paper

The paper is called “Optimizing Performance Through Intrinsic Motivation and Attention for Learning: The OPTIMAL Theory of Motor Learning.” It was published in the Psychonomic Bulletin and Review in 2016. The lead author is Gabriele Wulf, from the University of Nevada, Las Vegas, one of the most cited researchers in motor learning globally. Her co-author is Rebecca Lewthwaite, from USC.

What they did was synthesise three decades of experimental motor learning research into a unified theory. They weren't just summarising findings, they were asking why these findings cluster together, and what they share at a deeper level. The answer they arrived at is called OPTIMAL, an acronym that goes like this: Optimizing Performance Through Intrinsic Motivation and Attention for Learning. The theory centres on three conditions that consistently accelerate motor skill acquisition. Today we're going to work through all three, with the biggest one first.

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Big Idea #1

The big idea could be called "The Look-Away Effect"

Here's the finding: when you direct a learner's attention to the effect of their movement, for example, the target, the implement, or the outcome, they learn faster, more accurately, and more durably than when you direct their attention to their own body or mechanics.

External focus of attention consistently outperforms internal focus across every task type, skill level, age group, and population that researchers have studied. And the effect sizes are not small. One or two words in an instruction separates these conditions.

The reason, according to the researchers, is something called the constrained action hypothesis. When you focus attention on the body, the conscious brain takes the wheel. It starts micro-managing a system - the motor system itself - that is actually far more capable when it is left to

run automatically. Internal focus freezes degrees of freedom. It produces stiff, consciously controlled, sub-optimal movement. External focus lets the automatic system do its job.

You're not coaching a body. You're coaching an outcome. The moment you describe the body, you've already asked your athlete to think about the wrong thing.

If you want a list of different coaching cues that separate internal and external cues, check the show notes for where to download.

Think about the instructions you gave last session. How many of them were about body parts? 'Bend your knees' becomes 'push the ground away.' 'Keep your elbow up' becomes 'reach long toward the target.' Same correction...completely different attentional destination. Which one do you think produces better learning?

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Ideas #2 and #3

Call this one "The Dopamine Dividend"

This one is about the feedback you give; not the content of it, but the framing. The research shows that when athletes expect to succeed, they learn better. And coaches can create that expectation through the way they deliver feedback.

In experiments, when participants were told they performed above average (even when that wasn't strictly true) their retention and transfer performance improved significantly compared to neutral feedback groups. The proposed mechanism is dopamine: positive expectancy activates reward circuitry in the brain, and dopamine is not just a feel-good chemical. It's the brain's signal that something is worth consolidating.

This is not about empty praise. It's about framing feedback in ways that build the learner's sense of capability. 'You held that balance for longer than most people do on their first attempt' is a different neurological event than 'that was okay, but your ankle was wobbling.' Both might be accurate. Only one of them is setting the brain up happily to learn.

Ask yourself: is your feedback language building expectancy for success, or defaulting to error correction? Both have a role in sport, but the ratio of the language matters.

The sticky label here is "The Micro-Autonomy Effect"

This finding is one of the most surprising in the literature: even trivial, incidental choices given to learners significantly improve motor learning. In studies, participants who were allowed to choose which colour ball to use, or which order to practice a set of tasks, showed better retention than those who had no choice at all. The choice was irrelevant to the task. It didn't change the difficulty or the structure. But it changed the brain's engagement with the task.

The reason appears to be the same dopamine mechanism. When we choose, even in a small way, we are self-determining. Self-determination activates reward circuitry. And as we've just established, reward circuitry supports learning.

For coaches, this is a question about how much of a session is prescribed versus how much is left open. A fully prescriptive session, or one that says here is the drill, here is the order, here is how many reps - removes the learner's agency entirely. That might sometimes be appropriate. But the research suggests that if you can find even three small moments in a session to say, 'you choose,' you're offering the learner's brain a reason to invest.

The tiniest choice can be the biggest lever. Your athletes don't need to choose the session plan, they just need to feel like they're in it with you.

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The Counterpoint

Now, further examination reveals tensions within the existing evidence.

A paper worth knowing here is Guadagnoli and Lee's 2004 Challenge Point Framework, published in the Journal of Motor Behavior. Their argument is that difficulty is not the enemy of learning, in fact, learning requires an optimal level of challenge. Too easy, and there is no adaptation signal for the brain. Too hard, and the learner cannot extract useful information from performance.

The tension with OPTIMAL is this: if we protect learners from error and keep expectancies high, do we inadvertently make things too easy? The researchers themselves address this. Their answer is that challenge, in the context of attainable success, is potentiating. What impairs learning is failure without expectancy of recovery or the belief that improvement is not possible. A hard task where the learner still believes they will get it is an OPTIMAL condition. A moderately hard task where the learner has been told, or has concluded, that they are not capable? That is the problem.

So external focus, positive expectancy, and autonomy are not about removing challenge. They are about removing the self-consciousness and self-doubt that undermine performance when the challenge gets real.

Guadagnoli, M. A., and Lee, T. D. (2004). Challenge point: A framework for conceptualizing the effects of various practice conditions in motor learning. Journal of Motor Behavior, 36(2), 212-224.

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The Anecdote

This is a cool example of the internal vs external focus of attention cue example as told to me by a swimming coach. She had always taught the catch in freestyle by telling young swimmers, 'pull with your hand, fingers together.' Then, after learning about different ideas around focus of attention, she changed the cue. As an experiment, she changed it to 'pull the water behind you, as if you're moving it out of the way.' She didn't explain why and then she just sat back and watched what happened.

The swimmers' timing improved visibly within that session. Before, she assumed she was being precise with 'hand and fingers.' And as a practiced swimmer herself, the cue made a lot of sense since it was exactly what she felt when she moved through the water. But what she found was that the external cue reveals that precision that the athletes needed. With that small change, she realized that she needed to do an overhaul on her coaching cues so that she could focus on the external control cues more heavily during training.

Two Actions

Action one is to take the key performance indicators (KPIs) you already planned to work on and run them through an attentional focus audit before your next session. Write them down. For

each one, ask yourself: is this instruction pointing the athlete's attention toward their body, or toward the effect of the movement? 'Bend your knees' points to the body. 'Push the ground away' points to the outcome. 'Keep your arm straight' points to the body. 'Send your arm toward the target' points to the outcome.

You are not throwing away everything you know about technique. The technical knowledge is still there; it's just being translated into a different delivery language. The benchmark is not whether the instruction is anatomically correct. It is whether the instruction is directing attention to a goal or to a body part.

Start with just three instructions. Rewrite them with an external focus. Use them in the session and notice what changes. You just need to observe and see how it works for your athletes. You're doing what every good coach does - trying something, watching carefully, and asking yourself "what happened?" and how can I build on it?

Action two is to find one moment in each session this week to give feedback that builds expectancy rather than corrects error. This isn't to say you'll abandon corrective feedback; instead you'll make sure the ratio is not entirely corrective. But, before you give the correction, say something that locates the athlete in a positive frame. "That balance on the landing is already showing something. Your timing on the left side is ahead of where most people are at this stage. Let's look at what happens when you..."

The research suggests this is not motivational window-dressing. It is a neurological primer. You are signalling to the athlete's brain that success is expected, that improvement is the trajectory, and that the next attempt is worth investing in. Dopamine does the rest. You don't need to understand the neuroscience to use it. You just need to notice what happens to performance and engagement when you say the thing that expects the best, rather than the thing that catalogues the worst.

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Close and Invite

To close, here are the three big ideas from today. The Look-Away Effect: external focus of attention consistently outperforms internal focus, and the fix is often a single word in an instruction. The Dopamine Dividend: feedback that builds expectancy is not softer coaching but it IS smarter coaching, because expectancy is a neurological condition for learning. And the Micro-Autonomy Effect: even the tiniest choice you give a learner activates the part of the brain that drives learning forward.

Here's the thing to carry with you: the OPTIMAL conditions are not about making coaching easier or more positive in a superficial sense. They are about directing the learner's attention and motivation in the direction that the nervous system can actually work with. Body-focused, error-corrective, fully prescriptive instruction is not wrong...it's just expensive, neurologically speaking. Every time you use it, you're paying a cost in learning efficiency.

The research under all three of these ideas points to the same mechanism: where is the learner's attention pointing? Outward, toward the goal? Or inward, toward the self? That question is the thread running through every coaching session you deliver. It is worth pulling on it.

Next time, we'll be looking at another paper from the skill acquisition literature -- and I think you'll find it pushes back on some of what we've discussed today in an interesting way. Stay tuned.

SHOW NOTES

I'm Beth Barz, The Coach Developer. You'll find show notes and the full library of episodes at www.thecoachdeveloper.com. If any idea from today lands for you, like, subscribe, and share it with another coach this week. That's how research actually travels. See you next time!