

NORGES SVØMMEFORBUND

Refleksjonsoppgave for svømmetrenerne

Treningsintensitet og langsiktig utvikling

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Før du leser

Underveis i tekstene som følger kan det være nyttig å ha noen spørsmål om eget opplegg i bakhodet:

- Hvor i eget opplegg jager vi kanskje prestasjon litt for tidlig?
- Hvor ofte blir det som skulle være rolig egentlig ganske hardt?
- Og hva gjør vi i dag som faktisk gjør dem bedre på lang sikt?

Innhold: 1. Are We Training Young Swimmers Too Intensely? (David Hemmings) 2. Training for Capacity vs. Utilization (Bob Bowman) 3. Refleksjonsoppgaver: Å designe trening for langsiktig utvikling

1. Are We Training Young Swimmers Too Intensely?

Adapted and combined from David Hemmings' two Substack articles, "Are We Training Young Swimmers Too Intensely?" (Part 1) and "Are We Training Young Swimmers Too Intensely [Part 2]," on Beyond The Blocks. The ideas and examples below are his; the text has been rewritten and merged into one document.

The starting point

Hemmings answers his own headline question with a direct yes: in many cases, coaches train young swimmers too intensely — and he includes himself in that critique. Early in his career he wanted his swimmers to win fast and climb the ladder quickly. The trap, he points out, is that young swimmers can absorb a surprising amount of work in the short term, which makes it easy to push intensity too far before the long-term cost becomes visible.

How intensity creeps in

Hemmings identifies several mechanisms that push training programs harder than intended, often without the coach noticing:

Chasing pace too often. When "quality" becomes the default setting — every set raced, every rep timed, every day judged on how well a swimmer hangs on through a tough set — the space for genuinely low-stress work quietly disappears.

Long repeats swum hard. Longer repeats at low-to-moderate intensity are valuable for aerobic development, but the same distances at strong-to-hard intensity produce a completely different physiological response. Heart rate climbs sharply as hard efforts stretch from 100m to 200, 400, 800m; what was meant as endurance work turns into high-stress work.

Stacking too many hard sessions in one week. It's rarely a single hard set that's the problem — it's hard-plus-hard-plus-hard with no genuinely easy days for adaptation and recovery. The result is swimmers trying to survive the program rather than develop through it: technique deteriorates, illness becomes more frequent, and the ones who do endure become what Hemmings calls "training champions" — athletes who use everything their engine has with little room left to grow, and who often plateau early.

Too much volume for too long. Even aerobic work becomes stressful when it's high, unbroken, and never truly easy. Hemmings shares a concrete example: he once asked Abbie Wood and Freya Colbert to pick up the pace on an aerobic 800 set because he felt their effort was too low — midway through, their blood lactate measured 7–8 mmol. What he read as a lack of effort was in fact a physiological sign the set was already too hard. This happened during a period of roughly 60km a week, where "easy" sessions kept getting pushed toward the edge because he was coaching on feel rather than data.

Repeated early mornings. Even when the session itself is easy, repeated 5am starts add up to sleep debt, emotional fatigue, and lower engagement — and that, too, is a form of intensity,

even when the water work isn't. Hemmings is clear he isn't arguing early morning training should never happen, only that week after week of it has a shelf life.

Chasing early success. A focus on rankings and selection right now shifts attention away from patient, long-term development. Hemmings uses his own example from 2010: an athlete on track for a European Junior title, which she won — after which he immediately set his sights on the next Olympics and asked for more. What followed was a long, unstable plateau. In hindsight, he thinks he should have managed her transition to a senior environment more deliberately and let progress unfold more slowly.

The trap of copying elite training models

It's easy to see why coaches fall into this trap: the internet and coaching literature are full of fascinating sessions from the sport's legends. Hemmings stresses that studying this material has real value — he'd be concerned about a coach who *wasn't* reading and drawing inspiration from it. He still looks back with respect at the training logs of swimmers like Tom Dolan, Kieran Perkins, Grant Hackett, Alexander Popov, and Susie O'Neill.

The problem starts when those sessions are copied without careful reinterpretation for a younger, less developed athlete. A small number will manage to complete or survive the work; most won't. An athlete's physiological profile can be suppressed by too much volume, too much intensity, too much density, and too little recovery — often without it being obvious until the damage is done. His point isn't that elite training is wrong, but that developing a young athlete and copying a senior program are two different jobs.

The “scientific” — considered — coach

Most coaches don't have access to regular physiological testing, so progression is often guided by instinct and experience. Hemmings' own understanding of how the aerobic and anaerobic systems interact has grown considerably: performance isn't built by maximizing one system at the other's expense, but by developing both in the right balance.

Lactate testing, he says, was what really taught him what intensity actually means. For years he assumed swimmers working aerobically and “looking easy” simply weren't trying hard enough. The testing told a different story: lactate values of 1–2 mmol represent excellent aerobic development, particularly paired with good technique. He often uses Bob Treffene's lactate “transporter” model — low-intensity work builds a strong motorway of heart, lungs and capillaries, which later carries lactate efficiently to the muscles once intensity rises.

The point is how little it takes to shift the physiological intent of a session. A single cue to “pick it up a bit” can push an easy aerobic session into unnecessary anaerobic stress, even with pace barely changing — shortened rest or slightly longer repeats alone can drive lactate sharply higher. A steady 400m might sit around 2 mmol; 4×400m at the same pace on only 15 seconds rest can turn into an entirely different session physiologically.

His practical advice for coaches without access to testing: plan genuinely light aerobic sessions, and be disciplined with language. Avoid chasing pace when the intent is low stress — prioritize technical execution and reward quality over speed.

Set design is an underrated skill

The relationship between repeat length, rest, and total duration largely determines the real intensity of a session. Young swimmers are especially sensitive here, both physiologically and psychologically. Short rest, long-and-strong repeats, and fast target times can build a kind of toughness — often at the cost of aerobic development, technique, and recovery. Programs that lean too heavily on “hard work” produce swimmers who can grind through training but struggle to perform when it counts.

Individualization — where good coaching lives

A well-designed program still includes demanding sessions — this isn't an argument against

challenge. It's an argument about balance: how often demanding work is prescribed, how long it's sustained, and how intense each exposure really is. Young athletes mature at very different rates, and the art of coaching lies in adapting the program to the individual — asking some to hold back slightly, reducing rep counts, adjusting rest, giving a swimmer brief exposure to an older training group before pulling back, or actively protecting the most motivated athletes from pushing themselves too hard too soon.

An unforgettable week in Japan

In 2015, shortly after moving from Hillingdon to Loughborough, Hemmings took a group of British middle-distance youth swimmers to a Japanese national junior camp. It remains the hardest training week he has ever witnessed — one intense block after another, with almost no space between them. The Japanese swimmers were extremely disciplined but visibly exhausted and remarkably good at masking it; the British girls also worked incredibly hard, but were spent by day seven.

The legendary coach Nori, who coached Kosuke Kitajima, came over to Hemmings during the camp and told him to look after and protect his girls — the sessions were extremely hard, maybe too hard. Hemmings has since wondered whether Japanese swimming's cultural emphasis on endurance, repetition, and stoicism has actually limited success at the very highest level: Japanese swimmers often look strong early in the domestic season, but often struggle to hold that form through to summer. He notes that a newer generation of Japanese swimmers appears to be moving toward more individualization.

The exceptions that challenge the picture

Hemmings is honest that there are exceptions that challenge the whole perspective — Chinese swimmer Zidi Yu and her 2:07.4 200 IM is one he followed with disbelief himself. He assumes she trains within an intense program, but stresses the question of long-term durability remains open. What he holds onto: it's physiologically impossible to sustain world-class performance on constant high-intensity work indefinitely — the body can't keep adapting under that level of stress forever.

A conversation with his younger self

The piece is framed as a dialogue between two versions of Hemmings: the young coach who believed toughness was the main route to success, and the more experienced coach, 25 years on, who has coached across the full pathway and made enough mistakes to gain some perspective. His conclusion is that a coach's job isn't to rush talented, motivated young athletes, but to manage them — helping them hold back, find balance, and prepare for a longer, more sustainable career. In his experience, athletes guided this way tend to perform better when it matters and stay in the sport longer.

He's clear this isn't an argument against high standards, but a reflection on how physically intense we ask young athletes to train — and a hope that coaches reading the piece feel the intent behind it: young swimmers deserve to be coached with care, thought, and proper consideration.

Sources: David Hemmings, "Are We Training Young Swimmers Too Intensely?" (Part 1, Feb 8, 2026) and "Are We Training Young Swimmers Too Intensely [Part 2]" (Feb 14, 2026), Beyond The Blocks (Substack).

2. Training for Capacity vs. Utilization

Adapted from a talk given by Bob Bowman at an ASCA clinic. The framework and examples below are his; the text has been reorganized and rewritten into article form from a spoken transcript.

Two questions every coach should be able to answer

Bowman opens with a deceptively simple challenge: do you actually know what's happening in your own training program? Not in the abstract — can you say, set by set, what a given piece of work was meant to accomplish, and what effect it had the next day?

His starting point is that most coaches can't answer that with any precision, because they don't record what they do. His rule is blunt: if you don't measure it, you can't manage it. That means writing practices down — not necessarily planning every detail in advance, but logging what actually happened, because memory alone inflates and distorts over time, “like those fish stories.” It also means deciding, deliberately, what you're going to measure — and making sure your swimmers know their own times rather than waiting to be told. At his own club, North Baltimore Aquatic Club, every swimmer, down to the ten-year-olds, is expected to get their own splits. It's a small habit that does a lot of work: it gives every swimmer a personal baseline to set goals against, which is exactly how a young Michael Phelps first learned to think about incremental improvement — “I think it's about 52” today, “maybe 50.5 by the end of the season” tomorrow.

Bowman credits the second building block — his club's identity — to something equally simple: North Baltimore has run for forty years on one idea, the disciplined pursuit of excellence, measured not against the state or even the country, but against the best in the world. Discipline, in his framing, is mostly self-discipline: having a plan, believing in it, and living it.

Where the framework comes from

The core of the talk — capacity versus utilization — isn't Bowman's own invention. He traces it to Nort Thornton's early writing on “base training” and “sharpening,” and to Jan Olbrecht's dense book *The Science of Winning*, which uses the terms aerobic/anaerobic endurance and aerobic/anaerobic power. Bowman relabels these as capacity and utilization because, in his view, the terms are clearer and carry less baggage.

Capacity training is about raising an athlete's ceiling — their potential, not their performance right now. It's long-term, general, and methodical: you're building infrastructure (mitochondrial density, delivery systems, general fitness) rather than rehearsing a specific skill. Because it's broad rather than targeted, it tends to be less volatile, and it takes time to pay off — which is fine, because in age-group and developmental coaching, time is usually on your side. Crucially, capacity training deliberately sacrifices short-term results for a longer payoff. Bowman frames it as a real question every coach has to answer honestly: is it more important that a swimmer goes a 1:00 in the 100 breast this season, or a 55 two seasons from now — knowing that the same choices that produce the 1:02 now might be exactly what produces the 55 later?

Utilization training is the opposite pole: short-term, highly specific, and about extracting the best possible performance from whatever the athlete has right now. It operates at the edge of an athlete's current capability — sometimes past it — which makes it dynamic and genuinely risky. Push it well and an athlete breaks through; push it carelessly and they get buried. Bowman cites Paul Bergen's old comparison: training only within an athlete's capabilities, or only beyond them, is like pushing a refrigerator from one side — you need both, working against each other, or nothing moves.

The cup

Bowman's central image for all of this is a cup, representing an athlete's potential. Capacity training makes the cup bigger. Utilization training fills it. The goal of a well-sequenced career is to build the biggest possible cup before spending years filling it.

He illustrates the difference with Phelps himself: heading into the Beijing Olympics, a cup the size of the Atlantic, filled to the brim — the product of twelve years of capacity work being cashed in. By contrast, heading into the 2010 Pan Pacs, after a lighter, less disciplined stretch, he describes the same athlete as “a thimble half full.” The size of the cup, Bowman points out, matters more than how full it is — an athlete used to a two-gallon capacity doesn't get far chasing more sprint work out of a thimble.

He extends the metaphor across career stages and coaching handoffs. Swimmers who build a large cup under one program and then move into a utilization-heavy environment — his examples include athletes moving from age-group or college programs known for base work into Dave Salo's more sprint- and speed-focused system at USC — tend to perform well precisely because someone else already built the capacity Salo's program is filling. The same logic, he argues, applies to a coach's own development: early in a career, you build your capacity as a coach, absorbing as much knowledge and as many tools as you can; later, you draw on that toolbox and apply it with more precision.

It's a spectrum, not a category

Bowman is explicit that no program is purely one or the other — “distance-based” and “sprint-based” are both misleading labels, because every program does some version of both technique work and speed work; they just sit at different points on the spectrum, and a single program will shift along it across a season. He places various well-known college and club programs loosely along this spectrum (naming, among others, Dick Schulberg, Mark Schubert, Dave Durden, and himself), less as a ranking than as an illustration that success has been built at very different points on the same line.

What this looks like in a real training week

To make the framework concrete, Bowman walks through the structure he used at Michigan. Monday and Friday were power/overload days. Monday afternoon threshold sets (“the colors”) sat firmly on the capacity end — long work, moderate rest, aimed at building an aerobic base. Wednesday's “quality” work — broken swims, rested 100s on long rest intervals — sat closer to utilization, training systems the athletes would draw on directly in-season. He notes that the same tool can sit at either end depending on how it's dosed: 10 rounds of 45-second vertical kicking with resistance builds capacity; 10 rounds of 10 seconds does something else entirely. Rest interval is the main lever — tighten the rest and you drift toward capacity; loosen it and open up speed, and you drift toward utilization.

One recurring set — a 2-4-6-8-then-200 ladder he associates with Janet Evans-style sets — is built explicitly to move an athlete from capacity into utilization inside a single piece of work: the early, longer repeats at moderate pace build a base; by the final 200, the effort is meant to be close to race-effort, IM-specific and neuromuscular. He recalls that when Phelps was 11 to 13 years old, the final 200 IM of this set was reliably his best time of the meet — a genuinely specific outcome riding on top of an otherwise general 4,000-yard set.

He also describes “hell week” — a concept borrowed from his time with Paul Bergen — used roughly three weeks out from a target meet: dropping dry land entirely, going all-in on volume and effort in the water for a week, then returning to normal training with slightly higher quality, followed by a rest week. His reasoning is that a program's usual training volume only means something relative to itself — his 7,000 yards means something different than another coach's 7,000 — but bumping that baseline up sharply for a week and then returning to it produces, in his experience, “a better 7,000” than if the spike had never happened. He's equally direct that this only works occasionally and deliberately, not as a steady diet.

The part that changes with age

Bowman's closing point is the one he says matters most for age-group coaches specifically: the balance between capacity and utilization shifts across a career. Younger athletes need proportionally more capacity work; older, more developed athletes need proportionally more utilization. Run a heavily utilization-based program on 10-and-unders or 11-12s, and — regardless of how well it works for elite post-grad groups — they'll plateau early. Run pure capacity work indefinitely and they'll likely get bored, even while still improving physically. The task is to find the right blend for where the athlete actually is, not to import wholesale whatever an admired program does for a very different population.

He closes with two illustrations of the same idea. One is a long, self-deprecating story about trying to apply swimming-style strength and speed training to racehorses — building custom

equipment, inventing new gate-training routines — that mostly failed, while traditional methods, refined over decades by people racing for real stakes, worked better. The other is a comparison to music: if Beethoven opened the score to Stravinsky's *Rite of Spring*, he'd recognize every note and instrument even if the result baffled him, because Stravinsky's innovation was built on top of, not instead of, the fundamentals. Bowman's advice to young coaches is the same in both cases — learn what's already proven to work, become classically trained, and only then go build something new. Skip that step, and you'll eventually rediscover the same fundamentals anyway, just after a much longer detour.

3. Refleksjonsoppgaver: Å designe trening for langsiktig utvikling

Basert på tekstene over. Oppgavene er bygget for å trene evnen til å konstruere treningsopplegg som er best for utøverens langsiktige utvikling — ikke bare for prestasjon her og nå.

Del 1 — Grunnlagsforståelse (individuell refleksjon)

Disse spørsmålene er ment å besvares skriftlig, alene, før gruppediskusjon. Poenget er ikke å finne «riktig» svar, men å tvinge frem et bevisst standpunkt.

1. Bowman skiller mellom **capacity** (å bygge koppen større) og **utilization** (å fylle koppen). Beskriv ditt eget treningsopplegg for én aldersgruppe du trener i dag: hvor på dette spekteret ligger dere mesteparten av sesongen? Er det et bevisst valg, eller har det bare blitt sånn?
2. Hemmings beskriver hvordan en enkelt kommentar («ta litt mer») kan flytte en «lett» aerob økt over i unødvendig anaerob stress, uten at farten egentlig endrer seg mye. Kan du komme på en episode fra din egen coaching der du trolig gjorde nøyaktig dette — uten å vite det på det tidspunktet?
3. Bowmans regel er: *hvis du ikke måler det, kan du ikke lede det*. Hvilke tre ting måler du systematisk i dag (tid, laktat, RPE, HR, oppmøte, skader ...), og hvilke burde du begynne å måle for å faktisk vite om intensitetsbalansen din stemmer med det du tror den er?
4. Hemmings' laktateksempel (Wood/Colbert, 7-8 mmol på et «rolig» 800-sett) viser et gap mellom subjektiv oppfatning og fysiologisk realitet. Når stolte du sist på magefølelsen for å vurdere om noe var «lett nok» — og hvordan ville du sjekket det, hvis du hadde hatt data tilgjengelig?
5. Bowman sier balansen mellom capacity og utilization skal *skifte med alder* — mer capacity jo yngre utøveren er. Hvordan ser den forskyvningen konkret ut i din egen gruppe, fra de yngste til de eldste? Hvis du ikke har en tydelig forskjell i dag — hvorfor ikke?

Del 2 — Case-analyse

Diagnostiser hva som skjer i hvert case, og foreslå ett konkret grep. Bruk begrepsapparatet fra tekstene (capacity/utilization, øktedesign, kobling mellom hviletid og reell intensitet, kumulativ belastning, survivorship bias).

Case A — «Den flittige gruppen» En 13-14-årsgruppe trener seks økter i uken. Tre av øktene er offisielt «terskel/utholdenhet», men treneren driver aktivt heining og pushing gjennom hele settet, og svømmerne racer hverandre. Frammøtet er høyt, men to av de mest lovende utøverne har hatt tre luftveisinfeksjoner denne sesongen, og teknikken ser dårligere ut på slutten av øktene enn i starten.

Spørsmål: Hva er den reelle intensitetsfordelingen i denne gruppen, uavhengig av hva øktene kalles på papiret? Hvilket av Hemmings' seks punkter (fart for ofte, lange drag hardt, stabling av harde økter, for mye volum, tidlige morgener, jakten på å vinne ung) treffer best her, og hva ville du endret først?

Case B — «Kopien av eliteprogrammet» En trener har lest om et kjent seniorprogramms ukeplan og legger inn en forenklet versjon for sin 11–12-årsgruppe, fordi «det er sånn de beste gjør det, og de blir best av det». Et par utøvere takler det fint og presterer godt akkurat nå.

Spørsmål: Bruk Hemmings' poeng om survivorship bias og Bowmans poeng om at capacity/utilization-balansen skal endre seg med alder. Hva sier «de takler det fint akkurat nå» egentlig noe om — og hva sier det ingenting om? Hva ville du sagt til denne treneren?

Case C — «Hell week uten en plan» En trener har hørt om Bowmans «hell week»-konsept og bestemmer seg for å kjøre en tilsvarende ukes overbelastning med sin gruppe, rett før et viktig stevne, uten at det er del av en lengre plan for resten av sesongen.

Spørsmål: Hva er forskjellen mellom Bowmans versjon av dette (tre uker før stevne, etterfulgt av en normalisert uke og deretter en hvileuke) og denne treneres bruk av det? Hvorfor fungerer verktøyet i den ene konteksten og potensielt ikke i den andre?

Del 3 — Praktisk designoppgave

Velg én av utøvergruppene du faktisk trener (eller en typisk norsk juniorgruppe, f.eks. 13–14 år eller 15–16 år).

1. **Plasser gruppen på capacity/utilization-spekteret.** Begrunn hvor de bør ligge nå, gitt alder og utviklingsnivå — ikke hvor de faktisk ligger i dag.
2. **Design én treningsuke** (5–7 økter) som er tydelig forskjøvet mot capacity-siden av spekteret, men som fortsatt inneholder minst én økt med reell kvalitet/spesifisitet — altså ikke ren monoton «alt er lett».
3. **For hver økt**, angi kort:
 - Hva er hensikten (capacity eller utilization — eller en bevisst overgang mellom dem, som Bowmans 2-4-6-8-200-stige)?
 - Hva er den faktiske intensitetsstyrende variabelen (draglengde, pause, mål-tid) — ikke bare «lett» eller «hardt» som etikett?
 - Hvordan vil du vite, i praksis, om økten ble det du planla — hva måler du?
4. **Beskriv én konkret språklig vane** du vil legge inn hos deg selv som trener for å unngå at «lette» økter sniker seg oppover i intensitet (jf. Hemmings' poeng om coaching-cues).

Del 4 — Diskusjon i gruppe

Disse er ment for trenersamlinger eller kollegaveiledning, ikke individuell besvarelse.

- Bowman sier: *lær det som er bevist å virke først, bli «klassisk skolert», og gå deretter crazy*. Hva vil «klassisk skoling» faktisk bety for en norsk aldersgruppetrener i dag — hvilken kunnskap/erfaring er det ikke greit å hoppe over?
- Begge tekstene antyder at press for tidlig suksess (uttak, rangeringer, sammenligning) er en av hoveddriverne bak for høy intensitet hos unge utøvere — ikke ren treningsfaglig uvitenhet. Hvis det stemmer: er «bedre fysiologikunnskap hos trenere» nok til å løse problemet, eller ligger en del av løsningen et helt annet sted (klubbkultur, foreldreforventninger, konkurransesystem)? Diskuter.
- Hvordan vil dere som trenerteam vite, om to-tre sesonger, om dere faktisk har lyktes med å bygge «en større kopp» hos de yngste utøverne — altså at capacity-arbeidet har lønt seg — i motsetning til bare å ha unngått utbrenthet? Hvilke konkrete tegn ville dere se etter?