





Jon Sundan

Førsteamanuensis i kroppsøving



Trondheim, Norge



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2013



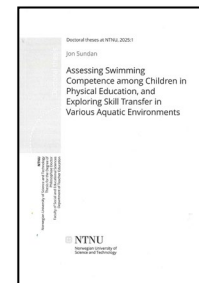
2017



2025



2025-



Hva slags kompetanse
trenger barn for å trives, være
trygg og mestre aktiviteter i,
ved og på vann?





Sammenhengen mellom svømmeferdigheter inne og ute – Hvordan gjøre svømmeopplæring mer relevant for drukningsforebygging?

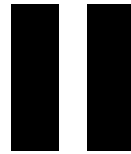
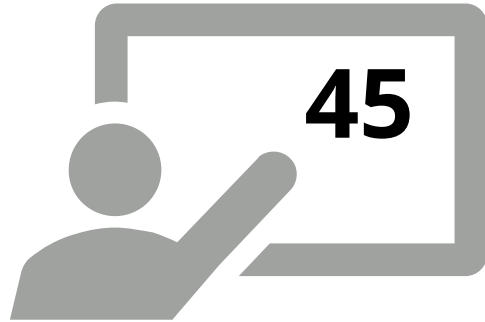
25.-27. april
Thon Hotel Oslo Airport, Gardermoen

FORBUNDSTINGET 2025
KOMPETANSEHELGA

NORGES SVØMMEFORBUND
Norgesqum Swimming Federation

arena
ZEEKIT BUSINESS IN MOTION
THON HOTELS

KOMPETANSEHELGA 2025					
	Svømmeskole-ansvarlige Teamledere	Svømmetrenerer	Artistisk svømming	Vannpolo/ minipolo	Klubbledere
Møtested	Kepler	Oslo	Kampen	Oslo / Trondheim	Sagene
09:30	Registrering				
	Praktisk informasjon v/ NSF				
11:45	Hva blir de viktigste vedtakene fra Forbundsstinget 2025? v/ NSF				
	Velkommen til konferansen v/ NSF's president				
12:15-13:00	Båtsjøfjord Sportsklubb Svømming og Vardes Svømmeklubb - suksessfaktorer, samarbeid og dugnadsånd v/ Eugenia Myrnes, Elisabeth R. T. Sannes og Tor Erik Labahn				
13:00	Lunsjbuffet				
	i hotellets restaurant / Badet				
14:00-14:00	1400-1500 Helhetlig svømmeopplæring i barnehagen v/ Marita Skansen, Em Adnan-Ambale og Pietro Melisato	1400-1500 Svømmens betydning for vekst, utvikling og prestasjon v/ Ståle Paulsen	1400-1540 Slik får idretten større gjennomslag i hele Norge - Tips og råd i politisk påverkingsarbeid v/ Frida Blomgren		
14:00-14:00	1520-1800 Workshop: Viktigheten av utforskning og lek - Finn ut hvordan lek og kreativitet i treningen kan gi bedre utvikling v/ Kristine Røssland, Øyvind Røssland, Jan Kjenst og Tore de Faveri	1520-1800 Koreografi-planlegging v/ Lesli Bubnova	1520-1630 Enkeltspilleren i laget v/ Vigdis Holmset	1520-1800 Kompetansedeling: Treningssprogrammer og øvelser	1600-1800 Konfliktløsning i praksis v/ Siri B. Hom
18:30-19:30	Fellestrening. Velg mellom 1. Lett løpetur med Morten Udval (oppmøte resesipon) eller 2. Pilates med Christina Dyrnesland Kjellev (4. etasje i konferanseunderetagen)				
20:00	Middagsmøtering i Kepler (tre etasjer)				
09:00-09:00	0900-0930 Instruksjonsfilmer for parasvømming v/ Ingrid Ravan	0900-1135 Utviklingshulet - et prosess-verktøy for å ivareta helhetssvømmingen v/ Ingrid Risse Moltun og Einar Kåberg	0900-1135 Koreografi-planlegging v/ Lesli Bubnova	0900-1030 Oppdatering av nye regelendringer i vannpolo v/ Giuseppe Paracola	0900-1135 Kommunikasjons- og påvirkningsstilt som klubbledere v/ Yassin El Barkani
11:35	0940-1135 Sammenhengen mellom svømmeferdigheter inne og ute - Hvordan gjøre svømmeopplæring mer relevant for drukningsforebygging? v/ Jon Sundan			1050-1135 Minisworkshop: Hvordan kan vi gjøre minipolo og vannpolo mer attraktivt?	
11:50-12:45	/Erlige samtaler med ungdom v/ Kirsten Røssland				
12:45	Avaldsnes v/ konferansen v/ NSF				
13:00	Lunsjbuffet				
	i hotellets restaurant / Badet				



Fokus





Foto: Privat



Foto: Privat



Foto: Privat

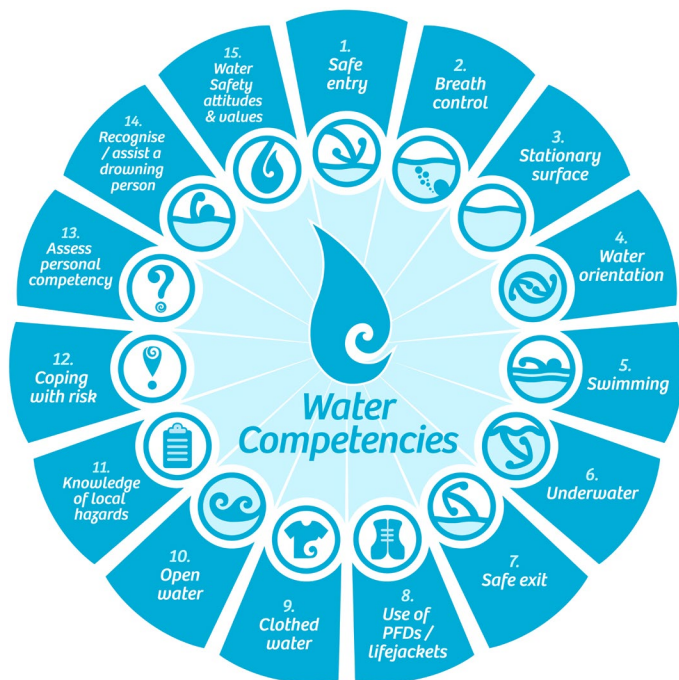


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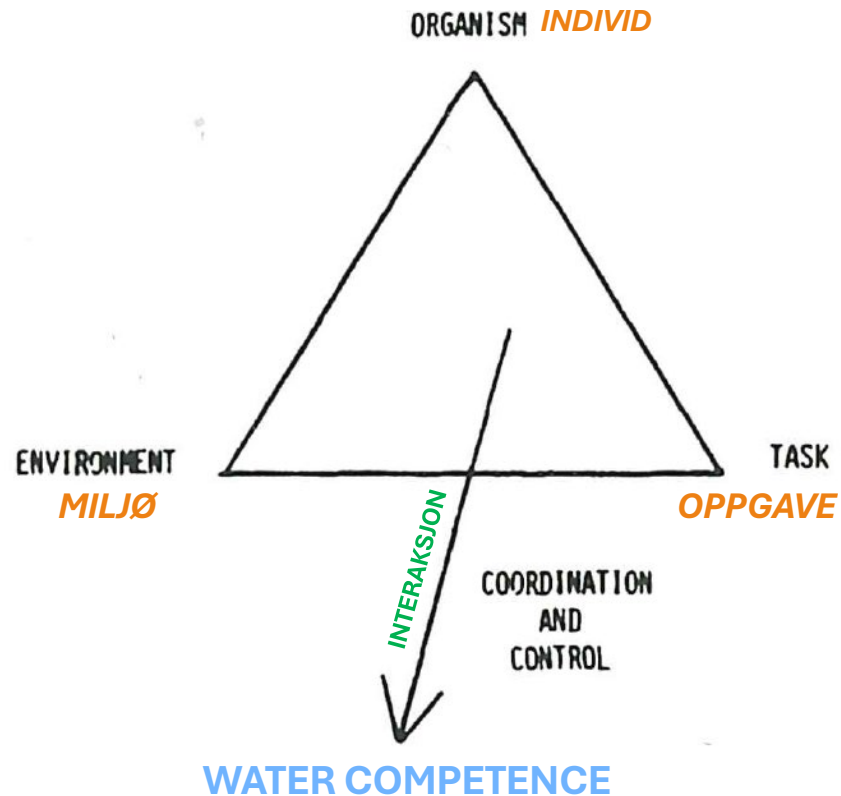




TEORETISK PERSPEKTIV



Modellen lånt med tillatelse fra Drowning Prevention Auckland (n.d.)



Tilpasset fra den originale modellen fra Newell (1986)

Transfer kan beskrives som:

*“the influence of **previous** experiences on performing a skill in a **new** context...”*

(Magill & Anderson, 2017, p. 299)

Transfer

Trening



Konkurranse



«*Transfer*» oppgaven

«*Kriterie*» oppgaven

Transfer forts.

Trening



Konkurranse



«*Transfer*» oppgaven

«*Kriterie*» oppgaven

Transfer forts.

Utdanningskontekst



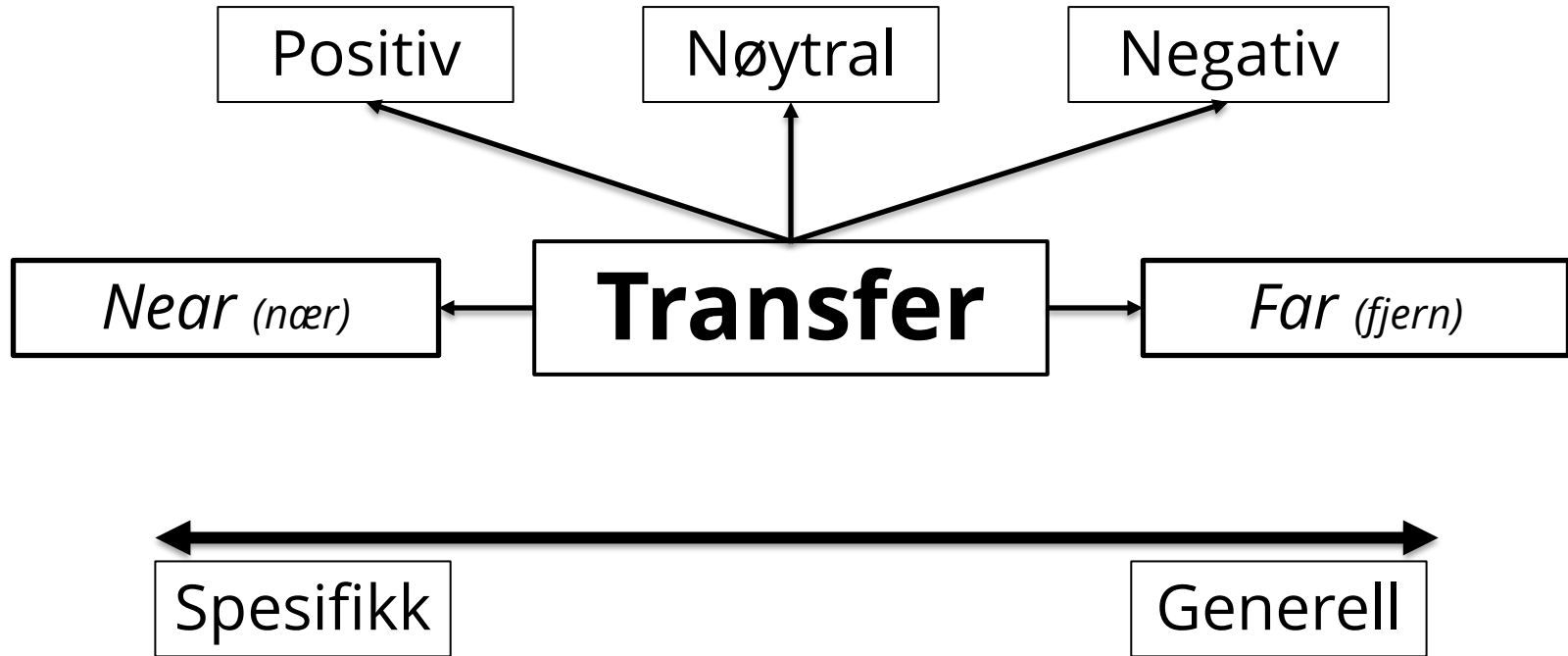
«*Transfer*» oppgaven

Drukningskontekst



«*Kriterie*» oppgaven

Gevinsten (eller tap) i evnen til å utføre en oppgave (kriterieoppgave) som følge av øvelse i en annen oppgave (transferoppgave)



Development and Content Validation of the Swimming Competence Assessment Scale (SCAS): A Modified Delphi Study

Jon Sundan¹, Monika Haga¹, and Håvard Lorås¹

Abstract

The purpose of this study was to design and develop the Swimming Competence Assessment Scale (SCAS) to measure children's aquatic skills as they align with the theoretical education curriculum for Norwegian primary schools. We conducted a three-round modified Delphi study involving 22 national experts in the aquatic profession. Experts reached consensus on scale items within an observation form and coding sheet based on a swimming proficiency test for measuring six aquatic skills: water entry, frontstroke swimming, surface dive, floatline, backstroke swimming, and water exit. Independent experts obtained high agreement (scale level: 88%, item level: 80-93%) on the theoretical representations, and clarity of the scale. Current results suggest that the SCAS is a valid instrument for researchers and practitioners to observe and record children's aquatic proficiency for the purpose of screening and developing aquatic education.

Keywords

children's aquatic competence, swimming skills, sport assessment, water safety, sport psychometrics

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Article

Swimming competence of 9–10-year-old Norwegian primary school children: A cross-sectional study of physical education

Jon Sundan¹

Norwegian University of Science and Technology, Norway

Monika Haga¹

Norwegian University of Science and Technology, Norway

Håvard Lorås¹

Norwegian University of Science and Technology, Norway

Abstract

Swimming is a profound source of joy in life. The impact of swimming competence extends beyond leisure, encompassing aquatic skills crucial for the prevention of drowning incidents. The World Health Organization (WHO) strongly advocates for the proactive initiation of teaching basic swimming and water safety skills to school-age children, which is recognized as a direct and effective measure in mitigating the risk of drowning. This article aims to investigate and quantify aquatic skills and swimming competence in 9–10-year-old primary school children. A study was conducted throughout the academic year of 2021–2022, as an integral component within the primary school physical education. The study design was tailored to facilitate longitudinal assessment, encompassing children from 10 primary schools (n = 242) situated across three Norwegian municipalities. The assessments were administered upon the completion of the fourth-grade water-to-land program and carried out using the Swimming Competence Assessment Scale, testing six consecutive aquatic skills: water entry, swimming on the back, surface diving, floatline, swimming on the back, and water exit. The results indicated that 62.5% of the children successfully met the predetermined criteria for swimming competence according to the Norwegian standard. Among the six assessed aquatic skills, proficiency in swimming on the back emerged as the most influential factor contributing to the overall competence level. This study emphasizes the pivotal role of swimming education for school-age children. It highlights the need to prioritize swimming and water safety education, instilling children's learning journey toward being water-competent.

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Email: epers@epersociety.com
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Sage

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NTNU
Norwegian University of Science and Technology
The School for the Degree of
PhD in Physical Education
Faculty of Social and Educational Sciences
Department of Teacher Education

Doctoral theses at NTNU, 2025:1

Jon Sundan

Assessing Swimming Competence among Children in Physical Education, and Exploring Skill Transfer in Various Aquatic Environments



Norwegian University of Science and Technology

3-15-2025

Construct Validity, Test-Retest Reliability, and Inter-Rater Objectivity of the Swimming Competence Assessment Scale (SCAS)

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Working title: Environmental Constraints: A Comparative Analysis of Swimming Competence in Different Aquatic Environments

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Introduction

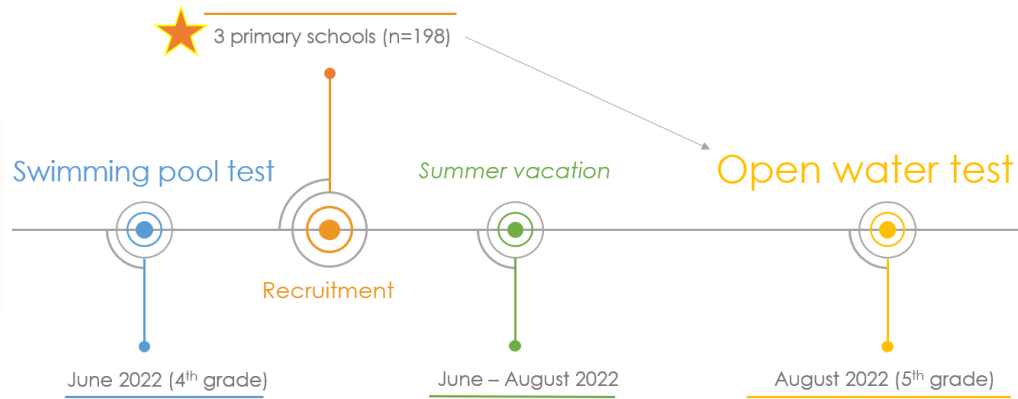
Workbooks, individualized guidelines towards aquatic environments, driven by several motivations encompassing employment and professional commitments, travel, recreational pursuits, and engagement in sports. An investigation of living conditions in municipalities (1) that actively engage in outdoor bathing or swimming annually. This finding underscores the relevance of aquatic activities as a fundamental component of sports and recreation within a population.

Participating in aquatic pursuits entails the inherent risk of drowning incidents, which is a prominent contributor to unintentional injury-related fatalities worldwide (2). Consequently, there is a need to implement preventive measures. The World Health Organization (WHO) (3) has crafted consensus-based initiatives encompassing actions, policies, and regulations to mitigate the morbidity and mortality associated with drowning incidents, coupled with an urging for further research in this domain. The



Kunnskap for en bedre verden

Sundan, Lorås & Haga (2025) [Forthcoming]. Environmental Constraints: A Comparative Analysis of Children's Swimming Competence in Different Aquatic Environments. *Physical Education and Sport Pedagogy*.



Måleverktøy

Original Manuscript

Development and Content Validation of the Swimming Competence Assessment Scale (SCAS): A Modified Delphi Study

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S Sage

Jon Sundan¹, Monika Haga¹, and Håvard Lorås¹

Abstract

The purpose of this study was to design and develop the Swimming Competence Assessment Scale (SCAS) to measure children's aquatic skills as they align with the physical education curriculum for Norwegian primary schools. We conducted a three-round modified Delphi study involving 22 national experts in the aquatic profession. Experts reached consensus on scale items within an observation form and coding sheet based on a swimming proficiency test for measuring six aquatic skills: water entry, frontstroke swimming, surface dive, float/rest, backstroke swimming and water exit. Independent experts obtained high agreement (scale level: 88%; item level: 80%–93%) on the relevance, representativeness, and clarity of the scale. Current results suggest that the SCAS is a valid instrument for researchers and practitioners to observe and record children's aquatic proficiency for the purpose of screening and developing aquatic education.

Keywords

children's aquatic competence, swimming skills, sport assessment, water safety, sport psychometrics

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Email: jon.sundan@ntnu.no

Swimming Competence Assessment Scale (SCAS)
PROSEDYR FOR REGISTRERTORPER

Observed person:

- The observation form contains 100 items that are divided into 10 groups (A to J) and 10 sub-groups (1 to 10).
- The items are divided into 10 groups (A to J) and 10 sub-groups (1 to 10).
- The items are divided into 10 groups (A to J) and 10 sub-groups (1 to 10).

Observation form:

- The observation form contains 100 items that are divided into 10 groups (A to J) and 10 sub-groups (1 to 10).
- The items are divided into 10 groups (A to J) and 10 sub-groups (1 to 10).
- The items are divided into 10 groups (A to J) and 10 sub-groups (1 to 10).

Code sheet:

- The code sheet contains 100 items that are divided into 10 groups (A to J) and 10 sub-groups (1 to 10).
- The items are divided into 10 groups (A to J) and 10 sub-groups (1 to 10).
- The items are divided into 10 groups (A to J) and 10 sub-groups (1 to 10).

Procedures

Swimming Competence Assessment Scale (SCAS)
OBSERVINGSKJEMME

Observert person	Grupper	Kompetensetrinn																		
		A	B	C	D	E	F	G	H	I	J									
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	6	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	7	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	8	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	9	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	10	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

Observation form

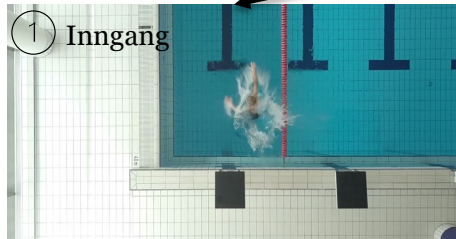
Swimming Competence Assessment Scale (SCAS)
REGISTRINGSKJEMME

Observert person	Grupper	Kompetensetrinn																		
		A	B	C	D	E	F	G	H	I	J									
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	6	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	7	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	8	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	9	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	10	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

Coding sheet

Kompetansemål etter 4. trinn

være svømmedyktig ved å falle uti på dypt vann, svømme 100 meter på magen, og underveis dykke ned og hente en gjenstand med hendene, stoppe og hvile i 3 minutter (og samtidig flyte på magen, orientere seg, rulle over og flyte på ryggen), og deretter svømme 100 meter på rygg og ta seg opp på land



Kompetansemål etter 4. trinn

være svømmedyktig ved å falle uti på dypt vann, svømme 100 meter på magen, og underveis dykke ned og hente en gjenstand med hendene, stoppe og hvile i 3 minutter (og samtidig flyte på magen, orientere seg, rulle over og flyte på ryggen), og deretter svømme 100 meter på rygg og ta seg opp på land

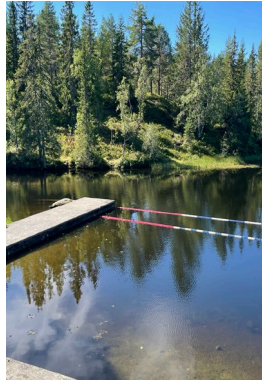
① Inngang



② Svøm mageleie



③ Dykke



④ Hvile / Flyte



⑤ Svøm ryggeleie



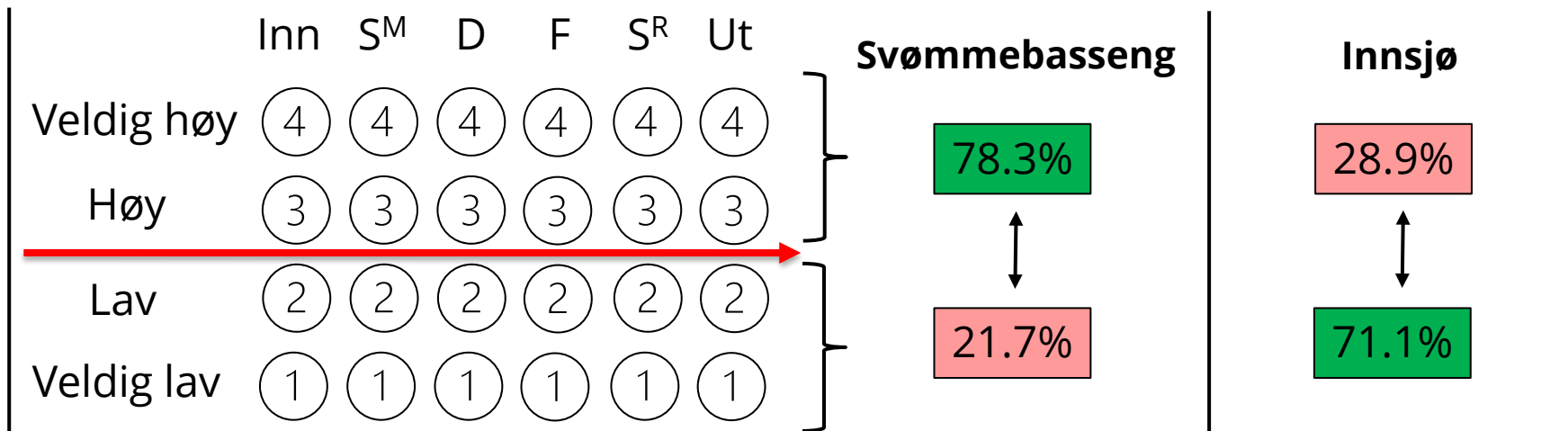
⑥ Utgang



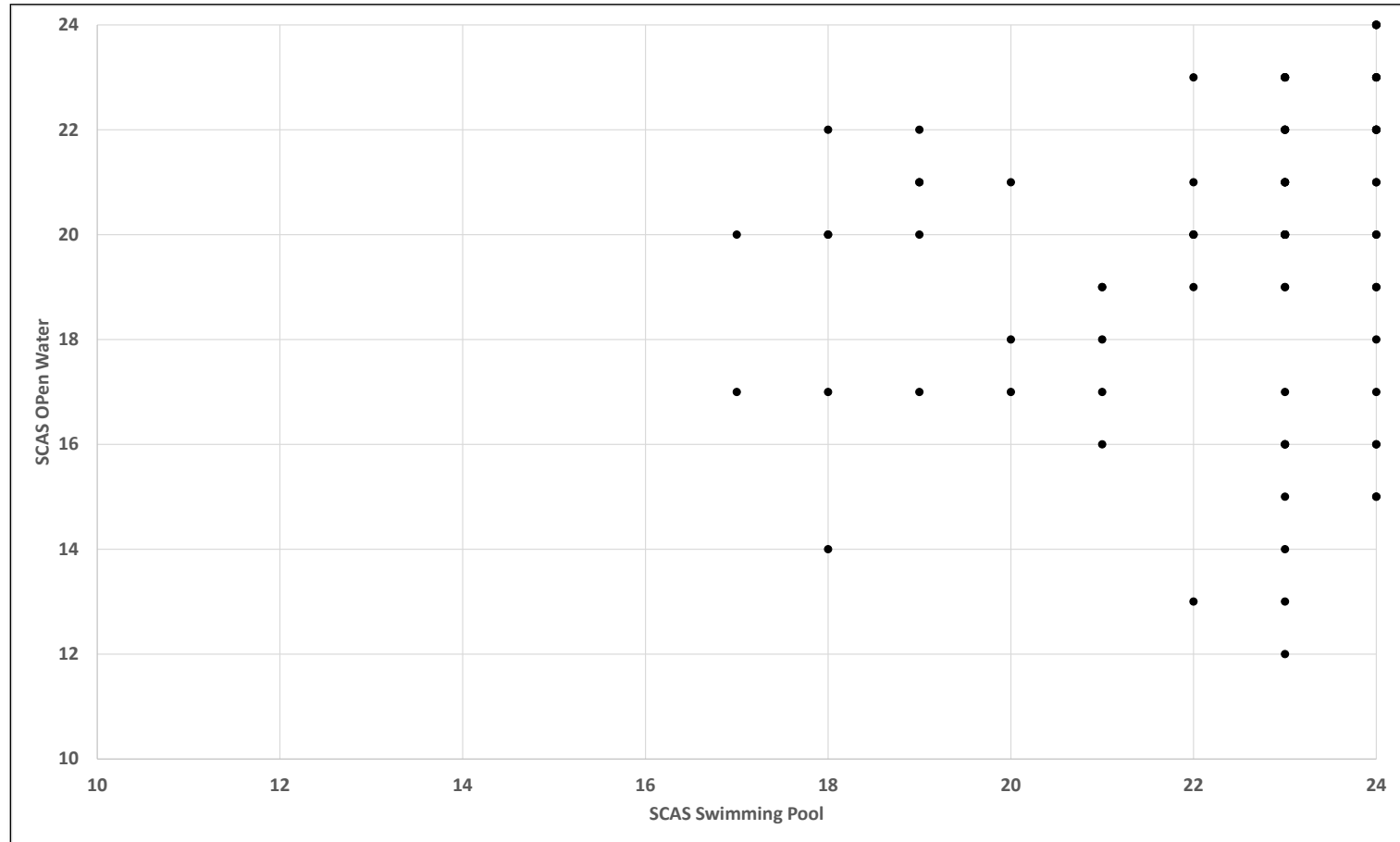
Resultater (N=83)

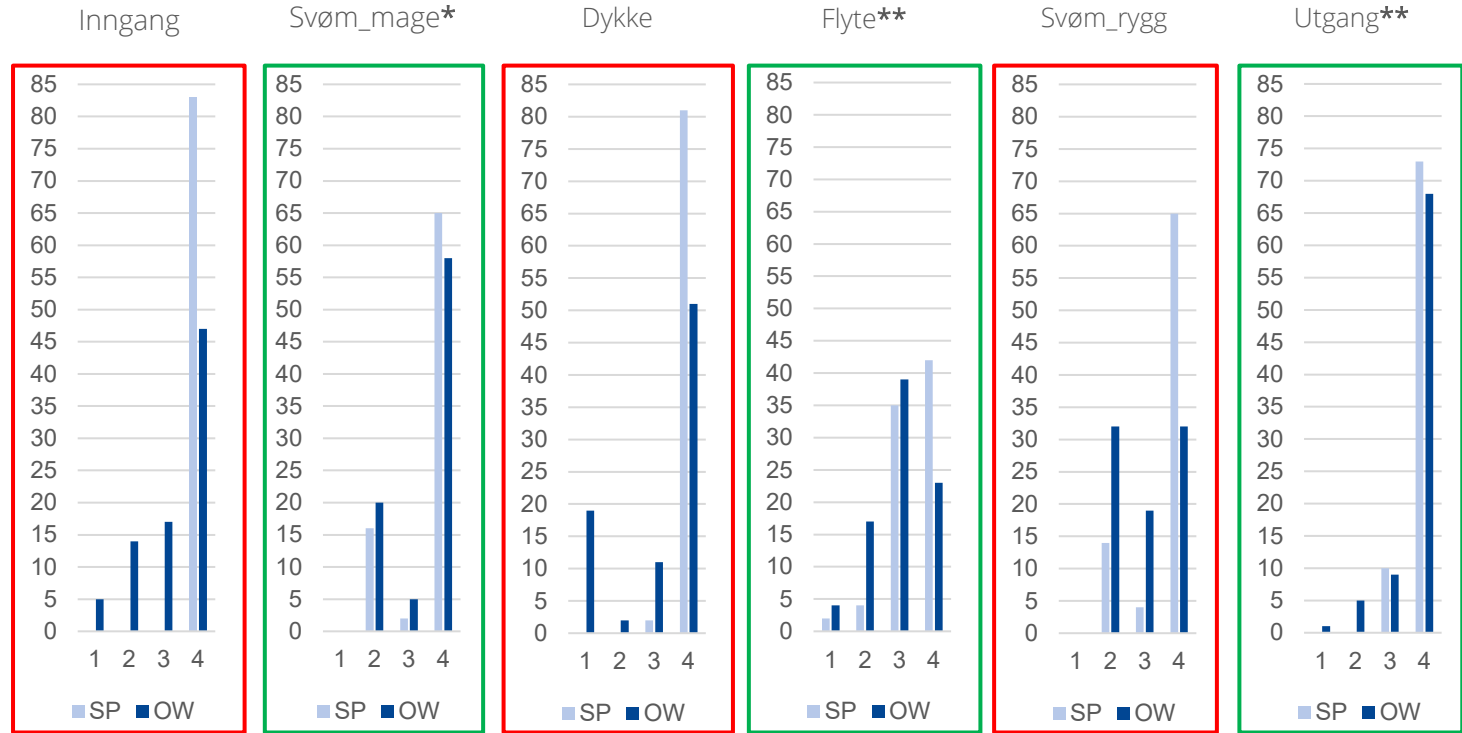
være svømmedyktig ved å falle uti på dypt vann, svømme 100 meter på magen, og underveis dykke ned og hente en gjenstand med hendene, stoppe og hvile i 3 minutter (og samtidig flyte på magen, orientere seg, rulle over og flyte på ryggen), og deretter svømme 100 meter på rygg og ta seg opp på land

Utføre kontinuerlig



		Open-water		Total
		No	Yes	
Swimming pool	No	19	1	20
	Yes	40	23	63
Total		59	24	83





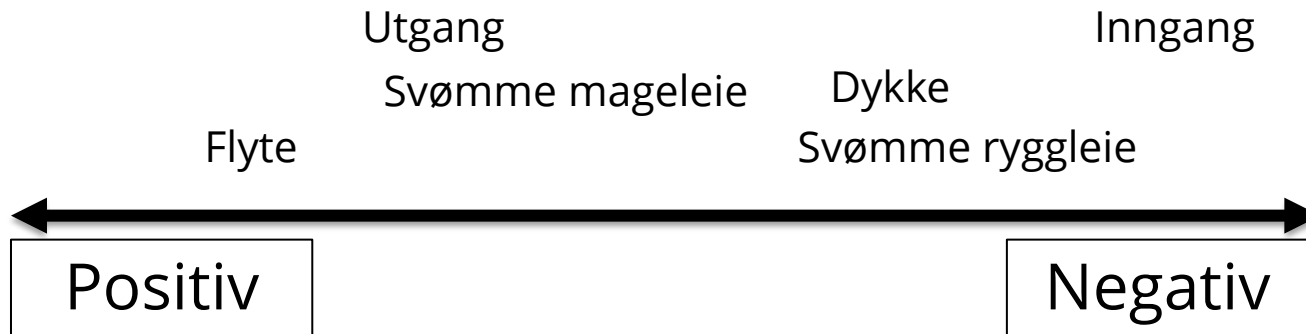
	Swimming pool (SP)
	Open water (OW)

* $p < .05$

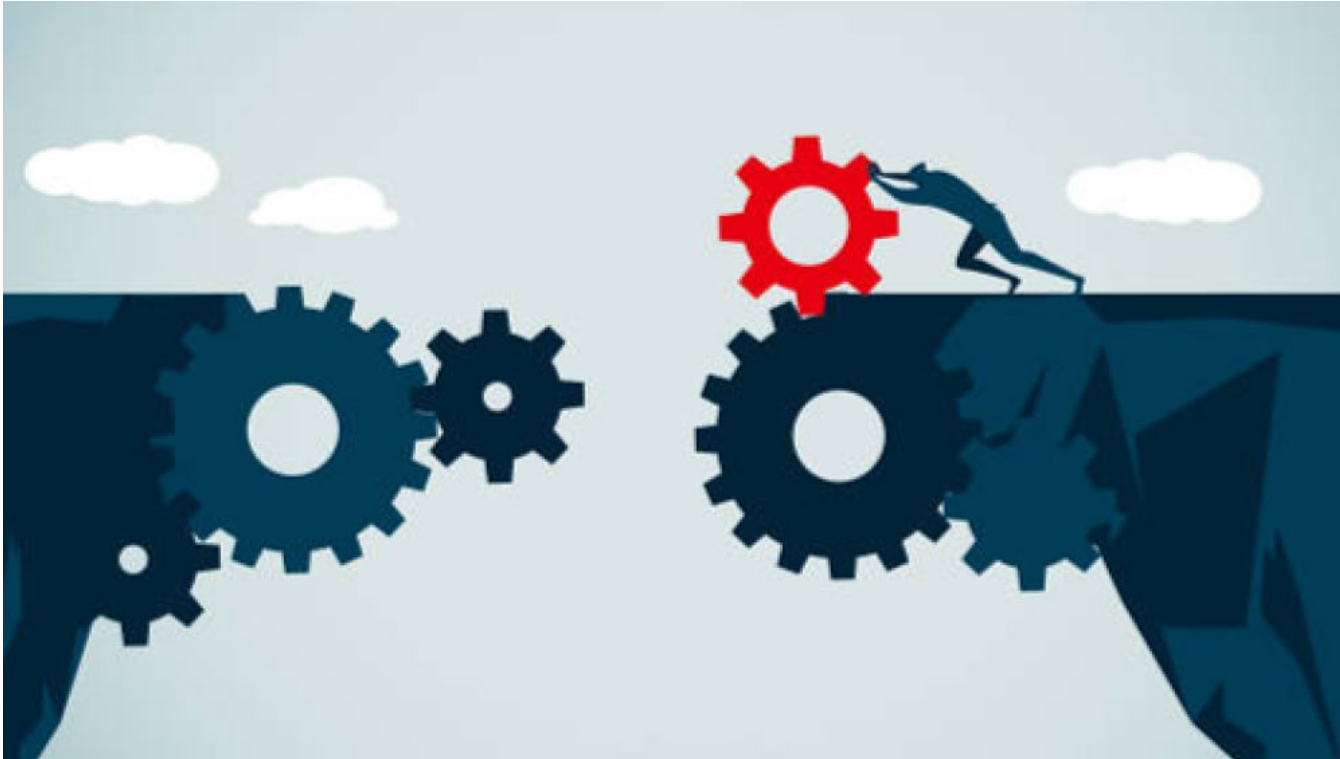
** $p < .01$

Hva forteller resultatene oss?

- Variasjon i grad av transfer
- Omgivelsenes rolle
 - Kaldt vann/ Kuldesjokk respons (CSR)
 - Manglende evne til å tilpasse seg



Hvordan kan vi redusere gapet?



Representativt Lærings Design (RLD)

(Button et al. 2021; Davids et al., 2012; Pinder et al., 2011)

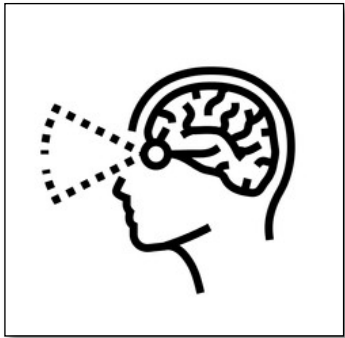
- Forslag: Ethvert bevegelsesproblem vi står overfor på trening (transfer-oppgave) som har samme *grunnleggende struktur* som de du møter i virkelige scenarier (kriterie-oppgave) vil overføres
- **Hvordan utformer vi slike oppgaver?**



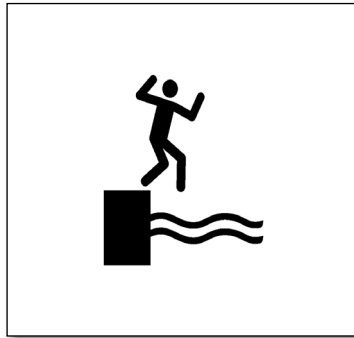
Hva må kakestykket inneholde?



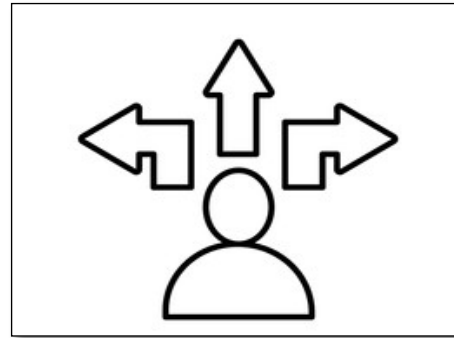
- Hva må være likt?
- Fokusområde
- 4 nøkkelementer (grunnleggende struktur):



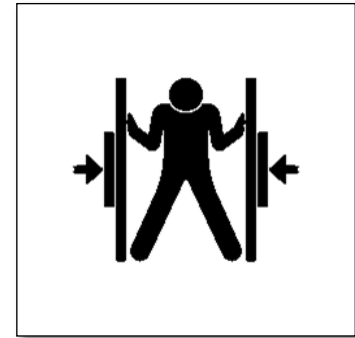
Informasjon



Bevegelser

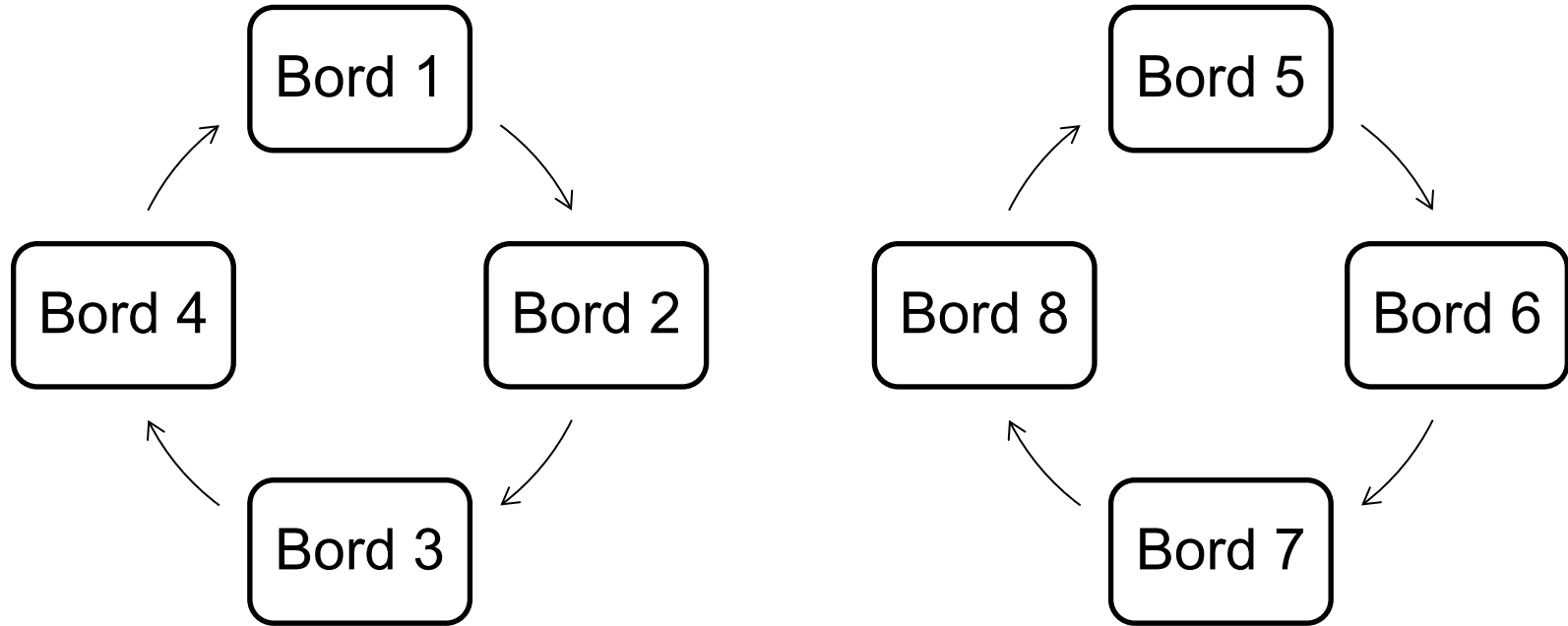


Beslutninger



Trykk

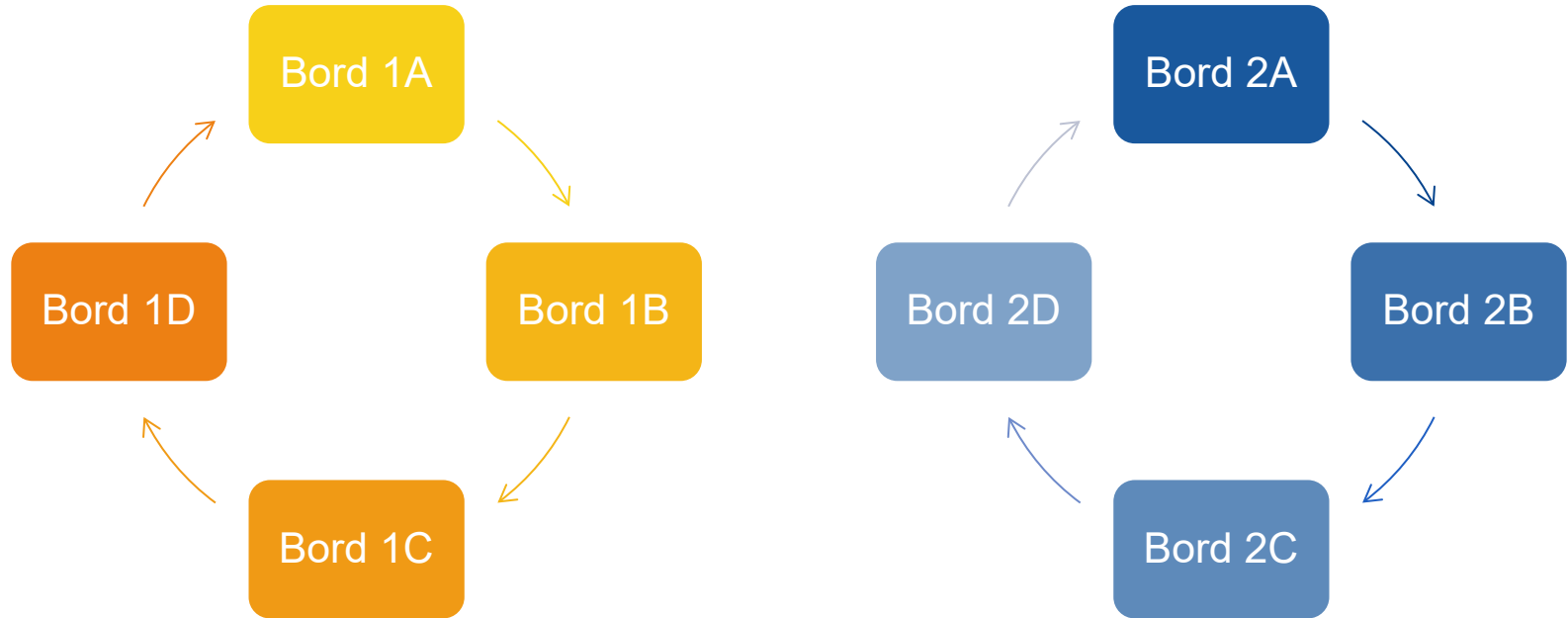
Kaffepause



Workshop

- Arbeide med å designe kvalitetsproblem (representative oppgaver)
- Designe oppgave
 - **Transferoppgave** (innendørs)
 - Skal gjenspeile et utemiljø (**kriterieoppgave**)
 - *Informasjon – relevante bevegelser – beslutningstaking – press*
- Fire caser
- Målgrupper 5 – 7. trinn: **Kompetansemål etter 7. trinn**
vurdere sikkerhet i uteaktivitet og naturferdsel og gjennomføre
selvberging i vann

Verdenskafe



Kriterieoppgave 1



Kriterieoppgave 2



Kriterieoppgave 3



Kriterieoppgave 4





REPRESENTATIV LÆRINGS DEISGN (RLD)

1) Kriteieoppgave:

Beskriv setting (på bildet):

2) Nøkkelpoengter (grunnleggende struktur i kriteieoppgaven)

Informasjon (information)	Bevegelser (actions)	Beslutninger (decision-making)	Trykk (emotion/affective)

3) Design og beskriv en representativ oppgave / kvalitetsproblem i et svømmebasseng (vær gjerne kreativ ift. hvor i svømmehallen, utstyr brukt, oppdagende og utforskende karakter etc.)

--

Representative Practice Design Reflection Tool

Does the task have a specific purpose that can be measured?

Does the task encourage the participants to be adaptable in movement solution selection and execution?

Does the task require the participant to make tactical decisions relative to their level of skill and reflecting those in competition?



Are the information sources the same as in competition (opponents, equipment, venues, light, surfaces, etc.)

Is the environment relevant to the ability of the participants and reflect the environment in competition?



Does the task reflect the affective (emotional/ stress) nature of the performance environment?

Are there sufficient opportunities for positive skill transfer from practice to performance?

Refleksjon	Hvordan kan du forbedre dette i din kommende aktivitet?
1. Har oppgaven en spesifikk hensikt?	
2. Krever oppgaven at deltakeren tar avgjørelser i forhold til sitt ferdighetsnivå og reflekterer målkontekst?	
3. Er miljøet relevant for deltakerens evner og gjenspeiler det miljøet i målkontekst?	
4. Oppmuntrer oppgaven deltakerne til å være tilpasningsdyktige i valg og utførelse av bevegelsesløsninger?	
5. Er informasjonskildene de samme som i målkontekst (motstandere, utstyr, arenaer, lys, underlag osv.)?	
6. Gjenspeiler oppgaven den affektive (emosjonelle/stressende) naturen til ytelsesmiljøet?	
7. Er det tilstrekkelige muligheter for positiv ferdighetsoverføring fra trening til ytelse?	

Fritt oversatt etter RPAT (Representative Practice Assessment Tool) Krause et al., 2017.

- *«Å være dyktig er ikke prosessen eller å gjenta en bevegelse, men er prosessen med å gjenta å finne en løsning»*
- Bedre beslutningstakere...
- ... og problemløsere



Takk for diskusjonene, og takk for meg



Resultatene fra workshopen, inkludert eksempler på representative oppgaver og utfordringer i et svømmebasseng med mål om å øke overføringsverdien til et utemiljø, vil bli gjort tilgjengelige så snart de er renskrevet.