

Open Water Safety Education Across Otago

Prof. Chris Button

Otepoti Water Safety Forum

22nd October, 2024



University
of Otago

ŌTĀKOU WHAKAIHU WAKA



Overview

1. Context
2. Open water safety across Otago
3. Results
4. Challenges & Benefits
5. Q&A / discussion



Note: Permission to reproduce photos provided by all participants

1. Context

In Aotearoa NZ, water safety education typically begins with children learning to swim in a swimming pool, however...

- Water safety education is not just about learning to swim in a pool
- Access and cost of pools
- Limited swimming teachers (often outsourced)
- Drownings more common in open water (e.g., ocean, rivers, lakes, ponds, etc.)

(Button, et al. 2023)



Water safety education in open water

4

Lessons learned from past research

- Format, content and location of teaching
- Value of outdoor camp-like experiences
- Range of open water locations effective
- Local knowledge is important

Lessons still to learn

- Which skills and levels are best taught in open water?
- What are barriers for providers?
- How can combined programs be implemented at scale?



Ōtākou
Whakaihu Waka
UNIVERSITY OF OTAGO

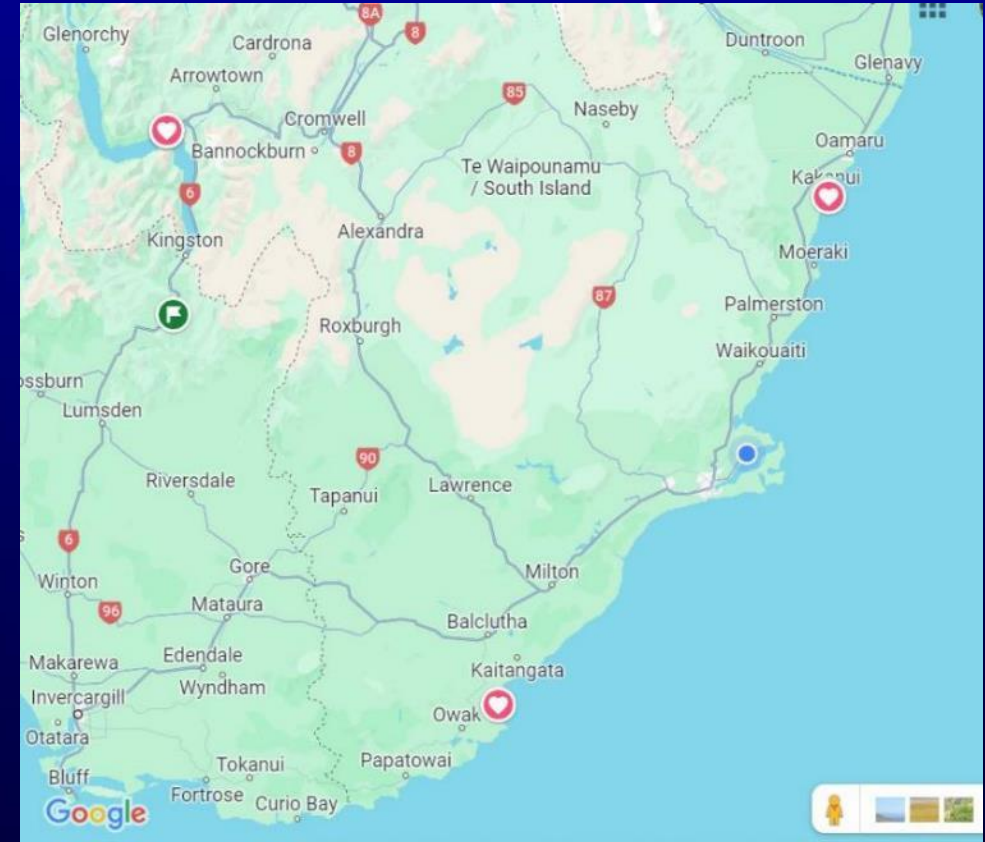
2. Open Water Safety Across Otago

Extending our water safety programme (Dunedin) across Otago

- North (Oamaru / Kakanui)
- Central (Queenstown / Hawea)
- South (Balclutha / Kaka Point)

Aims:

1. Improved water safety education
2. Improved participation in active recreation in open water
3. Improved access to tamariki from rurally remote and deprived areas to water safety education



Water Safety programmes

Each programme was based upon our combined pool & open water one-week holiday programme

Example schedule (North Otago):

Day 1 & 5: Swimming pool

Day 2: Museum (classroom)

Day 3: Harbour

Day 4: Beach

80 children (7-12 yrs old) participated overall

Children and parents completed online survey before and after the programme

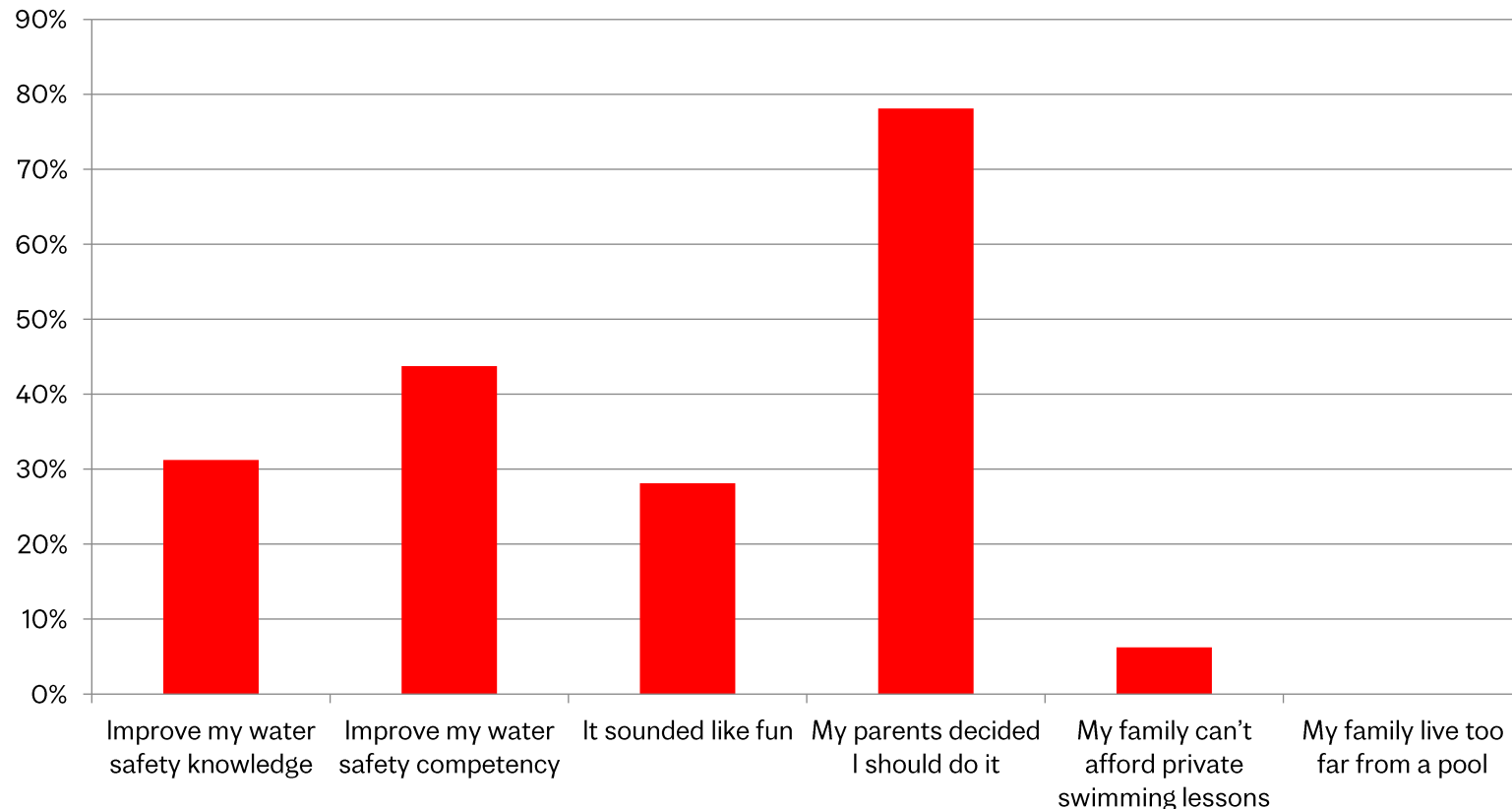
Education providers participated in focus group interviews online



Survey Results – children & parents

Before programme

Why did you agree to take part in this water safety education programme? (tick all that apply and/or select other)



- Motivation – parents & ↑ competency
- \$\$ and location less important factors
- Children don't tend to relate to water safety as 'fun'



University
of Otago

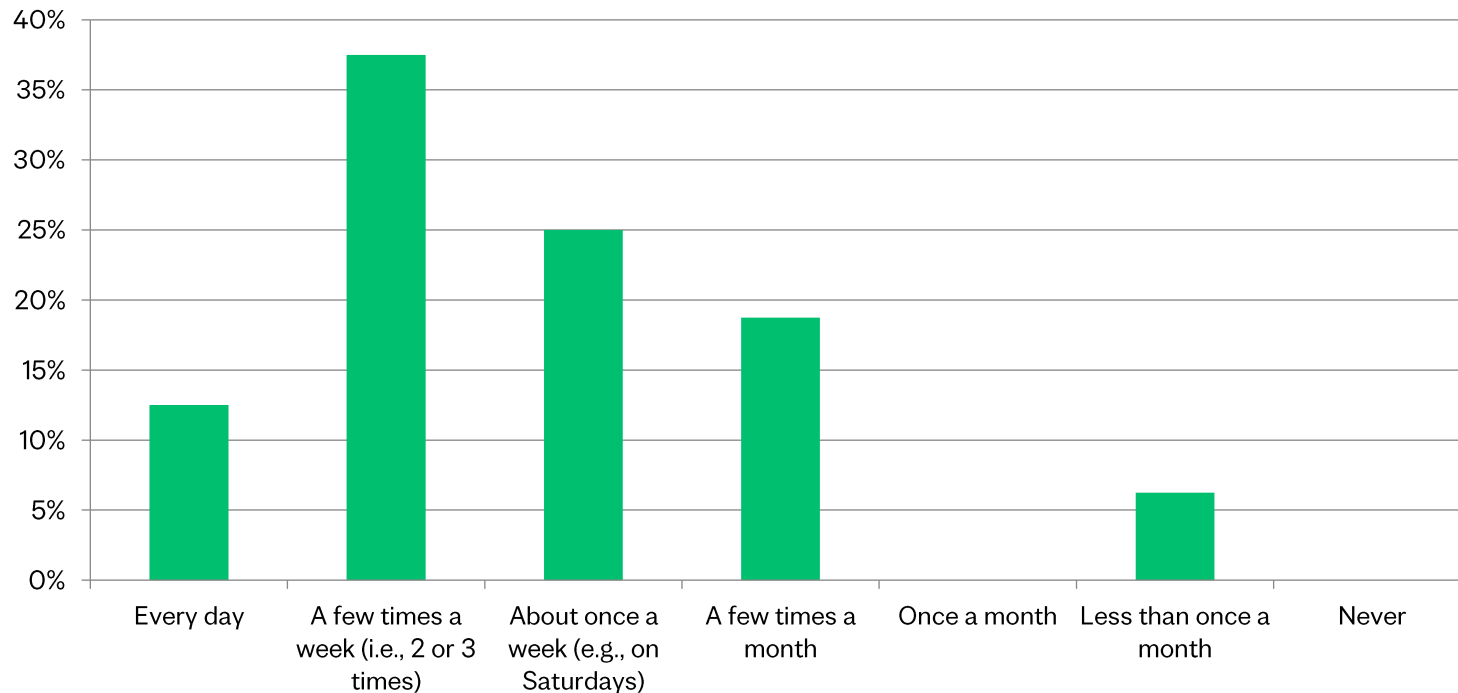
ŌTĀKOU WHAKAIHU WAKA

Survey Results – children & parents

8

Before programme

On average over the school summer holidays, how often do you typically play or exercise in open water environments? (like lakes, rivers or the ocean)



- Otago children regularly visit open water locations
- At least 50% children play or exercise in open water at least 2 or 3 times per week



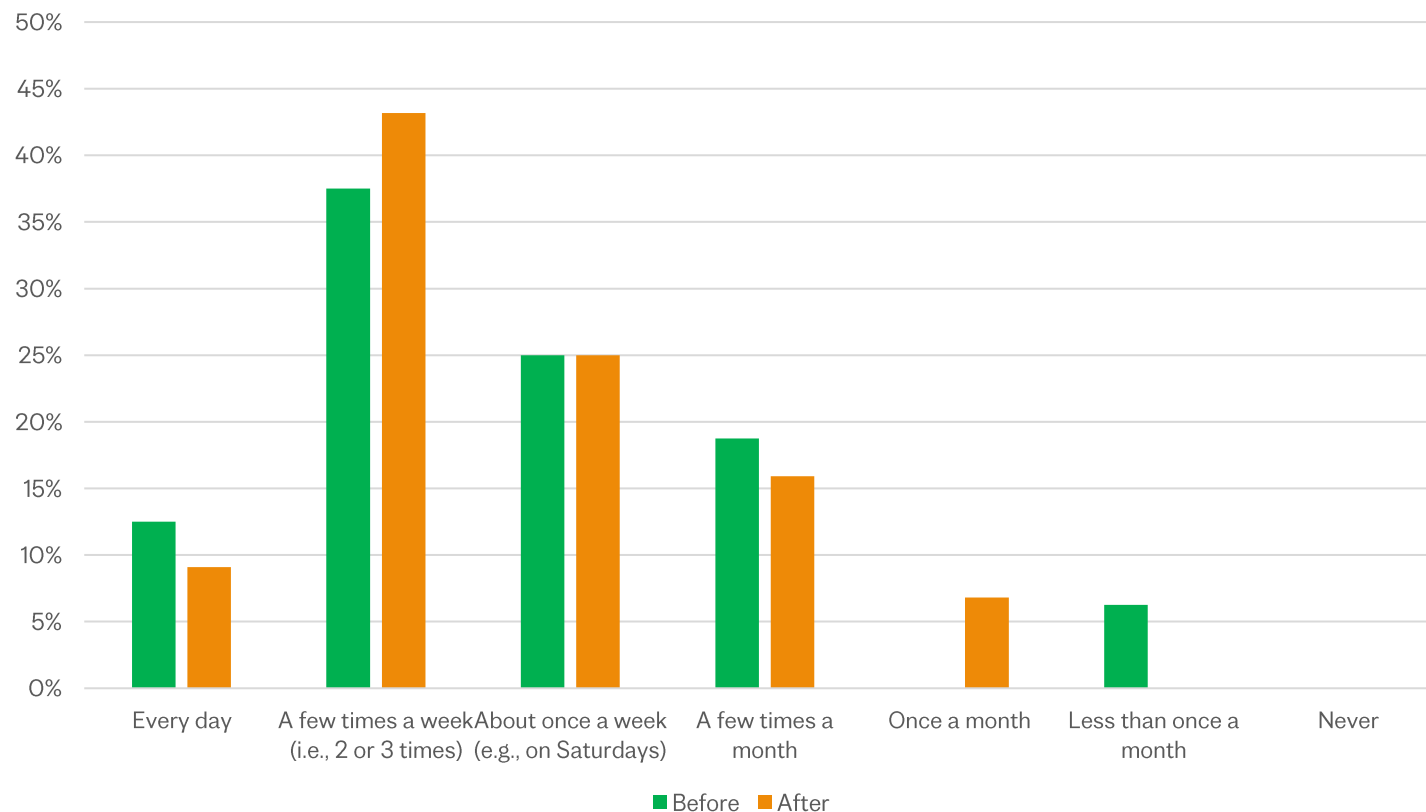
University
of Otago
ŌTĀKOU WHAKAIHU WAKA

Survey Results – children & parents

9

After programme

Now that you've completed the water safety programme, how often do you think you will typically play or exercise in **open water environments (like lakes, rivers or the ocean)** over the Summer holidays?



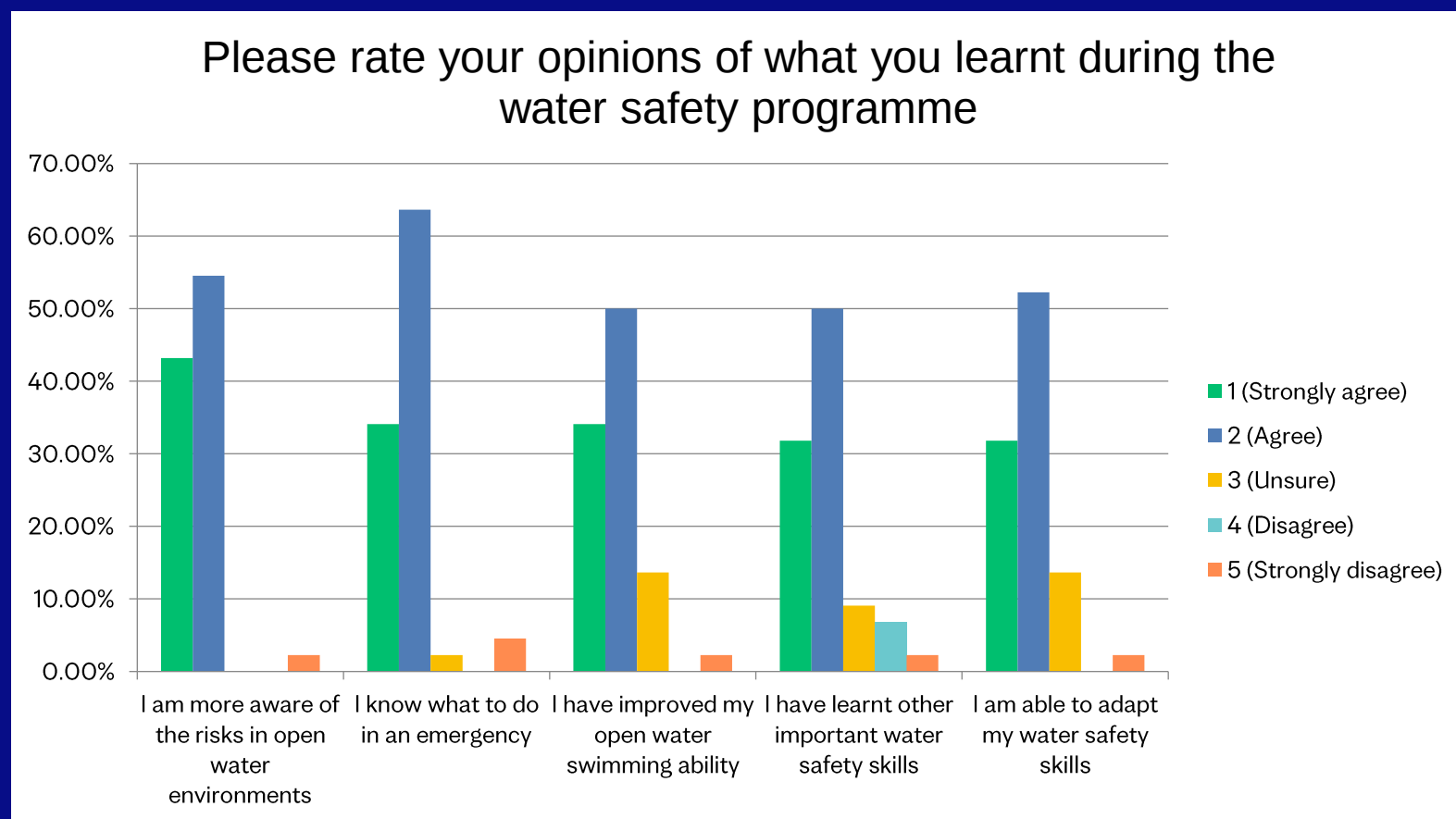
- Predicted engagement in open water $\approx$ similar/small increases in frequency



University
of Otago
ŌTĀKOU WHAKAIHU WAKA

Survey Results – children & parents

After programme



- After the programme most children felt that they had learnt important knowledge and several skills



University
of Otago
ŌTĀKOU WHAKAIHU WAKA

What was the most important thing you learnt?

crossing rivers how to cross rivers
 stay safe obstacles in rivers dont stand in river
 dont swim under tree don't stand in river
 make good decisions identify a rip
 safely cross a river safe to cross river?
 emergency flares
 dont stand in rapids identify rips
 mayday call on radio avoid white rapids
 exit boat safely river safety
 wear a life jacket coping in currents avoid rocks in river
 swimming and help keep myself safe
 throw bag huddle arm help signal
 stay safe in water wear a wetsuit river practical
 huddle to stay warm hidden objects help signal
 what to do in a rip using flares stay calm
 feet first in river identify hazards
 survival position backwards stroke
 act safely in a rip

Challenges



- Inexperience teaching in open water environments
- Recruiting rurally remote children and families with low socioeconomic status
- Logistics and cost of transporting children to and from venues
- Weather-dependent
- Time and risk management
- Keeping children (and staff) warm and on-task
- Ongoing funding

Benefits

- Educators felt experience was valuable for all
- Extending skills learnt in pool
- Better understanding of risks and what to do in emergency
- Children seemed engaged / had fun
- Social connections strong



Benefits – example quote

“I honestly thought it was one of the best things ever.... I really loved the way that it was structured with the first two days in the pool, getting a lot of theory and the like in that safe place before we took them out. I think that gave them a lot of confidence.

... And I think it was really nice, having the same group for that amount of time for the whole week, because they really started to create these beautiful bonds that some of the strongest swimmers and weaker swimmers were looking after each other by the end of it, ...

... Getting them out into the real-world situations, and being able to put the knowledge and theory into practice, I think is invaluable.”

(Queenstown pool instructor)

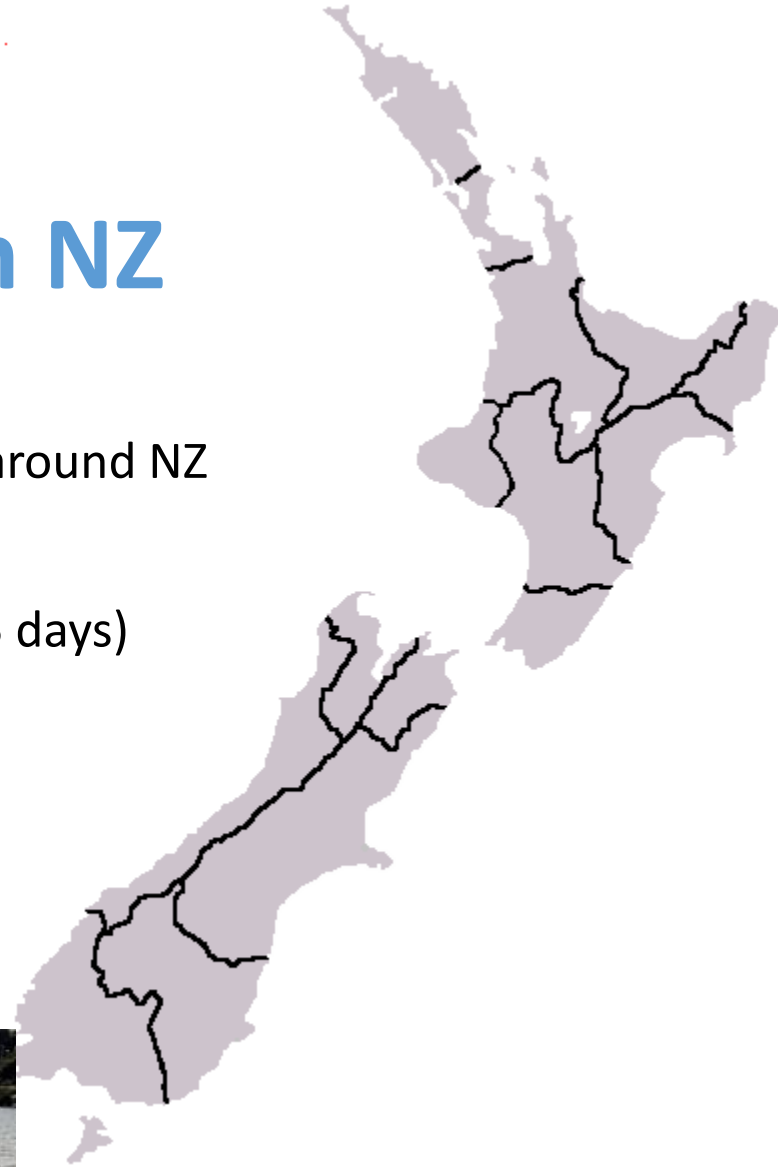


Our 'Utopia'

Future of Water Safety Education in NZ



- ≈ Each Summer, residential water safety camps held all around NZ
- ≈ Typically, families pay but could be subsidised
- ≈ Short condensed programmes (approx. 20 hrs over 3-5 days)
- ≈ Range of locations appropriate to region
- ≈ Collaborative network of educators
- ≈ Curriculum based on water skills for life competencies



References

1. Button, C., van Duijn, T., Cocker, K., Trotter-Dunn, G., & Seifert, L. (2023). Does a combined swimming pool and open water education programme for children develop adaptable water safety competencies? *Journal of Sport and Exercise Science*, 7(2), 18-28.
2. Button, C., Ng, J. L., Burnay, C., & van Duijn, T. (2022). Application of ecological dynamics principles to drowning prevention. *Asian Journal of Sport and Exercise Psychology*, 2(1), 59-66.
3. van Duijn, T., Cocker, K., Seifert, L., & Button, C. (2022). Assessment of water safety competencies: Benefits and caveats of testing in open water. *Front Psychol*, 13, 982480. <https://doi.org/10.3389/fpsyg.2022.982480>
4. Button, C., Button, A. J., Jackson, A.-M., Cotter, J. D., & Maraj, B. (2020). Teaching foundational aquatic skills to children in open water environments. *International Journal of Aquatic Research and Education*, 13(1), 1.
5. Button, C., Seifert, L., Chow, J.-Y., Araújo, D., & Davids, K. (2020). *Dynamics of Skill Acquisition: An Ecological Dynamics perspective. 2nd Edition*. Human Kinetics, Champaign, Illinois.

Does a combined swimming pool and open water education programme for children develop adaptable water safety competencies?

Chris Button^{1*}, Tina van Duijn^{1,2}, Kane Cocker¹, Gabrielle Trotter-Dunn¹, Ludovic Seifert^{1,4}

¹School of Physical Education, Sport and Exercise Sciences, University of Otago, New Zealand

²School of Sport, Exercise and Rehabilitation, University of Technology Sydney, Australia

³CETAPS UR3832, Faculty of Sport Sciences, University of Rouen Normandy, France

⁴Institut Universitaire de France (IUF), France

ARTICLE INFO

Received: 19.01.2023
Accepted: 19.05.2023
Online: 18.08.2023

Keywords:
Drowning
Environment
Skill
Transfer

ABSTRACT

Most learn-to-swim programmes are undertaken in one location (often a swimming pool), which is potentially less effective than learning across a range of aquatic places and contexts. Water safety education delivered in multiple environments may improve skill development and transfer. We investigated whether a combined pool and open water programme improves children's knowledge and skills. Sixty-six children (7–11 years old, 34 males, 32 females) participated, of which 40 undertook a 5-day education intervention (two days in a pool, one day each at a harbour, beach, river) and 26 were controls. The skills taught and assessed were: continuous 5-minute swimming, floating and treading water, underwater swimming, and a water safety quiz. Skill competency was assessed in a harbour before, immediately after, and approximately one month after the education programme. The number of children in the education group demonstrating high competency increased after the intervention (i.e., quiz = +20%, swim = +22%, floating/treading water = +17%, underwater swim = +19%). Furthermore, performance of the skills was generally improved when combined and adapted in a self-rescue transfer activity. The control group also improved in 3 out of 4 of the tasks, however their knowledge (quiz) performance decreased. Our findings indicate that teaching children water safety in several aquatic environments improved skill competency and transfer. Water safety education should be undertaken in a range of representative environments to promote skill transfer and thereby reduce the risk of drowning in open water. Education providers should consider opportunities to extend pool-based programmes to include exposure to open water environments.

