

Ten Simple Rules for Researchers: Upskilling for a Rapidly Evolving Workforce

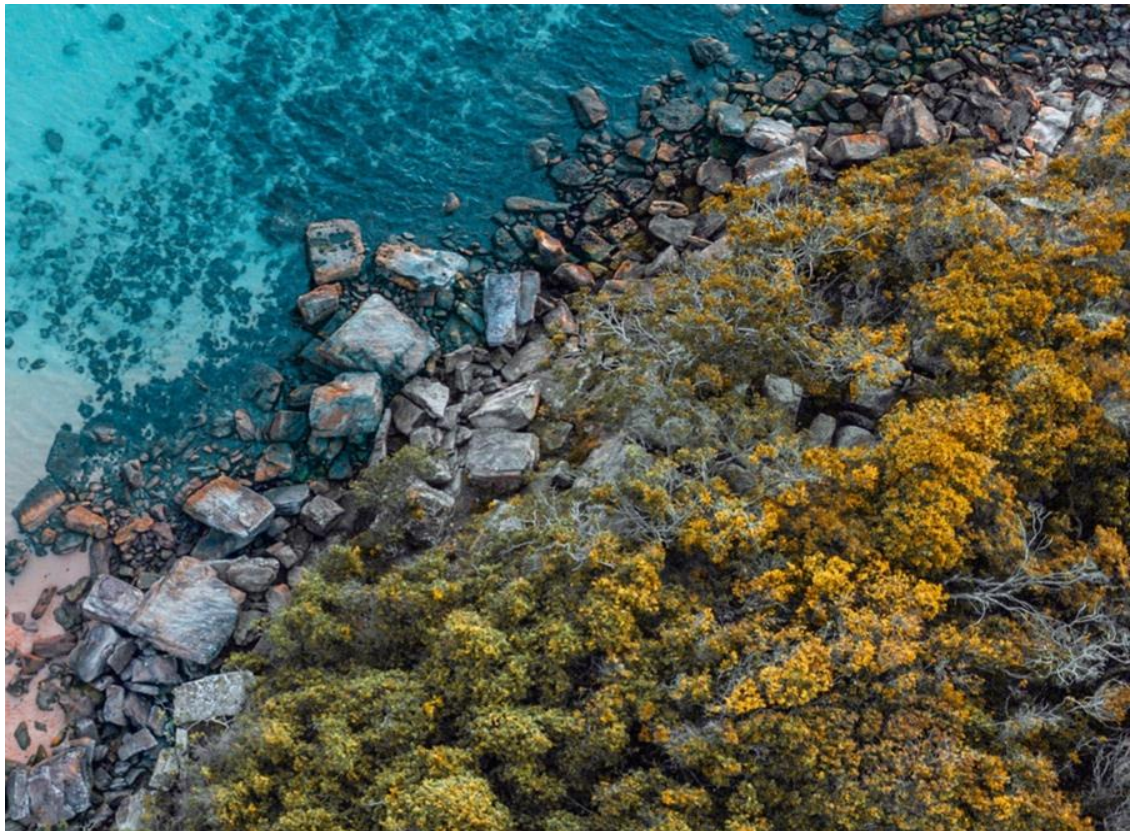
29 October 24

PRESENTED BY

Amany Gouda-Vossos
Meirian Lovelace-Tozer

ACKNOWLEDGEMENT OF COUNTRY

We acknowledge and celebrate the First Australians on whose traditional lands we meet, and we pay our respect to their elders past, present and emerging.



As we enter the *fourth research paradigm*, as evidenced by rapid advancements in the scientific methodology of **data-intensive practices**, upskilling the next generation of researchers is pivotal.

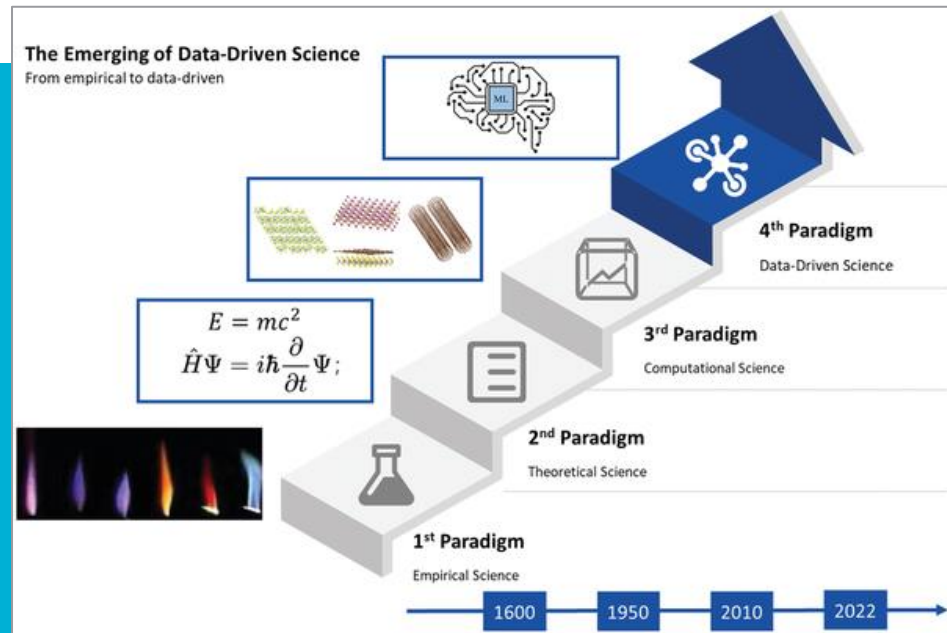
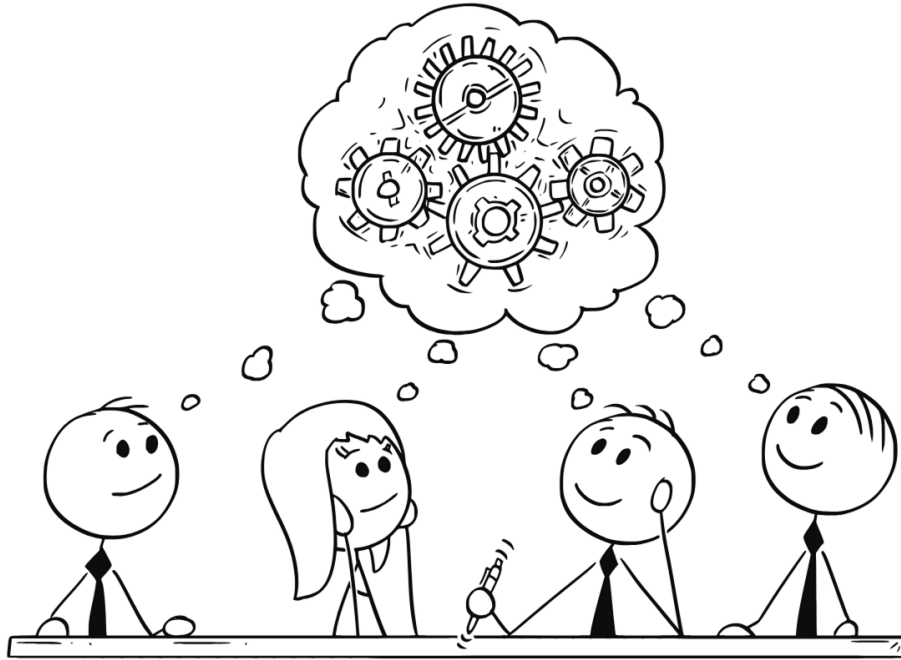
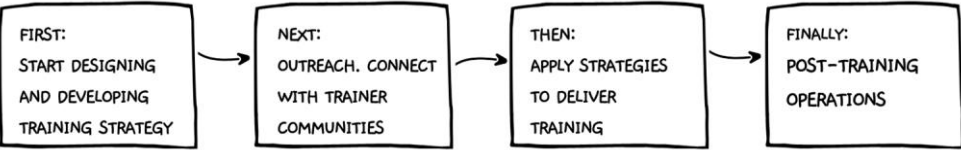


Figure 1: The four paradigms of science evolved across time. From: Wang, Zhuo, et al. "Data-Driven Materials Innovation and Applications." *Advanced Materials* 34.36 (2022): 2104113.



Short Format Training (SFT)

refers to a non-formal workshop, short course, boot camp, or similar, that teaches skills and knowledge over a brief period, usually hours, days, or weeks.



The 10 simple rules

were inspired by the ARDC Digital Research Skills Summit 2023.

Productive discussions between researchers, learning designers, skills trainers, and librarians.

Hybrid Concurrent

- Transmissive lecture
- On-screen demonstration
- Hands-on demonstration & activities

Hybrid adaptive design

- Synchronous
- Asynchronous

Instructor-Led Training

- One-on-one
- Small groups
- Lectures
- Workshops



IN-PERSON



HYBRID



ONLINE

e-learning

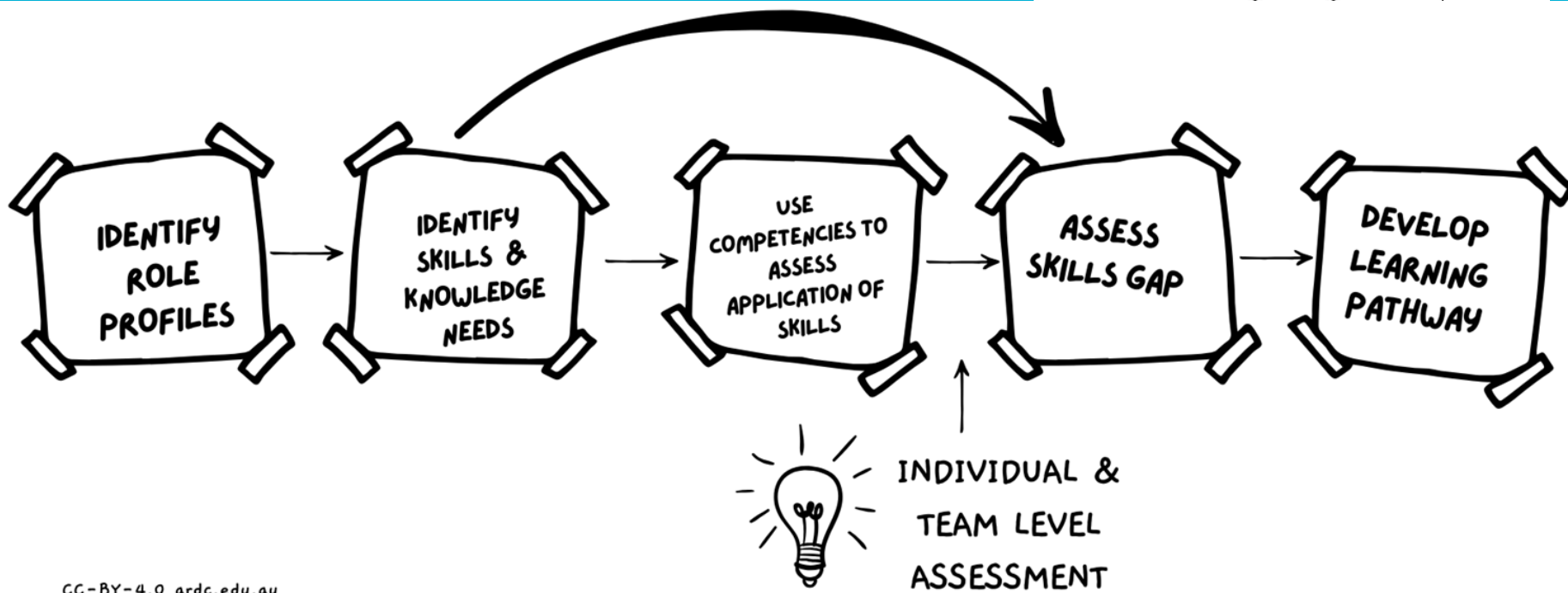
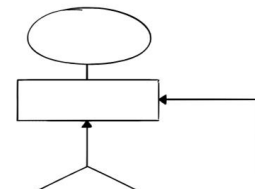
- Interactive modules
- Videos/podcasts
- Slideshows
- Documents

Virtual Instructor-Led training

- Webinar
- Workshops
- Lectures

How should I deliver training?

RULE 2: USE FRAMEWORKS



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RULE 3: HARNESS EXISTING RESOURCES AND EXPERTISE



<https://dresa.org.au>

effectiveness.



QLD: 6–7 November 2024

ardc.edu.au/event/resbaz-queensland-2024

VIC: 26–28 November 2024

ardc.edu.au/event/resbaz-victoria-2024

NECT

RULE 4: CONNECT WITH TRAINER COMMUNITIES



THE CARPENTRIES

A global community with a mission to teach foundational computational and data science skills.

<https://ardc.edu.au/project/australian-n-carpentries-network>

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A global organisation promoting gender diversity and inclusivity within the R community.

<https://rladies.org>

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RULE 5: SYSTEMATICALLY MANAGE LOGISTICS

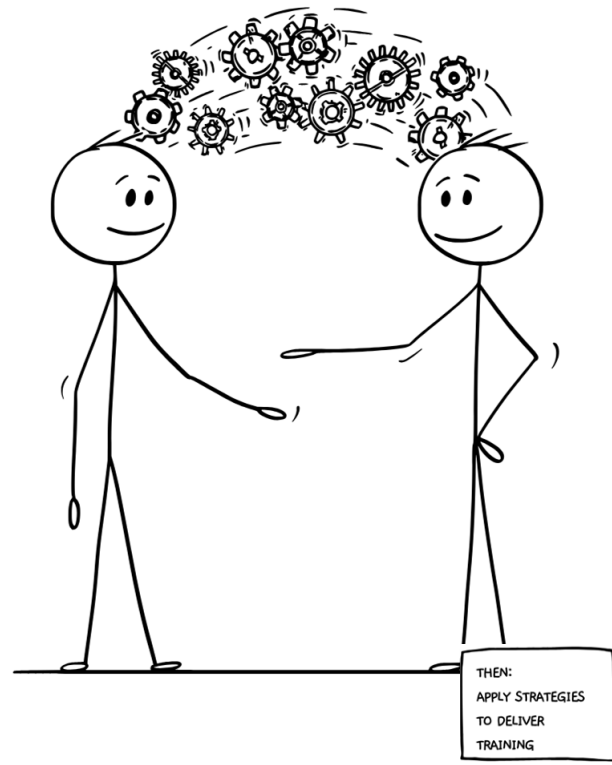
To effectively manage short format training, and determine how it will be delivered, it is helpful to consider:

- Systems compatibility and integration
- Requisite skills and knowledge
- Communicating with registrants
- Accessibility
- Training evaluation



RULE 6: ENGAGE LEARNERS

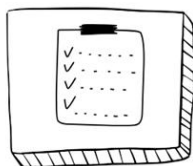
Communication with learners is crucial to retain interest and transfer knowledge and skills to ensure maximum value and participation. An impactful trainer keeps their learners engaged through several pedagogical techniques within the classroom.



RULE 7: ASSESS & EVALUATE

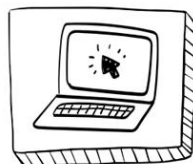


EVALUATION PROCESS



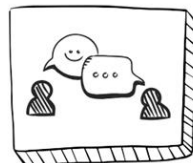
ON THE DAY

Seek immediate feedback



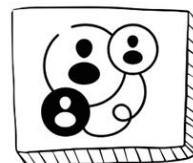
THE DAY AFTER

Include post-training feedback survey



1-2 WEEKS AFTER

Offer Q&A sessions to assist learners with any queries



3 MONTHS AFTER

Send follow-up survey to measure implementation of new skills or knowledge



NEXT SESSION

Utilise feedback to inform next session

THEN:
APPLY STRATEGIES
TO DELIVER
TRAINING

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RULE 8: PREPARE FOR TRAINER TURNOVER

Turnover poses risks to the capacity to deliver quality SFT. Succession planning is vital to ensure program sustainability.

Attendees' insights at the ARDC Digital Research Skills Summit 2023, resulted in strategies to increase trainer satisfaction, and plan for succession.



RULE 9: PREPARE TO SCALE

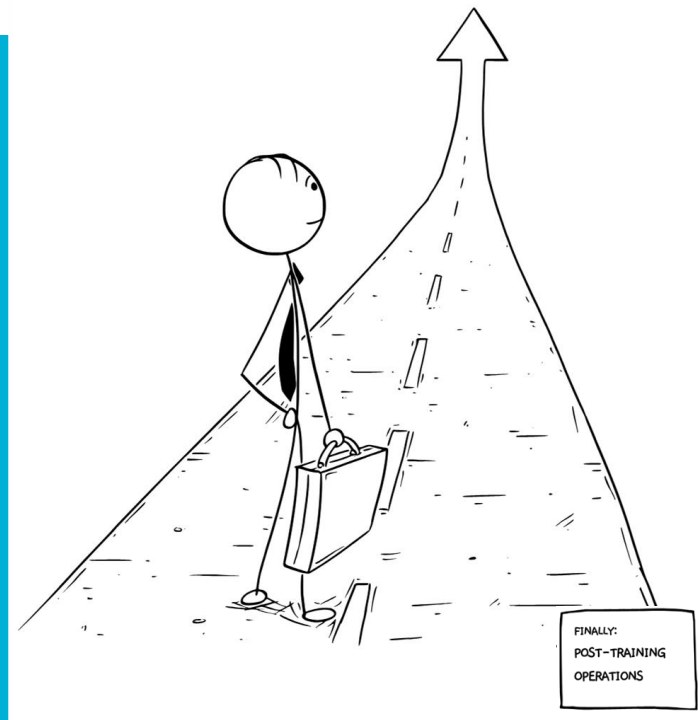
What happens when training experiences high demand, trainers reach capacity, or organisations request replication of successful SFT?

Scaling entails growing the number of trainers and investing in other training modalities that support self-directed or peer learning.



RULE 10: RECOGNISE TRAINING SPANS CAREERS

Training is not complete once the session has been delivered, and this is particularly true within the workforce. At the ARDC Digital Research Skills Summit 2023, attendees identified the importance of recognising a 'vision for future success' when upskilling researchers.



CONCLUSIONS - TAKEAWAYS



<https://zenodo.org/records/13989494>

Develop learner-centred
training programs

Foster outreach and build
community

Tips to manage and optimise
training

Prepare for uncertainty, post-
training operations and
continued learning

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- Liz Stokes
- Kathryn Unsworth
- Adeline Wong

Thank you all!

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