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Ten Simple Rules for Researchers Training the Rapidly Evolving Workforce

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We are entering the fourth research paradigm following the digital revolution, which is evidenced by rapid advancements in the scientific methodology of data-intensive practices. Upskilling the next generation of the research workforce is pivotal. Further, discipline-specific advancements highlight the importance of researchers acquiring new skills to meet evolving demands.

Researchers are likely to assist others in learning new skills, from computational tools to different data analysis methods. This knowledge transfer often happens organically and informally through mentorship and collegiality, but a more structured approach would be vastly beneficial and impactful to those needing to upskill. When organising a skills event for others, researchers may require guidance on where to begin.

Short-format training (SFT) provides a quick and efficient medium to address needs and gaps in data skills, especially for the modern workforce. An SFT refers to a non-formal workshop, short course, boot camp, or similar, that teaches skills and knowledge over a brief period. A study led by Williams (2023) called to make SFT more reliable, effective, inclusive, and career-spanning in the face of rapid technological changes.

Recommendations for effective SFT development were inspired by productive discussions at the Australian Research Data Commons (ARDC) Digital Research Skills Summit. The Skills Summit brought together researchers, learning designers, skills trainers, and librarians. Attendees collaboratively formulated innovative, effective, and transferable strategies to increase data literacy in researchers, applicable to all research disciplines. These recommendations were curated into ten simple rules by the Skilled Workforce Development Team at ARDC. For the full list visit: <https://eresearch.ch/10sr>.

Our ten simple rules provide a streamlined workflow to assist in developing SFT for researchers who train the research workforce. These rules outline how to think about skills learning for researchers, plan training sessions, and efficiently maximise learning. We offer recommendations on how to design and develop learner-centered training programs, foster outreach, and connect with trainer communities. We then provide tips to manage and optimise training, and conclude with valuable insights on preparing for uncertainty and the importance of post-training operations and continued learning.

Primary authors: Dr GOUDA-VOSSOS, Amany (Australian Research Data Commons); LOVELACE-TOZER, Meirian (Australian Research Data Commons (ARDC))

Co-authors: WONG, Adeline (Australian Research Data Commons); LYRTZIS, Ellen (Australian Research Data Commons (ARDC)); GREENHILL, Kathryn (Australian Research Data Commons); UNSWORTH, Kathryn (Australian Research Data Commons (ARDC)); STOKES, Liz (Australian Research Data Commons); CLEMENS, Rob (Australian Research Data Commons)

Presenters: Dr GOUDA-VOSSOS, Amany (Australian Research Data Commons); LOVELACE-TOZER, Meirian (Australian Research Data Commons (ARDC))

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