How Meteorologists Learn to Forecast the Weather

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Why Study Forecaster Learning?

- To understand how forecasters develop their skills
- To enhance training and support for new forecasters
- To improve decision-making in weather forecasting

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Three Paths to Learning

1. Building a Diet: Strong Support From Experienced Forecasters

   - Stronger learning
   - Error minimization
   - Ability to make quick decisions on the job
   - Learning is relatively fast

   - Self-assessment rather than being evaluative

   - No feedback

   - No learning directly taking up too much of the forecaster’s time

2. Seeking Help: The Benefit of Social Learning

   - Learning in formal courses was helpful but not organized for use.
   - Forecasters learned how to think about the weather and how to effectively use data from other forecasters.

   - Forecasters were happier, and their knowledge deeper and better connected if they had good social support.

   - A strong sense of professional identity led to better learning, particularly when forecasters were poorly supported and used to create strategies to learn.

3. Create Strategy: Often On-Your-Own Case-by-Case

   - Forecasters: most supported by peers
   - Declarative actions described as controlled by them
   - Learning is not overly dependent on a single person or strategy
   - Forecasters had to manage their time and other responsibilities
   - Effort must always mean data and change and self-learning

Summary

- Forecasters were happier, and their knowledge deeper and better connected if they had good social support.

   - A strong sense of professional identity led to better learning.

   - Particularly when forecasters were poorly supported and had to create strategies to learn.

Other Findings

- Entry to the Profession

  - No learning at the NWS

- Triggers for Learning by Career Stage

  - Experience

    - Junior
    - Mid-level
    - Senior

- Progression of Understanding