

## MARINE BIOTECHNOLOGY AND BIOINFORMATICS

From Jetty to Web: Teachers Learning While Doing  
Cutting Edge Science

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## **Benefits of Participation:**

- Teachers obtain:
  - IT skills and content
  - increased comfort, proficiency with applied IT
  - a standard-based curriculum
  - help in classroom implementation
  - information on related career paths
  - an immersion experience in the science of biotechnology and bioinformatics

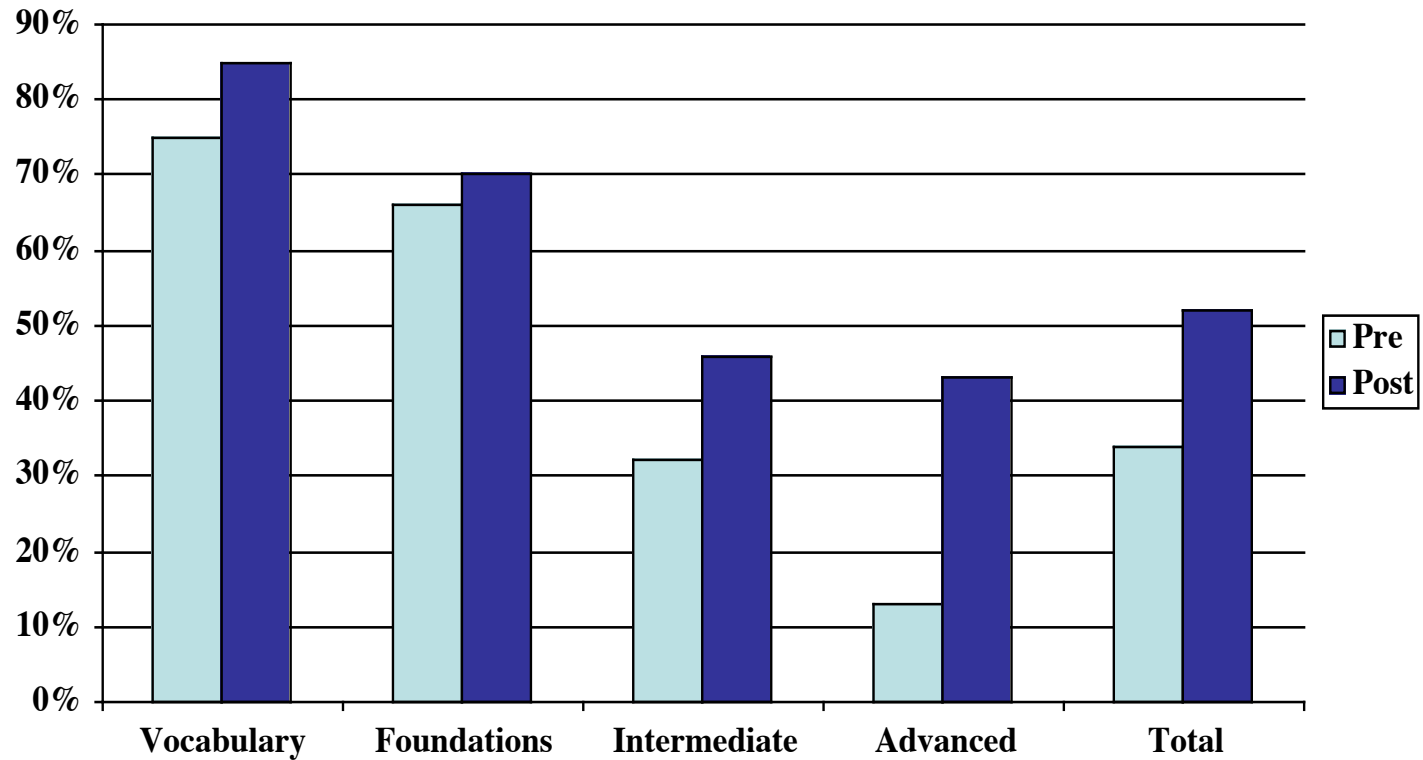
## Evaluation Activities & Instruments\*

- Evaluation Pre/Post Survey\*
- Content Pre/Post Test\*
- Weekly Feedback\*
- Summative Narrative Feedback\*
- Weekly observation and feedback
- Discussions with participants
- Classroom visits and observation
- Individual interviews of PIs, TAs\*

# The Content Pre/Post Test

Assessed four domains: vocabulary, foundations, intermediate and advanced topics

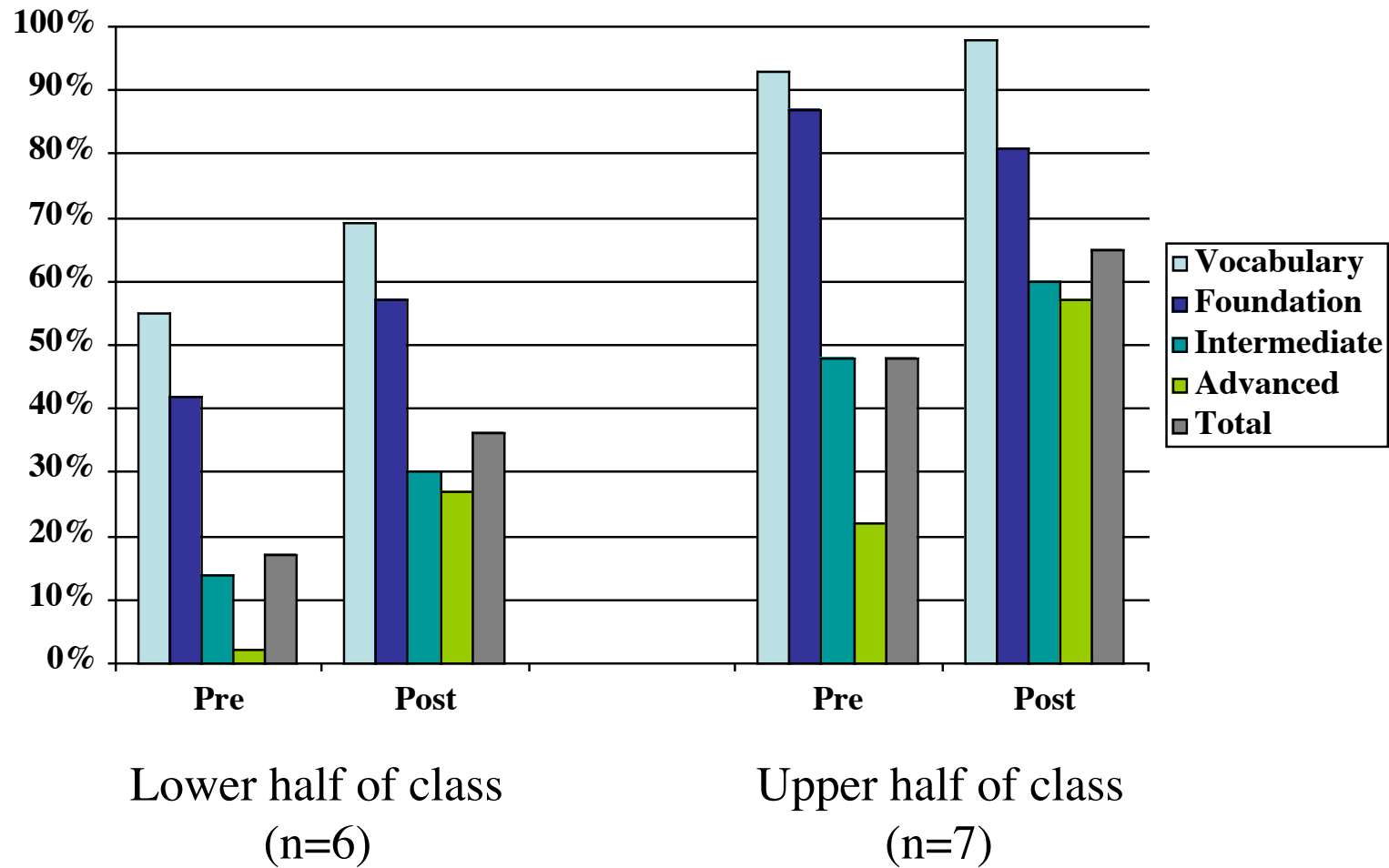
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Cohort 2 participants' scores were comparable at pretest and posttest to those of Cohort 1 participants in each domain of the content assessment, and overall.

## Participants substantially increased their content knowledge.

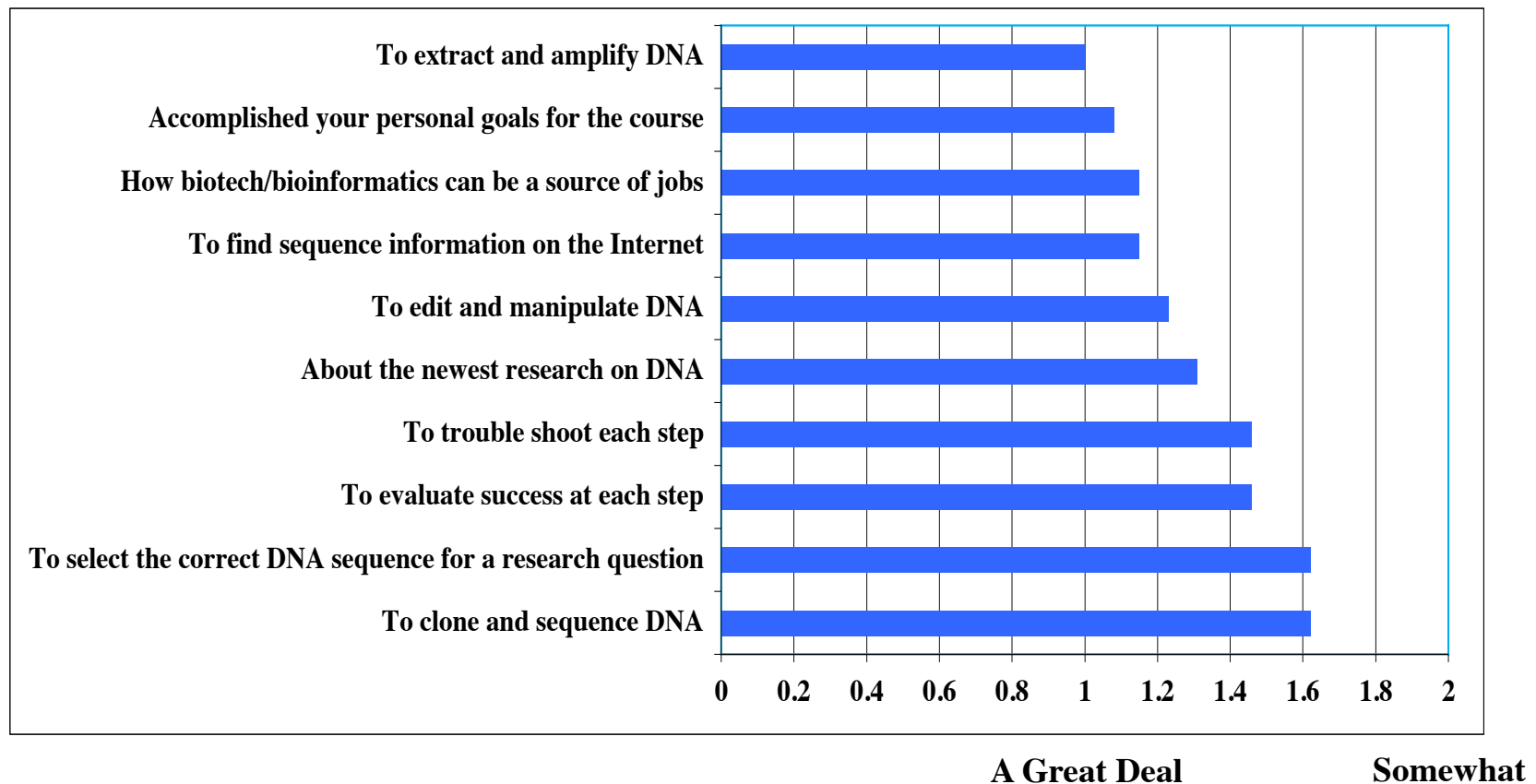
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## How much did you learn about each topic?

Participants\* learned “a great deal” about topics and jobs in biotechnology and bioinformatics.

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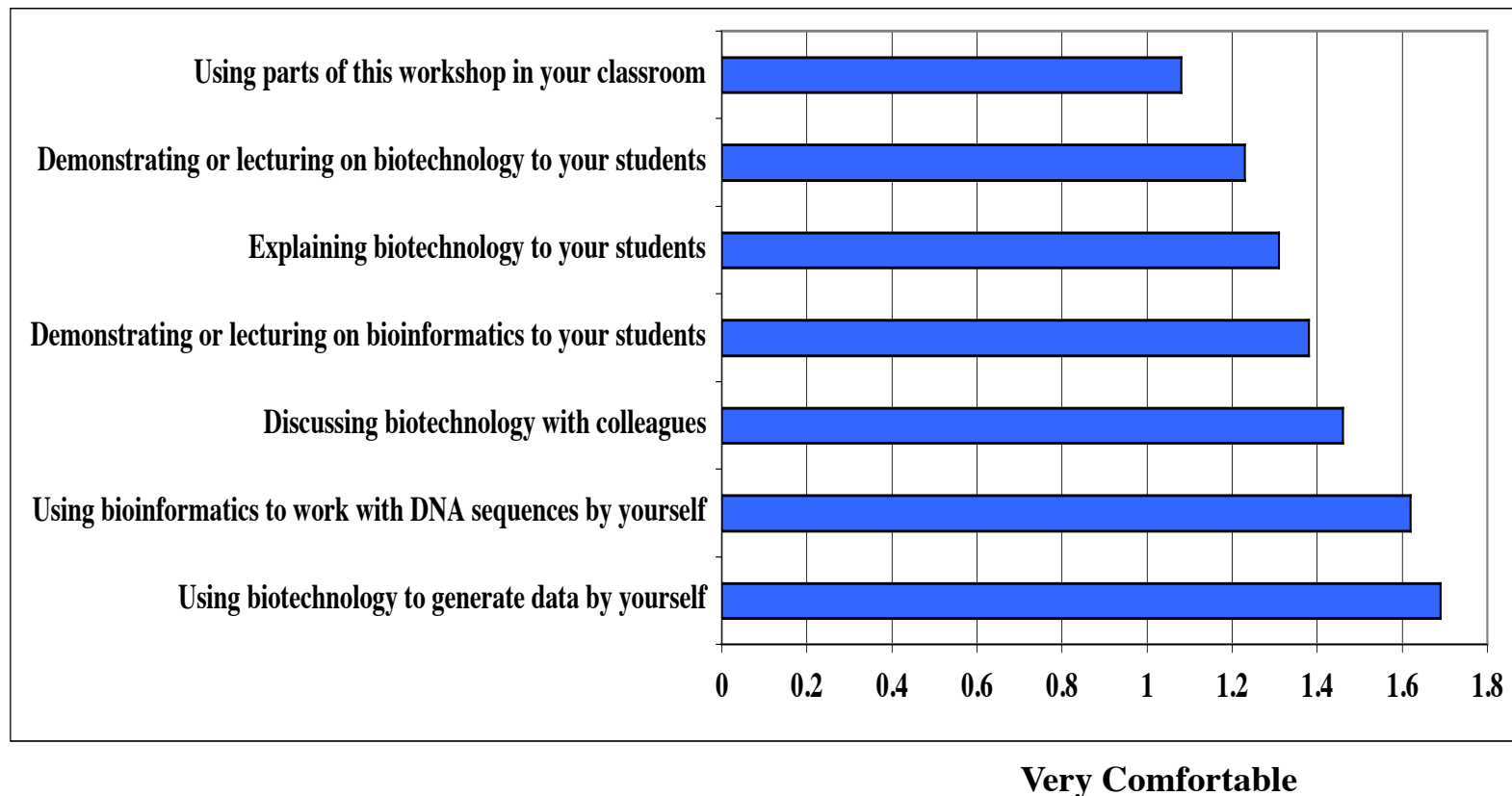


\*n=13. 15 questions, 1=A Great Deal - 3= Not at All, Grand Mean 1.36, s.d. 0.27

## How comfortable do you feel with each of the following?

Participants\* were very comfortable using parts of the workshop in their classroom and were more comfortable with biotechnology than with bioinformatics.

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\*n=13, 7 questions, 1= Very Comfortable - 4=Very Uncomfortable, Grand Mean 1.40, s.d. 0.21

## Lessons Learned During the Second Workshop

- **First-time Participants:**
  - Found the workshop challenging, in part because of cultural differences between schools and science.
  - Increased their biotech/bioinformatics information, skills and confidence, an essential precursor to classroom implementation.
  - Chose MBBT **because** it offered the opportunity to address a novel scientific question.
  - Needed more time during the workshop to adapt scientific content and methods to classroom realities.
  - Wanted more information about biotech careers, especially for pre-BA and BA graduates.
- **Returning Participants:**
  - Strengthened their content understanding and mastery, created lesson plans, and tested them with students.
- **Instructors:**
  - Incorporated recommendations from year 1 evaluation.
  - Encountered new organizational challenges due to group size and even wider range of teaching and scientific experience.
  - Successfully used classroom biotechnology kits to introduce and/or refresh skills and content.