

# Examining the Effectiveness of a Principles of Biology Laboratory Course, According to Vision & Change and MCAT Standards

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## Method

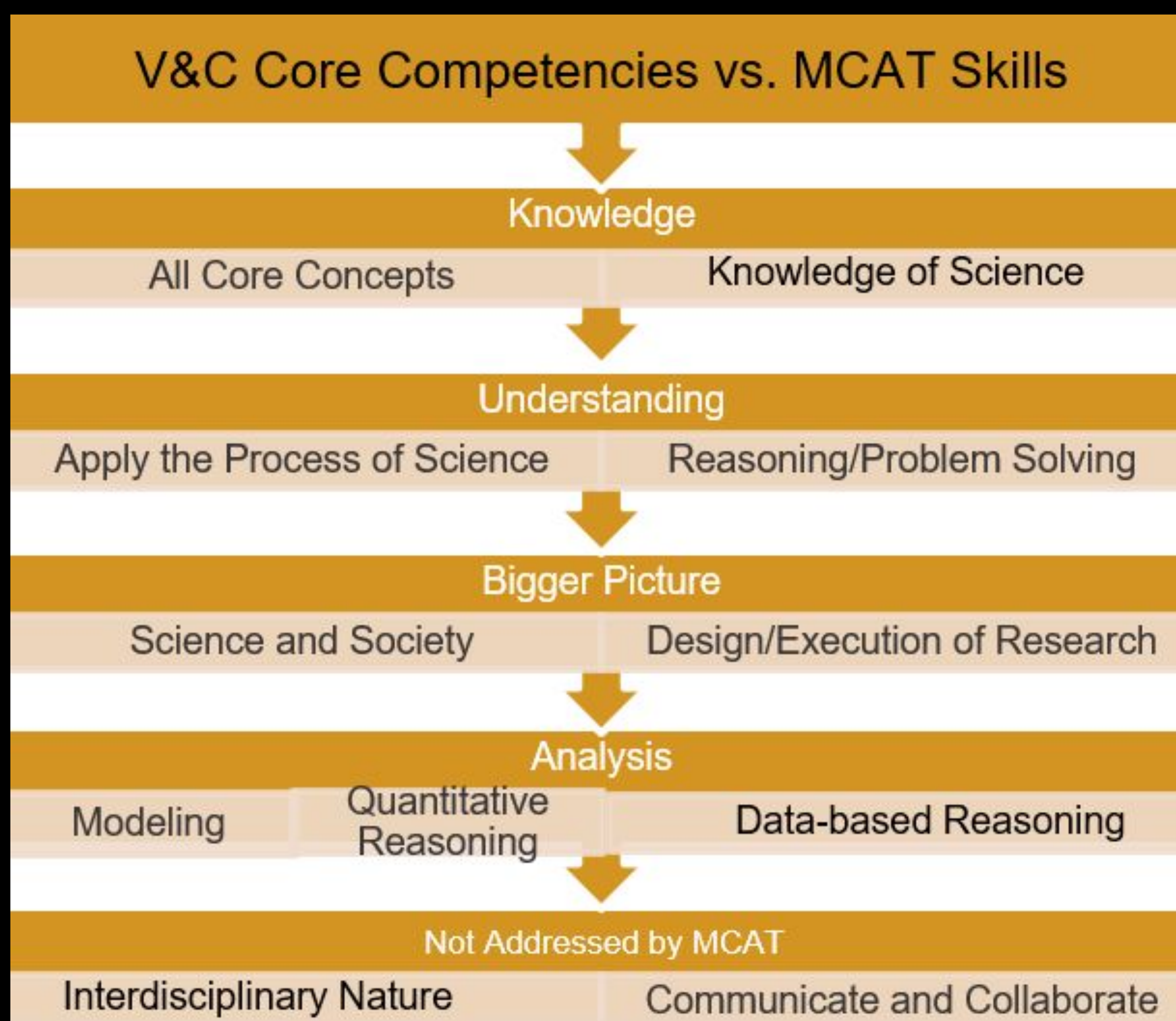
Qualitative analysis

- V&C Overlap with MCAT
- Lab curriculum

Nonexperimental, quantitative surveys  
Convenience sample of students who have completed the course

- Confidence
  - 1, 2, 3 years removed
- Ability (Future Research)
  - Before/After
- Comparison (Future Research)
  - Other colleges

## Results



## Introduction

AAAS 2009 Vision & Change Conference

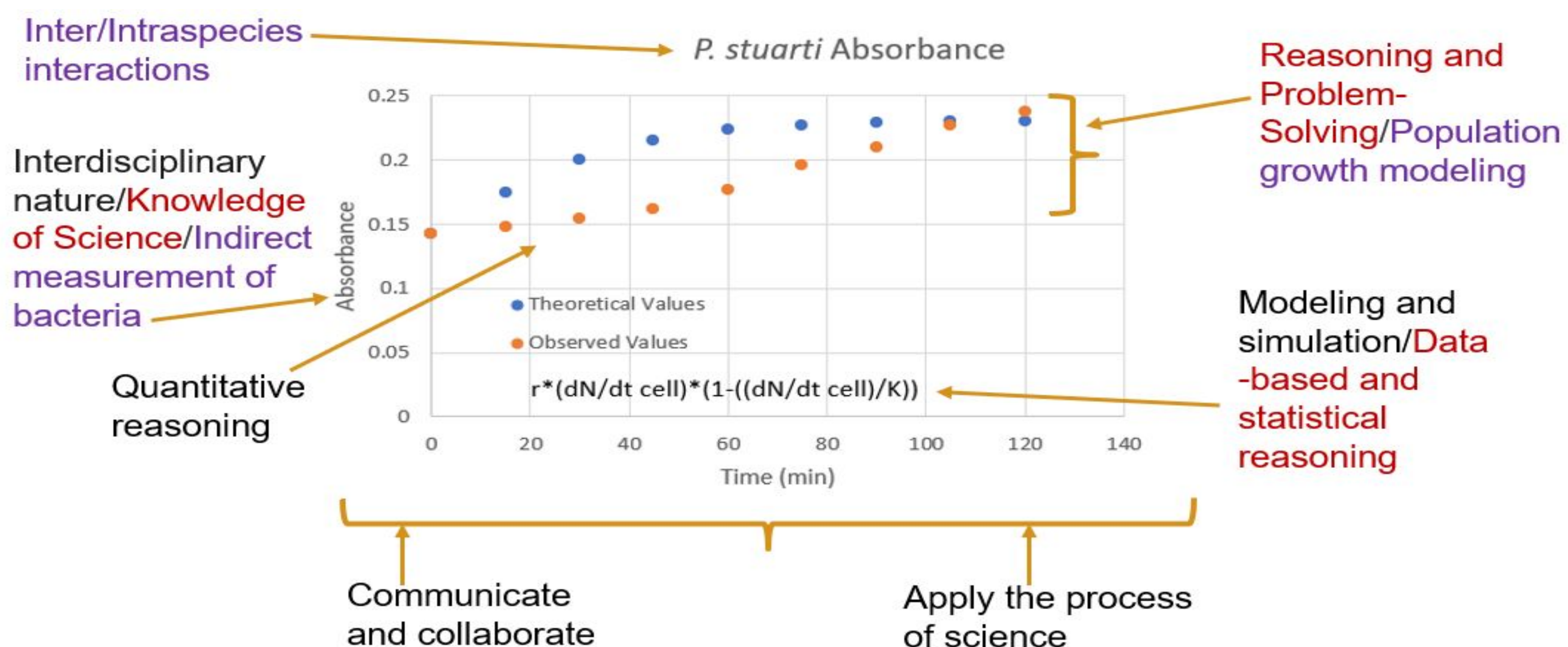
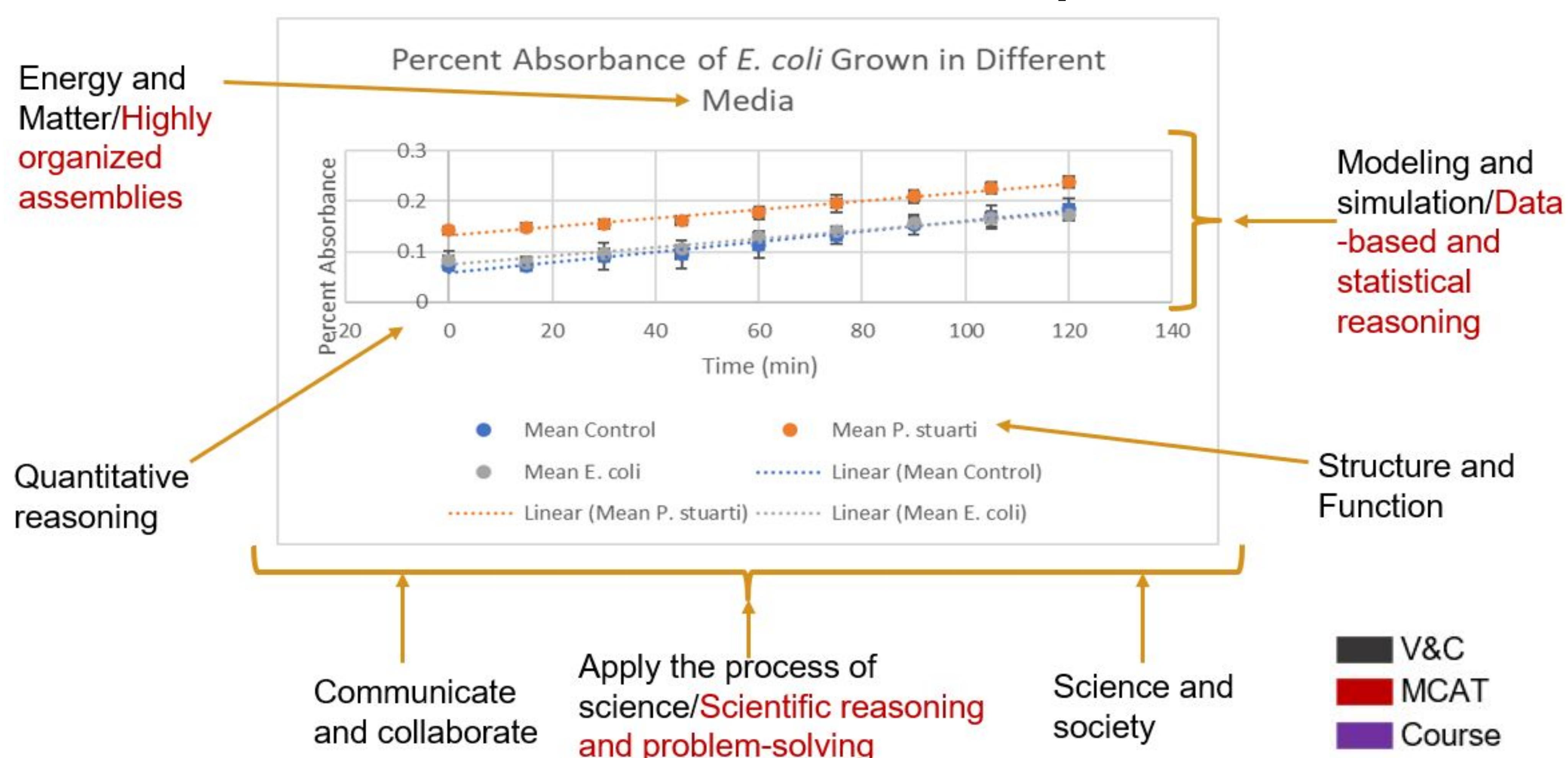
- Concluded biology is too broad
- Identified 5 core concepts/6 core competencies

AAMC MCAT

- Test for medical school
- 65% of biology section is general
- Over 1/2 of pre-meds are biology majors
- Identified 4 Skills/3 Foundational Concepts

| V&C Core Concepts and Equivalent MCAT Foundational Concepts |                                |
|---|--------------------------------|
| Evolution   | N/A                            |
| Transformations of Energy and Matter                        | Biomolecules are unique...     |
| Information flow, exchange, and storage                     |                                |
| Structure and Function                                      | Highly Organized Assemblies... |
| Systems   | Complex Systems...             |

## Bacterial interactions lab is an example of ...



Future directions: does it work?

(2020). What's on the MCAT® Exam? AAMC. <https://students-residents.aamc.org/media/2261/download>

Brewer, C., & Smith, D. (2011). *Vision and change in undergraduate biology education: a call to action*. American Association for the Advancement of Science (pp. 1–100).

<https://live.visionandchange.nhanthosite.io/wp-content/uploads/2013/11/aaas-VISchange-web1113.pdf>

