

Description for presentation:

We will review the eight key elements of a High Impact Practices assignment, and then discuss HIPs classroom successes and challenges as well as work together to discuss and/or improve current assignments. We hope this presentation will increase collaboration of faculty, help faculty increase community involvement, and create/improve engaging math assignments that students can apply to their future classes and careers.

HIPs in and Beyond the Math Classroom

ColoMatyc April 19th, 2024

By: Ruth Thompson and Tracy White

Agenda

- Welcome
 - Ruth Thompson, Colorado Mountain College
 - Tracy White, Colorado Mountain College
 - Your Introduction
- What are HIPs?
- Why HIPs?
- How are you doing HIPs?
- Share successes
- How can we support each other?

Which statement best describes your familiarity with HIPs?

I'm a total pro!

I'm familiar with HIPs,
but I'm no expert.

I'm familiar, but I need
some more time to learn.

I think I know what they
are.

HIPs?

What are High Impact Practices?

Teaching strategies that help students learn deeply and succeed in college and career.

11 High Impact Practices:

Service Learning

Collaborative Projects

Undergraduate Research (UR)

Writing Intensive

Diversity Global Learning

Common Intellectual Experiences (CIE)

First Year Experience (FYE)

Learning Communities (LC)

Capstone Projects

Internships

ePortfolios

Moving beyond
the list:

Emerging HIPs
& other
evidence-based
practices

Top 11 Commonly Cited High Impact Practices



The 8 Elements



Challenge

a project, leadership,
agency



Time

multiple steps, 4-6
weeks



Interactive

discussing, deciding,
processing with others



New Situations

learning from
unfamiliar
people/situations



Feedback

from peers, faculty,
community, informal/formal,
non-verbal, oral, written



Reflection

prognosticate,
connect to prior
learning, review,
reflect



Real World

outside of class,
applied learning to a
real situation



Public

share learning beyond
class

Identify Your HIPs

Why HIPs?



We'd Love
to Hear
from You

A Question to get us started:

What's the one thing you want to get to work on today?

- Classroom HIP Assignment
- Departmental Implementation of HIPs
- Scaling HIPs at my institution
- Improving Quality of HIPs offerings
- Collaborating with Others
- Time-line and grading
- Other?

What HIPs Do for Students

- Improve student success for all students
- Closing achievement and opportunity gaps
- Professional skills

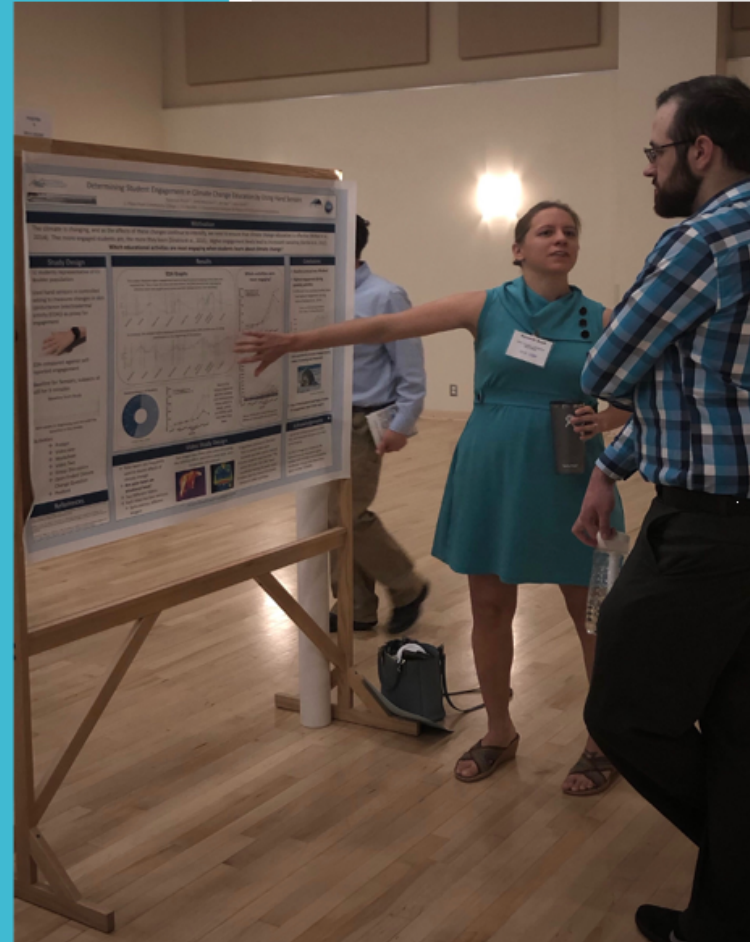
Students rise to a challenge

Students learn from others

Students improve performance

Students apply learning to real situations

Undergraduate Research Student Conference





Tell us why you want to use HIPs?

Successes in HIPs

- Alec's paper
- Mental Health of Students
- Connecting to community
- Other successes?

So, we've established that in order [redacted] we must educate

ourselves in those subjects which are included under the umbrella of the liberal arts, which does

[redacted] furthermore, if learning the truth about the way things are is so important,

then the science of mathematics is a good candidate for a place to start because one simple way

of thinking about the admittedly difficult question of what mathematics is about is to consider

the fact that mathematics is essentially the rule book that the universe obeys. Another common

way to state this fact is to say that mathematics is the language of the universe, or the language

upon which all of the natural sciences depend. In more complex terms [redacted]

[redacted] investigates the fundamental structural and quantitative [redacted]

[redacted] is a subject matter that is possible entirely thanks to the human capacity to partake in

abstraction, which is the process by which we can consider essential truths about things without

College Algebra

What Do You Learn in College Algebra at Colorado Mtn.?

This course focuses on a variety of functions and the exploration of their graphs

Topics Include:

Graphing Utilities

Linear, Rational, & Quadratic Equations

Absolute Values

Parent Functions & Inverse Functions

Factor Theorems

Logarithmic Functions

Exponential Growth and Decay

This course provides essential skills for Science, Technology, Engineering, and Math Pathways

Dr. Diego Sandoval, Ph.D., C. H. Bernal Center

In Real Life

Real World Examples

Business and Management

A lot of people who study math, more specifically algebra at a college level are planning to get a business degree. Business and Management is something that usually requires knowing how to solve mathematical expressions with variables. Especially those in accounting, engineering, economics, and of course mathematics majors. College algebra provides fundamental skills and understanding and is crucial for a Business Degree. You need a lot of skills and knowledge for a degree and a successful career.

These Being

- Financial Management
- Business Analytics
- Quantitative Analysis
- Economic Modeling/Understanding
- Operations/Financial Management

Mental Health

Math is something that can help mental health because of:

- Cognitive Simulation
- Logical Thinking
- Problem Solving Skills
- Community & Support Building
- Mindful Focus

College Algebra has shown us that if we improve logical thinking and reasoning skills, these skills are not only valuable in math, but also in everyday life. Being able to think logically and make informed decisions can reduce anxiety and improve overall mental health. Learning algebra can be a social activity, through group study sessions, online forums, or in a classroom. Building a community of like-minded people can provide a sense of belonging, reduce feelings of isolation.

Personal Financing and Banking

Math and algebra is a skill that can allow people to handle and situate their personal finances. By applying algebraic concepts and equations to your personal finances, you can make more informed decisions. Set achievable financial goals, and take control of your money. It is essential to have a good understanding of algebra and financial concepts. Algebra enables you to create financial models and relations that consider various factors like inflation, future income growth and changes in expenses. By applying algebra, you can calculate compound interest, rate of return, and future values of investments.

Try It Yourself!

What bank would you like to invest at?

Alpine	Compounds every 6 months (semi-annually)
	Minimum 1000 dollar deposit Rate of 5%
First Bank	Compounds annually (once a year)
	Minimum of 100 dollar deposit Rate of 0.04%
Wells Fargo	Daily Compound
	Minimum of 500 dollars / \$ dollar service fee monthly Rate of 0.15%

Solve (Fill in Blanks)

You invest _____ at a rate of _____ compounded _____. How much \$ after _____ years?

How much \$ will you have in your account if you invest _____ at a rate of _____ continuously after _____ years?
USING

$$A = P(1 + \frac{r}{n})^{nt} \text{ OR } A = Pe^{rt}$$

Which one would you pick?

level are planning to get a business degree. Business and or Management is something that crucially requires knowing how to solve mathematical expressions with variables. Especially those in accounting, engineering, economics, and of course mathematics majors. College algebra provides fundamental skills and understanding and is crucial for a Business Degree. You need a lot of skills and knowledge for a degree and a successful career.

These Being

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- Economic Modeling / Understanding
- Business Analytics
- Operation / Market Management
- Quantitative Analysis

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Personal Financing and Banking

What successes have you had?

Projects already created

- Axelle's Stats HIPs 
- Ruth's Real-World HIPs 
- Tracy's HIPs 
- Other HIPs shared 

How do we do HIPs?

- How do we reach as many students as possible?
- How do we sustain momentum?
- How do we maintain fidelity?

Challenges in HIPs

- **Follow through/grading**
- **Students not wanting to present**
- **Coming up with rigorous math**
- **Other challenges?**

Challenges?

We'd Love to Hear from You

- Ruth Thompson rlthompson@coloradomtn.edu
- Tracy White twhite@coloradomtn.edu

A Final Question for You:

What's the one thing you want to get to work on?

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Next steps? How can we support and encourage each other?



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or HIPS MAT 13 component.doc roject~Tracy W