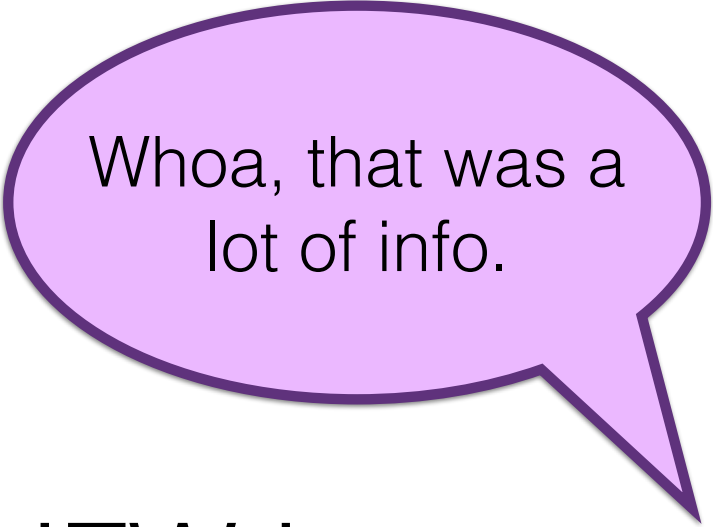




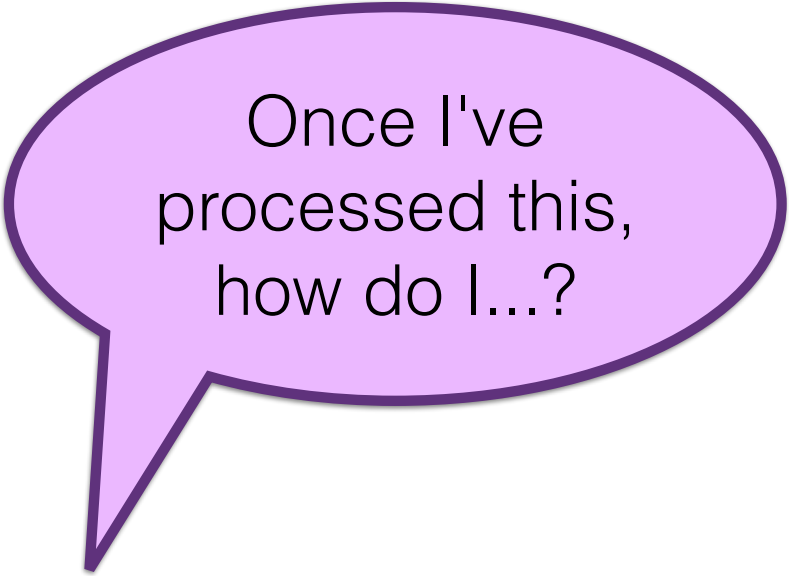
# Finding helpful information about teaching: PhysPort and ComPADRE

Sam McKagan

American Association of Physics Teachers



Whoa, that was a lot of info.



Once I've processed this, how do I...?

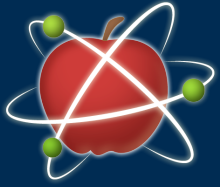
NFW is overwhelming.



I need ideas about...



I want to try...



# PhysPort

Supporting physics teaching with research-based resources

A web resource to support physics professors in using research-based teaching and assessment in their classes

[www.physport.org](http://www.physport.org)



Applied research into faculty needs  
Synthesis research into best practices  
Enable research into student learning



# You have questions about teaching.

How to best support students' learning?

How do you know if students are learning?

## PhysPort can help.

Find information and advice

Change your teaching

free

friendly

powerful

research-based

# PhysPort can help.

How to help students learn more?

Teaching method search

Open source curricula

Periscope video lessons

How do you know if students are learning?

Assessment method search

Data Explorer

Answering faculty questions

Expert Recommendations

Consultants' directory

# Teaching

physport.org/  
Teaching.cfm



## PhysPort

Supporting physics teaching with research-based resources

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[About Us](#) | [Contact Us](#)



Home


Expert Recommendations

Teaching

Assessment

Workshops

### Get Advice on Teaching and More

 [Where can I find good questions to use with clickers or Peer Instruction?](#)

 [How do I use PhET simulations in my physics class?](#)

 [How do I design a SCALE-UP classroom?](#)



More

### Get Teaching Materials

PhysPort hosts several collections of free open-source curricular materials for teaching Physics



Explore

### Find Research-Based Teaching Methods for Your Class

Our collection includes example materials and implementation resources for:

- Full curricula
- Curriculum supplements
- Strategies and techniques
- Tutorials and labs
- Computer simulations

#### Teaching Methods and Materials

Tell us about your course to find methods relevant to you.

Any Subject:  Any Level:  Any Setting:

Student Skills Developed  Any


- Conceptual understanding
- Problem-solving skills
- Lab skills
- Making real-world connections
- Using multiple representations
- Designing experiments
- Writing reviews
- Metacognition

Instructor Effort Required  Any

- Low
- Medium
- High


58 Research-Based Methods

**Peer Instruction**

 Small group discussion of conceptual questions interspersed with lecture, increasing engagement and providing formative feedback on student thinking.

Subject:  Level:  Setting:

**PhET Interactive Simulations**

 Open-ended game-like simulations that include expert visual models, enabling scientific-like exploration and real-world connections.

Subject:  Level:  Setting:



Browse

# Teaching methods

physport.org/  
methods

Which method should I choose?

How does it work?  
Where can I get it?

What else can I do?

## Teaching Methods and Materials

Tell us about your course to find methods relevant to you.

Any Subject

Any Level

Any Setting

Submit

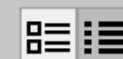
### Student Skills Developed ?

Any

- Conceptual understanding
- Problem-solving skills
- Lab skills
- Making real-world connections
- Using multiple representations
- Designing experiments
- Building models
- Metacognition

### Instructor Effort Required ?

### 57 Research-Based Methods



Sort by:

Popularity



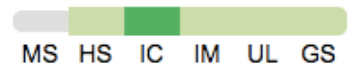
### Peer Instruction

Small group discussion of conceptual questions interspersed with lectures, increasing engagement and providing formative feedback on student thinking.

Subject



Level



Setting



# Teaching methods

[physport.org/  
methods](https://physport.org/methods)

Your questions:

- How can I find tutorials that I can use in a particular class setting and that are open source?
- Any tips or comments for implementing active learning activities like TPS for upper level Undergraduate courses or graduate level courses.
- Where can I learn more about how to implement this stuff?



# Curricula

[physport.org/  
curricula](https://physport.org/curricula)

Free research-based open-source curricula



The header of the PhysPort website features a dark blue background. On the left is the PhysPort logo, which includes a stylized atom icon and the text "PhysPort Supporting physics teaching with research-based resources". On the right, there are links for "Login | Register" and "About Us | Contact Us", along with the AAPT logo. A search bar with the placeholder text "Search PhysPort..." is also present. Below the header is a navigation menu with five blue buttons labeled "Home", "Expert Recommendations", "Teaching", "Assessment", and "Workshops".

Curricula

## Open-source curricula for research-based physics teaching

PhysPort hosts the following collections of open-source research-based curricula:

- [ACORN Physics Tutorials](#)
- [Adaptable Curricular Exercises for Quantum Mechanics](#)
- [Culturally Responsive Astronomy Lessons](#)
- [Just in Time Teaching \(JiTT\) Resources](#)
- [Maryland Open Source Tutorials](#)
- [Peer Instruction lecture series](#)
- [Physlets](#)
- [QuILTs \(Quantum Interactive Learning Tutorials\)](#)
- [Thinking Critically in Physics Labs](#)
- [Tutorials on thinking about quantum entities](#)

# Online workshops

physport.org/  
workshops



PhysPort

Supporting physics teaching with research-based resources

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Search PhysPort...

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Workshops



What is Periscope?

## Periscope: Looking into Learning

### What is Periscope?

A collection of lessons for faculty and LAs/TAs to:

- watch and discuss videos of best-practices physics classrooms
- apply lessons learned to actual teaching situations
- practice interpreting student behavior
- become more effective teachers



View  
Collection



New Faculty Workshop - Introduction

## Virtual New Faculty Workshop

### What is the Virtual New Faculty Workshop?

Videos of presentations from the live Workshop for New Faculty in Physics and Astronomy feature:

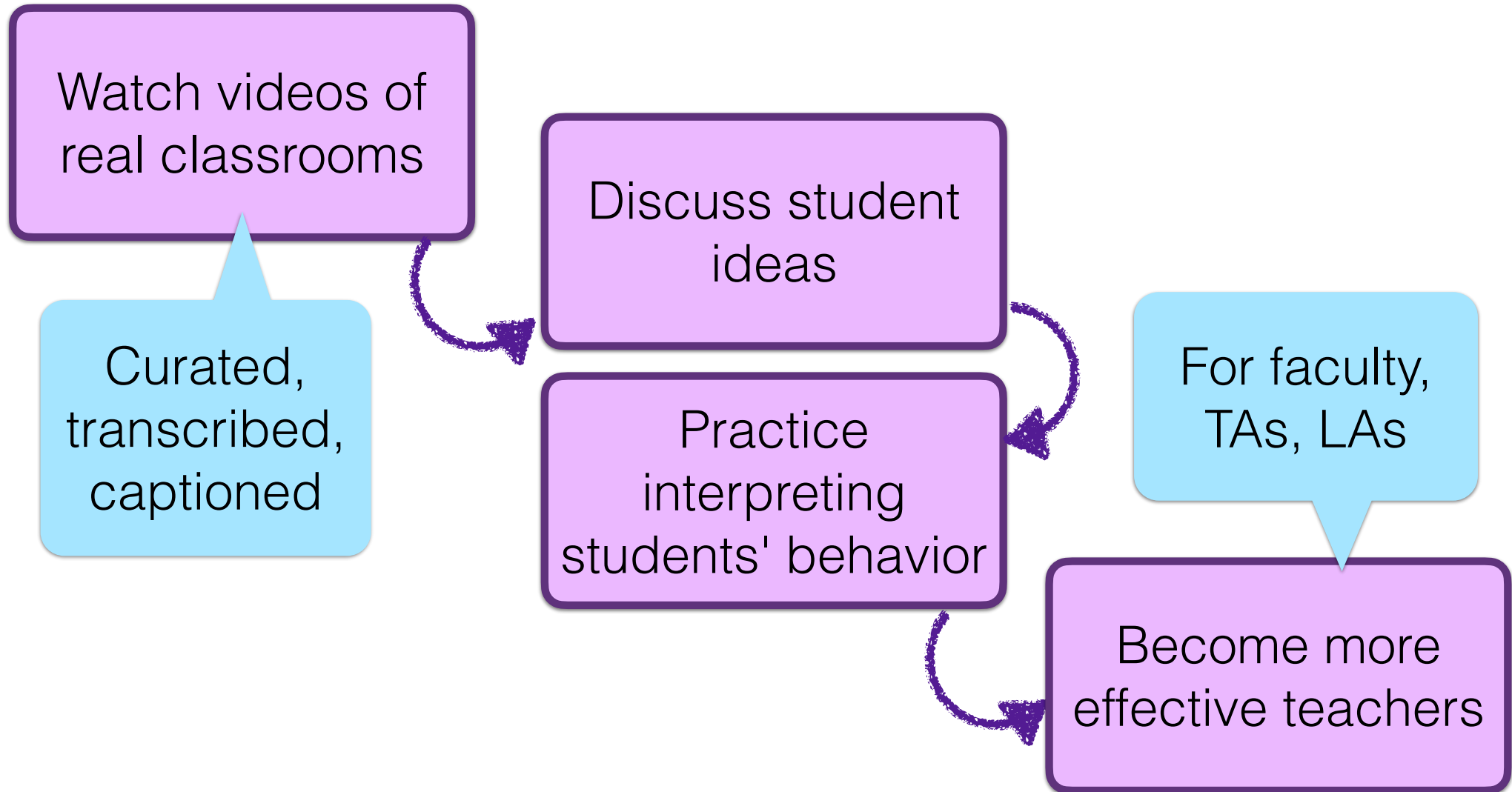
- leaders in physics education research and curriculum development
- teaching techniques proven to work in many environments
- cutting-edge developments in physics/astronomy curriculum and pedagogy



View  
Collection

# Periscope

[physport.org/  
periscope](https://physport.org/periscope)







# How can I bring out students' ideas?

[physport.org/  
periscope](https://physport.org/periscope)



Episode 101: Depth

-  Pedagogy Content    Attending to student ideas
-  Physics Content    Pressure
-  Instructor Interaction ✓
-  STEM-wide audiences ✓

## Sample discussion prompts

1. What did you notice in this episode? Talk to your neighbor about what you noticed.
2. What does Levi (the instructor) say that gets his students to articulate their ideas?
3. What does Levi do (nonverbally) to support the students in expressing themselves?
4. It can be tricky for an instructor to draw out both sides of a contradictory argument without embarrassing anyone. What specific strategies or behaviors does Levi use to keep everyone in the game?

Download

Classroom video

Student handout

Specific lesson guide

General facilitator's guide



Home

All Lessons

FAQ

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## Featured Lessons

[see all lessons →](#)

**BEST PRACTICES**

*How can I bring out students' ideas?*

**STUDENT IDEAS**

*What ideas do students have about...*

**GROUP WORK**

*How can I encourage...*

**SUPPORTING EQUITY**

*How can I assess group work in a way that is equitable?*

Available now!  
40+ lessons  
Facilitators' Guide

**CU Colorado LA Pedagogy**

[see this collection →](#)

*What ideas do students have about charge transfer?*

*What ideas do students have about mechanical energy?*

*What ideas do students have about forces and fields?*

# Expert Recommendations

physport.org/  
recommendations

Friendly articles that interpret and synthesize PER results for physics faculty.

Home

**Expert Recommendations**

Teaching

Assessment

Workshops

## FEATURED

### [Strategies and resources for teaching your physics course online on short notice](#)

by Chandralekha Singh, University of Pittsburgh

March 24, 2020



Due to the COVID-19 pandemic, many of us teaching physics as well as those teaching other subjects in face-to-face brick-and-mortar classrooms have suddenly found themselves in an unprecedented situation: the rest of the term should immediately transition to a completely

online format! Here I outline some strategies and resources that can help you and your colleagues.

[Read more »](#)

[COVID-19, online tools](#)

### [I suddenly have to move my lab course online! What should I do?](#)

by Linda Strubbe and Sam McKagan, PhysPort

### [I suddenly have to move my face-to-face physics/astronomy course online! What should I do?](#)

by Linda Strubbe and Sam McKagan, PhysPort

### [How can I maintain sensemaking when moving my class from in-person to online?](#)

by Andrew Elby (he/him) and

## Most Popular

[Effect size: What is it and when and how should I use it?](#)

[I suddenly have to move my face-to-face physics/astronomy course online! What should I do?](#)

[Normalized gain: What is it and when and how should I use it?](#)

[View all »](#)

## Tags

[active learning](#) [assessment](#) [teaching](#)

Feedback

# Expert Recommendations

[physport.org/  
recommendations](https://physport.org/recommendations)

Your questions:

- Here, we, as teachers, are motivated enough to engage in class. For a diverse population of students, e.g., large gen. ed. classes, it's hard to be the case. How to motivate them (the least motivated ones)?
- How do we create a classroom climate that enables students to bring their "whole selves" to the classroom (in terms of the socio-cultural identities that Tali spoke about)?
- How do we help our students become science communicators?

# Expert Recommendations

physport.org/  
recommendations

Friendly articles that interpret and synthesize PER results for physics faculty.

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by Linda Strubbe and Sam McKagan, PhysPort

## Most Popular

[Effect size: What is it and when and](#)

60+  
available  
now!

Have a suggestion?

Want to contribute?

editor@PhysPort.org

smckagan@aapt.org



Due to the COVID-19 pandemic, many physics teachers are finding themselves in an unprecedented situation: the need to transition to an online format! Here I outline some strategies and resources to help you and your colleagues.

[Read more »](#)

[COVID-19, online tools](#)

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# Assessment

www.physport.org/  
Assessment.cfm



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## Get Advice on Assessment and More

 [Best practices for administering concept inventories](#)

 [Best practices for administering attitudes and beliefs surveys](#)

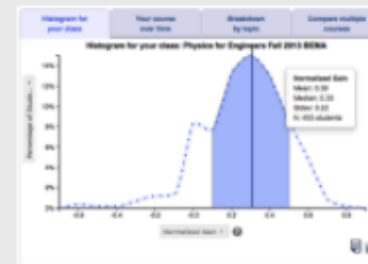
 [Administering research-based assessments online](#)



More

## Score and Compare Results

- Score, visualize, and analyze your students' results on [research-based assessments](#)
- Compare to data uploaded from teachers like you



Explore

## Find Assessments for Your Class

Our collection includes example questions and full assessments\* for:

- [Introductory physics concepts](#)
- [Upper-level physics concepts](#)
- [Scientific reasoning or problem solving](#)
- [Student attitudes and beliefs](#)

17



### Browse Assessments

Tell us about your course to find assessments relevant to you.

Any Subject: [dropdown] Any Level: [dropdown] Submit

94 Research-Based Assessments [Quick Filter] [Sort: Subject]

Content: knowledge

-  **Force Concept Inventory (FCI)**  
Mechanics Content knowledge (forces, kinematics)  
Levels: Intro college, High school  
Format: Pretest, Multiple-choice, Multiple-response, Agree/disagree, Short answer
-  **Force and Motion Conceptual Evaluation (FMCE)**  
Mechanics Content knowledge (kinematics, forces, energy, graphing)  
Levels: Intro college, High school  
Format: Pretest, Multiple-choice, Multiple-response, Agree/disagree, Short answer



Browse

# Assessment

Your questions:

- Should we use questions from concept inventories (like from PhysPort) on our tests/quizzes/exams in order to grade students?
- I did FCI last year and I would like to know if there is a way to analyze and/or use that data effectively?

# What are Research-based Assessments?

Force Concept Inventory (FCI)

Force & Motion Conceptual Evaluation (FMCE)

and 100+ more

These are:

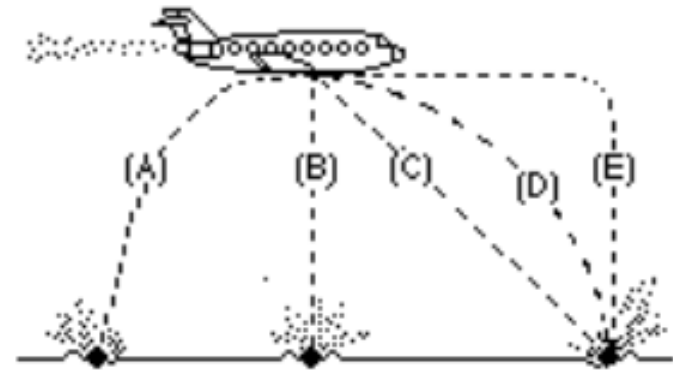
- Generally multiple-choice surveys
- Carefully crafted questions
- Conceptual topics across the physics curriculum
- Additionally: beliefs, problem-solving skills, affect

# Force Concept Inventory

- 30 multiple choice problems on introductory mechanics
- Many variants
  - Gendered, free-response, random-order, representational...
  - Many translations
- 2000+ citations

14. A bowling ball accidentally falls out of the cargo bay of an airliner as it flies along in a horizontal direction.

As observed by a person standing on the ground and viewing the plane as in the figure at right, which path would the bowling ball most closely follow after leaving the airplane?



# Synthesis research

Interpret the results of diverse PER

Weighted combination of data from published studies

More robust

Vulnerable to publishing bias

100,000 students

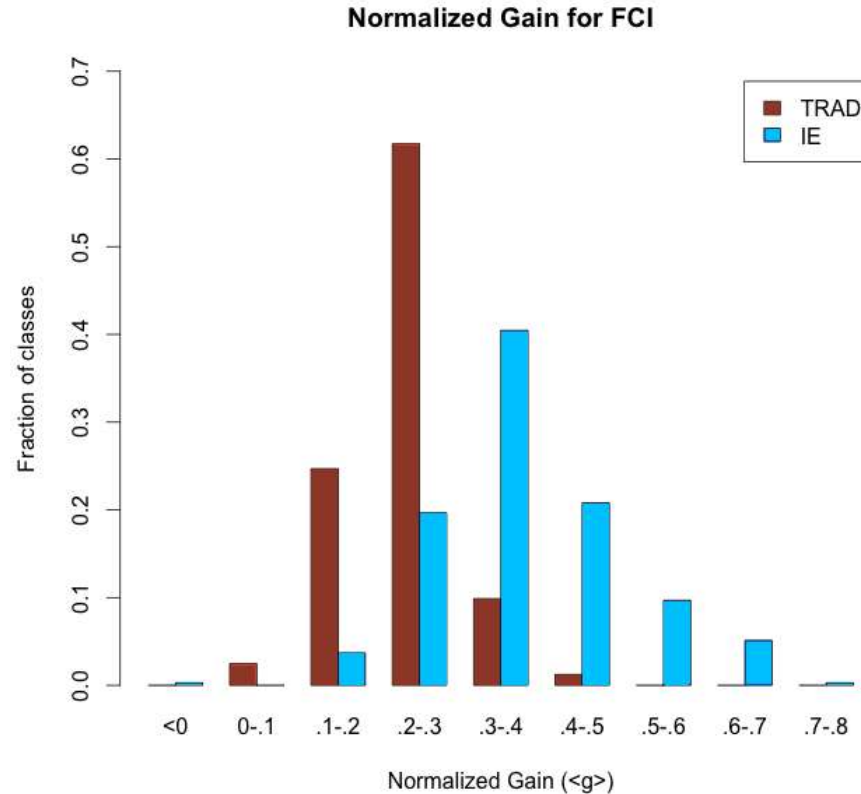
Madsen, McKagan, & Sayre (2013). Gender gap on concept inventories in physics: What is consistent, what is inconsistent, and what factors influence the gap? *PhysRevST-PER*

Madsen, McKagan, & Sayre (2015). How Physics Instruction impacts students' beliefs about learning physics. *PhysRevST-PER*

Von Korff, *et al* (2016). Secondary Analysis of Teaching Methods in Introductory Physics : a 50k - Student Study. *AmJPhys*

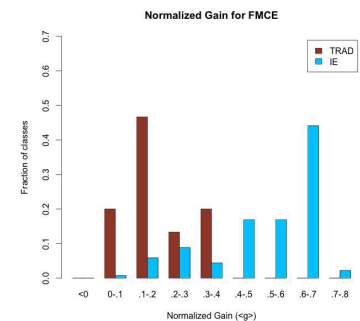
# Mechanics teaching

Interactive  
engagement



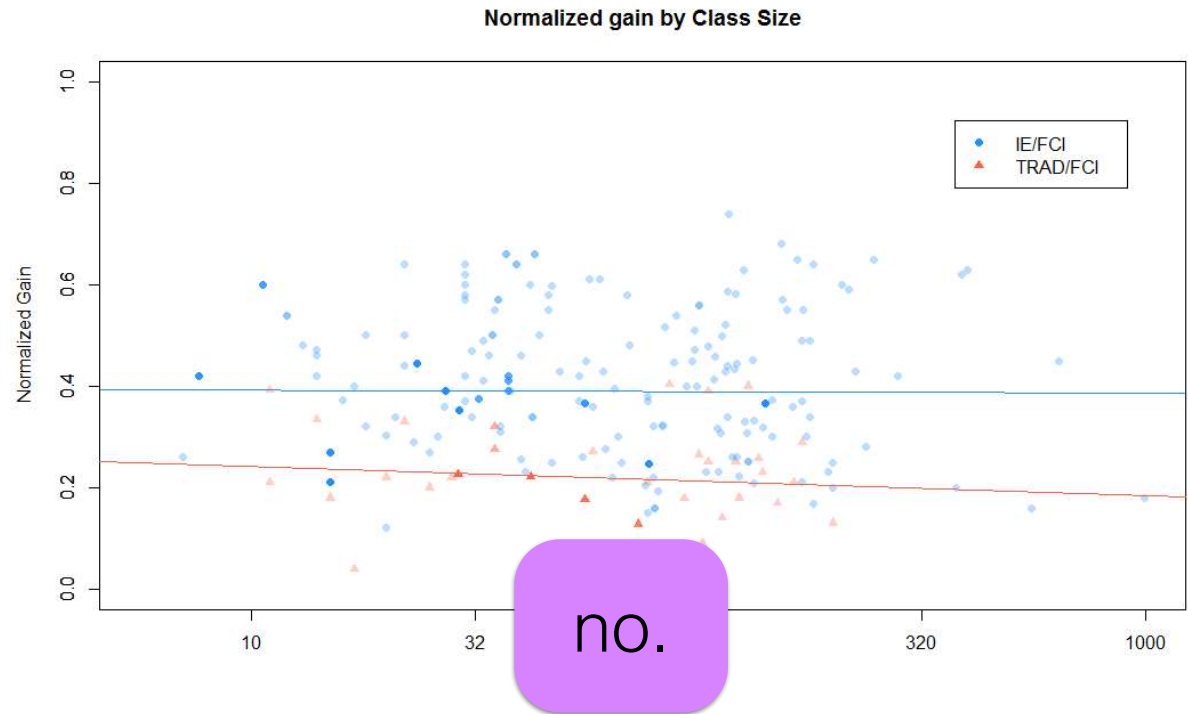
50,000 Students

Von Korff, J., *et al* (2016). Secondary Analysis of Teaching Methods in Introductory Physics : a 50k - Student Study. American Journal of Physics



# Does class size matter?

- Different sizes use different IE methods.
- Same trend for lecture and lab



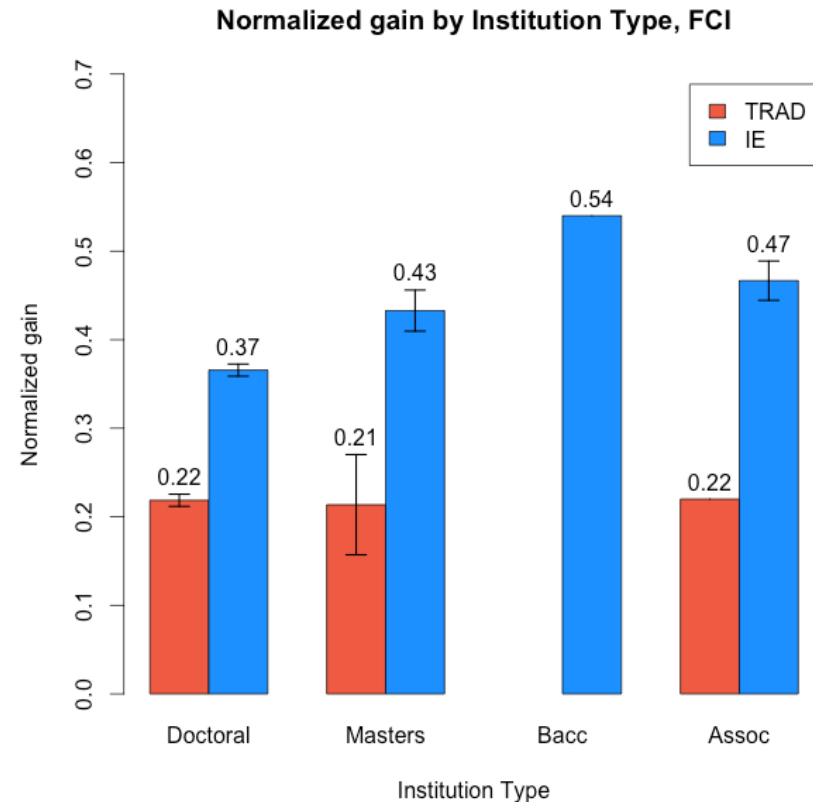
Von Korff, J., *et al* (2016). Secondary Analysis of Teaching Methods in Introductory Physics : a 50k - Student Study. American Journal of Physics

# Does institution type matter?

- Reduced Carnegie classification

no.

- Highly dependent on publishing effect
- Data are mostly Doc institutions.



Von Korff, J., *et al* (2016). Secondary Analysis of Teaching Methods in Introductory Physics : a 50k - Student Study. American Journal of Physics



# Assessment

physport.org/  
assessments

Which assessment  
should I choose?

**PhysPort**  
Supporting physics teaching with research-based resources

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Home | Expert Recommendations | Teaching Methods | **Assessments** | Workshops

## Browse Assessments

Tell us about your course to find assessments relevant to you.

Any Subject | Any Level | Submit

**Assessment Focus**  
Any

- Content knowledge
- Problem-solving
- Scientific reasoning
- Lab skills
- Beliefs / Attitudes
- Interactive teaching

**Format**  
Any

- Pre/post ?
- Multiple-choice
- Multiple-response ?
- Agree/disagree ?
- Short answer
- Rubric ?
- Observation protocol ?

**Research Validation ?**

- Gold star validation
- Silver validation
- Bronze validation

82 Research-Based Assessments

Sort by: Research validator

- Force Concept Inventory (FCI)**  
Mechanics Content knowledge (forces, kinematics)  
Levels: Intro college, High school  
Formats: Pre/post, Multiple-choice  
30 min
- Colorado Learning Attitudes about Science Survey (CLASS)**  
Beliefs / Attitudes (epistemological beliefs)  
Levels: Upper-level, Intermediate, Intro college, High school  
Formats: Pre/post, Multiple-choice, Agree/disagree  
8-10 min
- Brief Electricity and Magnetism Assessment (BEMA)**  
Electricity / Magnetism Content knowledge (circuits, electrostatics, magnetic fields and forces)  
Levels: Upper-level, Intro college  
Formats: Pre/post, Multiple-choice  
45 min

- Conceptual topics across physics curriculum
- Additionally: beliefs, problem-solving skills, affect
- Searchable by
  - kind & level of course
  - format & topic
  - research validation

100+ available

# Assessment

[physport.org/  
assessments](https://physport.org/assessments)

Which assessment  
should I choose?

How should I  
administer it?



## Force Concept Inventory (FCI)

Developed by David Hestenes, Malcolm Wells, Gregg Swackhamer, Ibrahim Halloun, Richard Hake, and Eugene Mosca

- Purpose** To assess students' understanding of the most basic concepts in Newtonian physics using everyday language and common-sense distractors.
- Format** Pre/post, Multiple-choice
- Duration** 30 min
- Focus** Mechanics Content knowledge (forces, kinematics)
- Level** Intro college, High school

Typical results

Sample questions

Research overview

Translations

# Assessment

[physport.org/  
assessments](https://physport.org/assessments)

Which assessment  
should I choose?

How should I  
administer it?

Where do I get it?

Verified educators!

For faculty and  
teaching staff  
free, easy

Download test

Administration guide

Security instructions

# Assessment

[physport.org/  
assessments](https://physport.org/assessments)

Which assessment  
should I choose?

How should I  
administer it?

Where do I get it?

How should I interpret  
my results?

# Assessment

www.physport.org/  
Assessment.cfm



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## Get Advice on Assessment and More

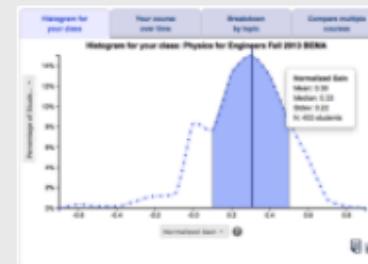
-  [Best practices for administering concept inventories](#)
-  [Best practices for administering attitudes and beliefs surveys](#)
-  [Administering research-based assessments online](#)



More

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- [Student attitudes and beliefs](#)

29



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Mechanics Content knowledge (kinematics, forces, energy, graphing)  
Levels: Intro college, High school  
Formats: Pretest, Multiple-choice



Browse

# Data Explorer

[physport.org/DataExplorer](https://physport.org/DataExplorer)

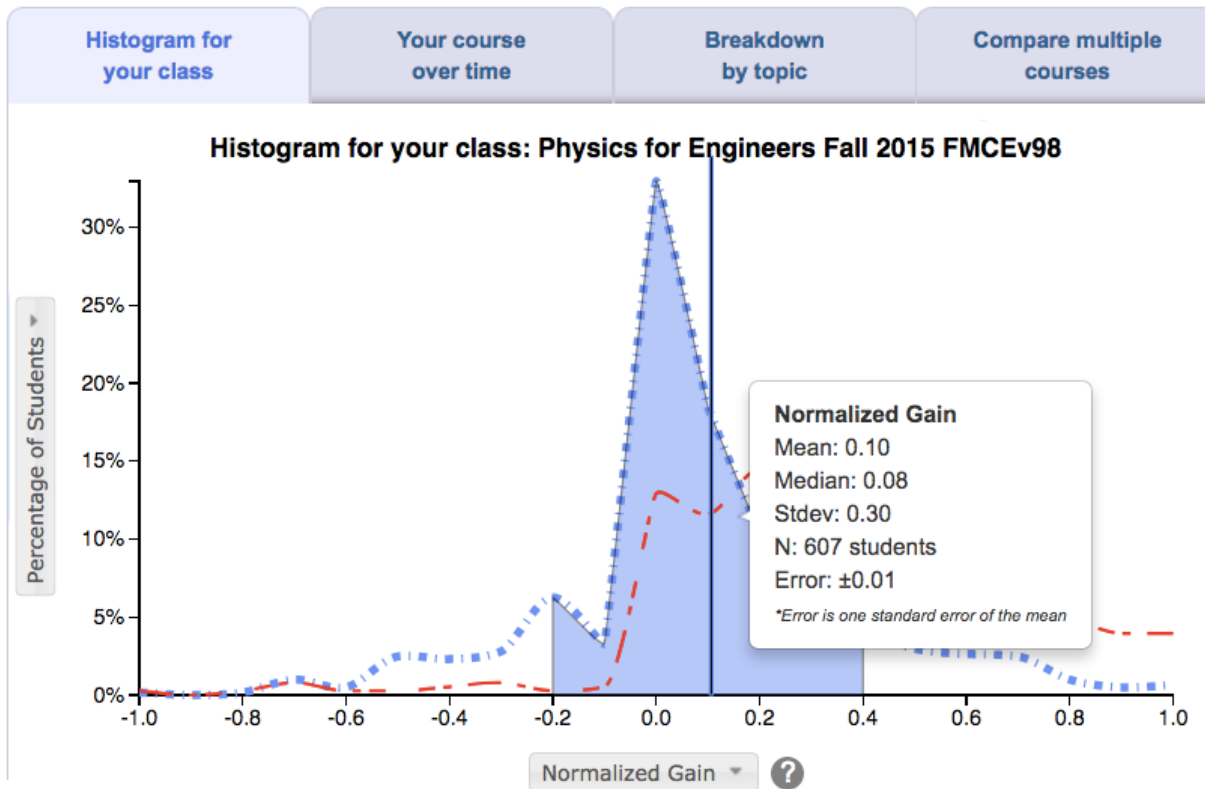
Visualize and compare your students' performance from 36 research-based assessment instruments.

- View & download beautiful graphs
- Compare multiple courses
- Track your courses over time
- Group and split by gender, major, section, instructor, etc
- Easy upload, automatic pre/post matching and scoring
- Compare to national averages
- Download pdf reports for your tenure file

# Data Explorer

physport.org/  
DataExplorer

Visualize and compare your students' performance on research-based assessment instruments.



Upload your data

Explore your data

Download your results

# Data Explorer

[physport.org/  
DataExplorer](https://physport.org/DataExplorer)



## Secure

We use the same security measures used by banks and financial institutions

so you can have the utmost confidence that your data is safe.

- Your identity is protected
- Your students' identities are protected
- We use one-way, cryptographically-secure transformations
- We report on aggregate data



# Data Explorer

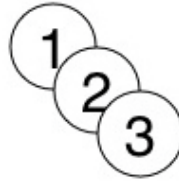
physport.org/  
DataExplorer



## Secure

We use the same security measures used by banks and financial institutions

so you can have the utmost confidence that your data is safe.



## Easy.

Our guided process makes it easy to upload your data, and our visualization

engine is tailored to assessments, making charting a snap.

- We match pre- and post-data for you
- You can upload the files you already have\*: no need to use a template

\* .csv, xls, or .xlsx; one assessment per file; one row per student

# Data Explorer

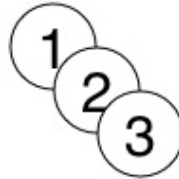
[physport.org/  
DataExplorer](https://physport.org/DataExplorer)



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## Easy.

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engine is tailored to assessments, making charting a snap.



## Powerful

With one click, you get a comprehensive analysis of your results, allowing you

to compare your data with classes and teachers in similar institutions nationwide.

- Explore responses on by questions or clusters
- Track your classes over time
- Split data by demographics
- Rigorous statistics done for you in the background

# physport.org/DataExplorer

Histogram for  
your class

Your course  
over time

Breakdown  
by topic

Compare multiple  
courses

## Summary

Average  
Gain ?  
**0.10**  
± 0.01

Your students' average normalized gain of **0.10 ± 0.01** is near the bottom of the range for traditional lecture classes . See [typical results](#).

Effect Size ?  
**0.61**

The effect size of the change between pre and post for your class is **0.61**. This is a moderate effect size

Average  
Score ?  
**Pre 18%**  
± 1%  
**Post 30%**  
± 1%

Your students' average score increased from **18% ± 1%** on the pre-test to **30% ± 1%** on the post-test. See [typical results](#).

N (matched)  
**607**

You have 607 "matched" students (who took both the pre- and post-test) in your class. All calculations are based on matched students.

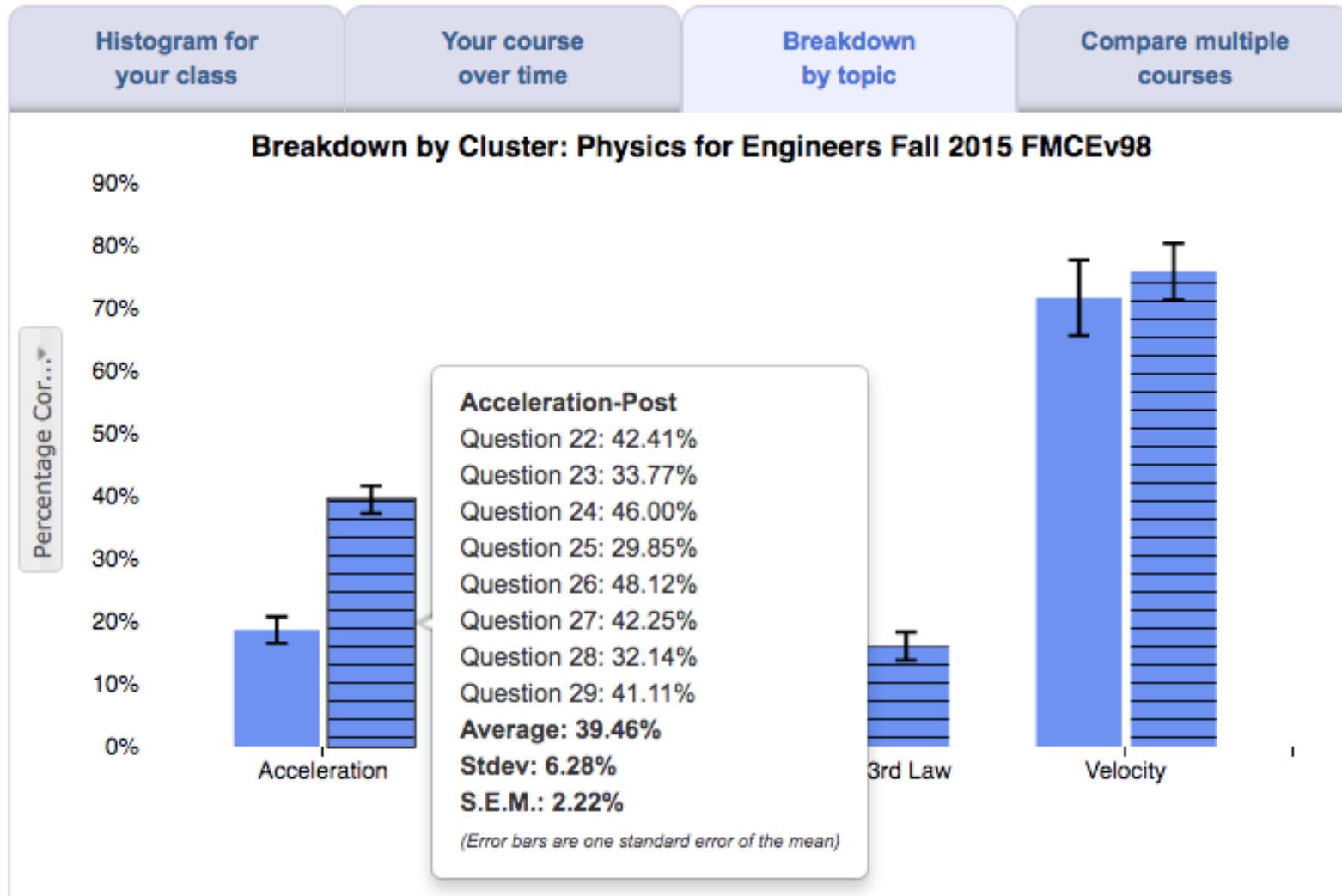
## Recommendations

Courses that are taught using interactive engagement techniques tend to have higher normalized gains than those using traditional lecture. The key to these methods is getting students actively engaged in constructing their own understanding and not just passively listening.

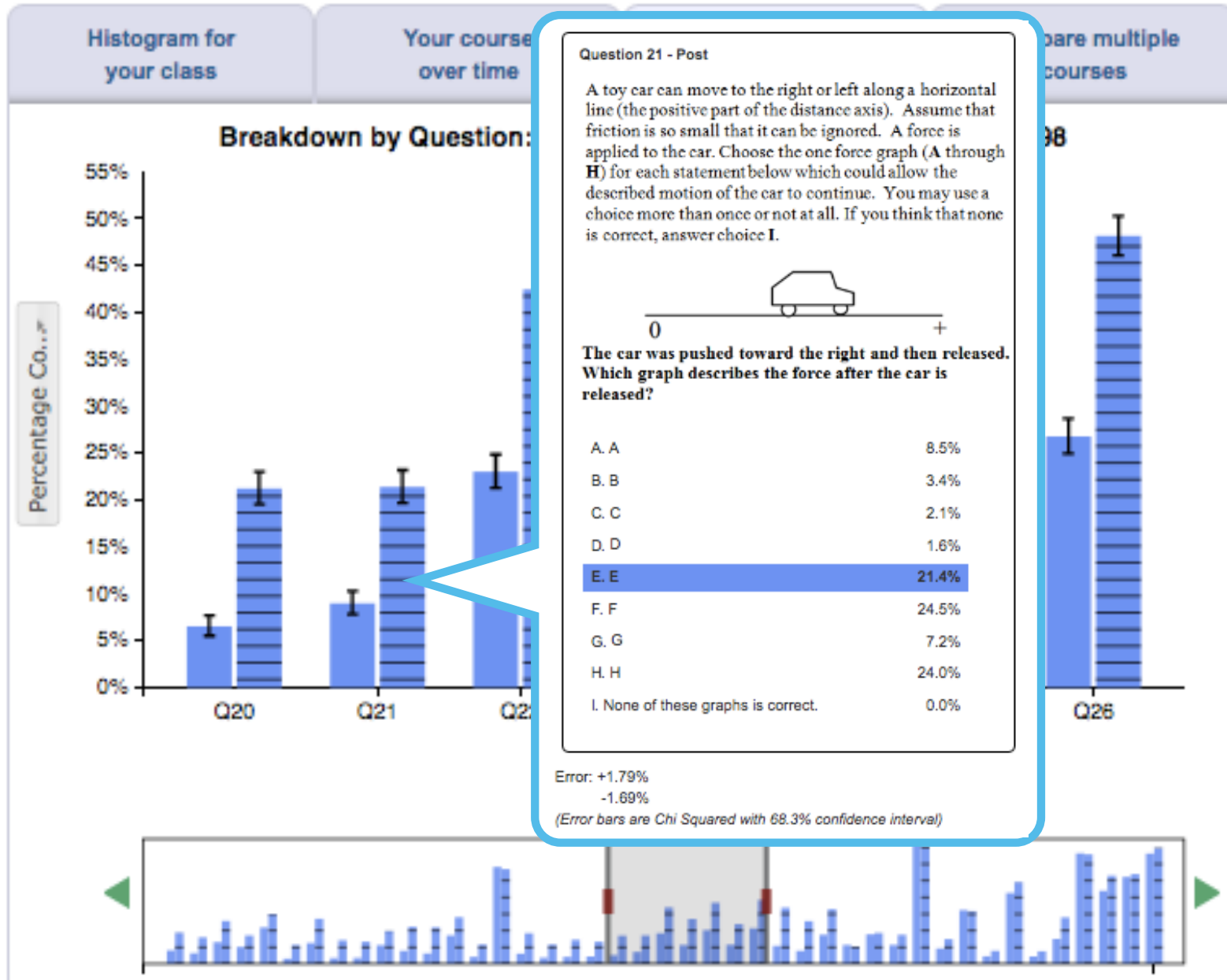
This can be accomplished in many ways. Popular methods that you could try include: [Peer Instruction](#), [PhET Interactive Simulations](#), [Interactive Lecture Demonstrations](#), and [Just In Time Teaching](#).

As we collect more data on how teaching practices correlate with learning gains, we will eventually provide more customized recommendations.

# physport.org/DataExplorer



# physport.org/DataExplorer



physport.org/DataExplorer

Histogram for  
your class

Your course  
over time

Breakdown  
by topic

Compare multiple  
courses

1 Datasets

Show

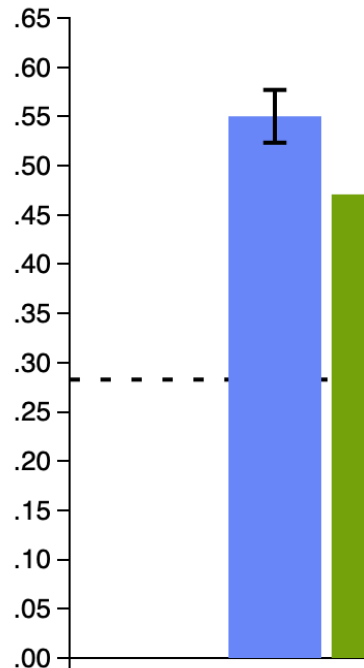
Select

Group by... | Split by...

Split by Major



Your course over time: IntroPhysicsAlgebra FCI



Group/split by student information\* including:

### Section

#### Academic Record

- Course Grade
- GPA
- Major
- Year in School
- Expected Grad. Year
- Institution Name

### Demographics

- Gender
- Race
- Ethnicity

### Background

- High School Physics
- SAT or ACT
- TOEFL
- Highest Level of Math









\*Using any labels you provide within each of these categories

physport.org/DataExplorer

# Uploading assessment results

Specify what's in your columns: ?

- Upload any spreadsheet of your assessment results (.xls, .xlsx, .csv) with a header row telling us what's in each column and individual student responses.
- Tool makes intelligent guesses as to the structure of uploaded data which are confirmed by uploader.

? Student Full Name  	? Student ID  	? Gender  	? Major  
name	ID	gender	major
Mikel Betancourt	4736686	M	PHY
Marla Danks	7109085	F	ENG
Yuko Kingsbury	6238587	F	PHY
Dani Litke	1105743	NonBinary	PHY
Lamar Quimby	4695152	M	BIO

# More materials: ComPADRE

www.compadre.org




- The AAPT ComPADRE Collections
- Events
- Collaborate
- Community Services
- About
- History
- Contact Us

Welcome to comPADRE resources for physics and astronomy communities

## Participate!

ComPADRE is powered by your submissions. We encourage you to [login](#) and contribute! [Account registration](#) is free.

## Featured Community Events

 [Upcoming OSP Events](#)

 [Adopt-a-Physicist](#)

## Featured Collection



**The AAPT ComPADRE Digital Library** is a network of free online resource collections supporting faculty, students, and teachers in Physics and Astronomy Education.

Each of our collections contain materials designed for a specific group or course. Browse below to find a collection right for you.

### K-12 Physics

#### [Physics Front](#)

Resources for K-12 physics teachers

#### [OSP](#)

Open Source Physics

#### [IVV](#)

Interactive Video Instruction

#### [PSRC](#)

A broad collection of physical science resources

### Faculty Resources

#### [OSP](#)

Open Source Physics

#### [PhysPort](#)

Supporting physics teaching with research-based resources

#### [IVV](#)

Interactive Video Instruction

#### [PER-Central](#)

Physics Education Research

#### [PICUP](#)

Computational materials for physics classes

#### [PhysTEC](#)

Physics Teacher Education

### [Physlet Physics](#)

Simulation-based tutorials and learning exercises covering all of the introductory physics course.

### Did You Know?

Interactive Video Vignettes use online video to help students explore topics in physics. [Browse the collection](#) or [build your own](#).



# More: Living Physics Portal

[www.livingphysicsportal.org](http://www.livingphysicsportal.org)



Living Physics  
Portal

Resources and community for  
teaching physics for life sciences



Search

DISCUSS

REVIEW PROCESS

MYPORTAL

Login

Browse

Physics Topics

Life Sciences Topics

Resource Types

Pedagogies

Courses

Register

## Living Physics Portal

Welcome to our community and collection of high-quality materials for teaching physics to life sciences students at the college level.

### Find Quality Curricular Materials

Search or browse our library of curricular materials, courses, and instructor resources.

### Participate in Our Supportive Community

Join our community discussions of teaching physics for life sciences students.

### Contribute Your Materials

Add your own materials to our collections to get feedback and ideas from other instructors.

# More: Living Physics Portal

www.livingphysicsportal.org

The screenshot shows the Living Physics Portal website. At the top, there is a navigation bar with the logo "Living Physics Portal" and the tagline "Resources and community for teaching physics for life sciences". A search bar is present, along with navigation links for "DISCUSS", "REVIEW PROCESS", "TUTORIAL", "Browse", "Physics Topics", "Life Sciences Topics", "Resource Types", "Pedagogies", "Courses", and a "Contribute" button. A blue callout box highlights the website URL "www.livingphysicsportal.org".

The main content area is divided into tabs: "CURRICULAR RESOURCES (380)", "COURSES (0)", "INSTRUCTOR RESOURCES (7)", "PEOPLE (729)", and "ALL (1125)". The "CURRICULAR RESOURCES" tab is selected.

On the left side, there is a "Filters" section with expandable categories: "Physics Topics", "Life Sciences Topics", "Resource Types", "Remote Learning" (with a toggle switch), "Pedagogical Approach", and "Skill / Competency".

The main content area displays a list of resources. The first resource is "Diffusion and Random Walk unit", which is marked as "Vetted". It includes a description: "Instructor supplement, Student reading, Lecture materials, In-class... Provides the basic physics of the critical biological phenomenon of diffusion and random motion." It also lists associated topics: "Medical Applications, Physical..." and "Statistical Physics, Diffusion,...". The resource is attributed to "Edward Redish" and "Kimberly Moore" (+ 1 more).

The second resource is "Biomechanics - Motion and Forces", also marked as "Vetted". It includes a description: "Instructor supplement. Lab. Pre-class assignment. In-class activitv...".

# Look it up

- Cruise through the PhysPort teaching pages or ComPADRE or Living Physics Portal
- Find something:
  - You already do
  - You learned about here at NFW
  - You're curious about trying next fall
- Imagine:
  - What do I need to know to do this in my class?
  - What resources do I need to implement it?
  - Who else do I need to talk to?

[www.physport.org](http://www.physport.org)

[www.compadre.org](http://www.compadre.org)

[www.livingphysicsportal.org](http://www.livingphysicsportal.org)

# PhysPort can help.

How to best support students' learning?

How do you know if students are learning?

free

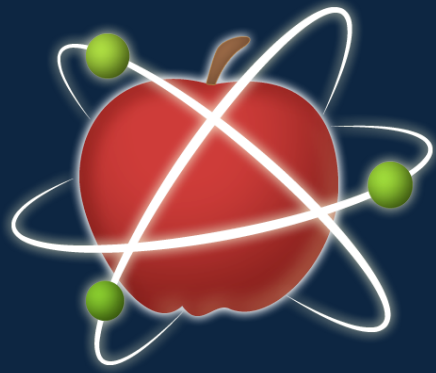
friendly

powerful

research-based

Find information and advice

Change your teaching



**PhysPort**

Supporting physics teaching  
with research-based resources

[physport.org](http://physport.org)

# PhysPort can help.

## **Learn about better teaching!**

Search for teaching methods

Read recommendations from experts

## **Be a PhysPort verified educator!**

Download assessments

Get assessment analysis

Take online workshops

## **Do Physics Education Research!**

Discover how students learn

Build better pedagogy

## **Email us to learn more**

[editor@PhysPort.org](mailto:editor@PhysPort.org)

[smckagan@aapt.org](mailto:smckagan@aapt.org)

