

Data Collection:

Student pretests, posttests and motivational surveys

KATE DAHLKE

IRB consent

We must have informed consent from students for data collection

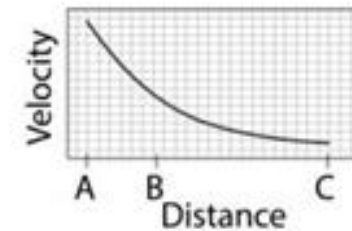
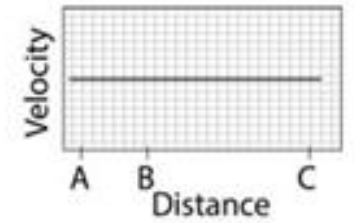
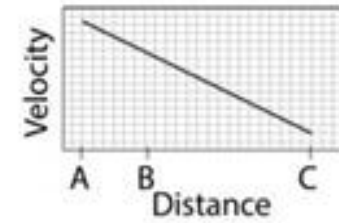
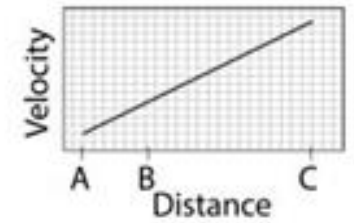
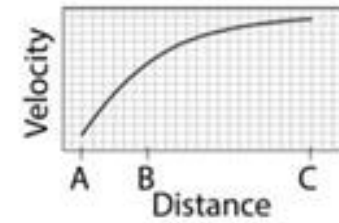
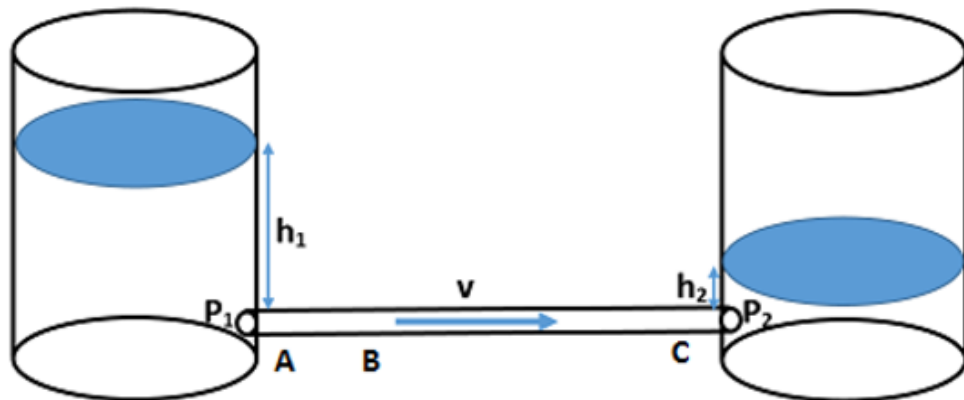
Consent form is digital and can be filled out *anytime* prior to students taking the pretest

Students only need to fill out consent form once

Students can be required to take pre/posttests for a grade without consenting to data collection for research purposes

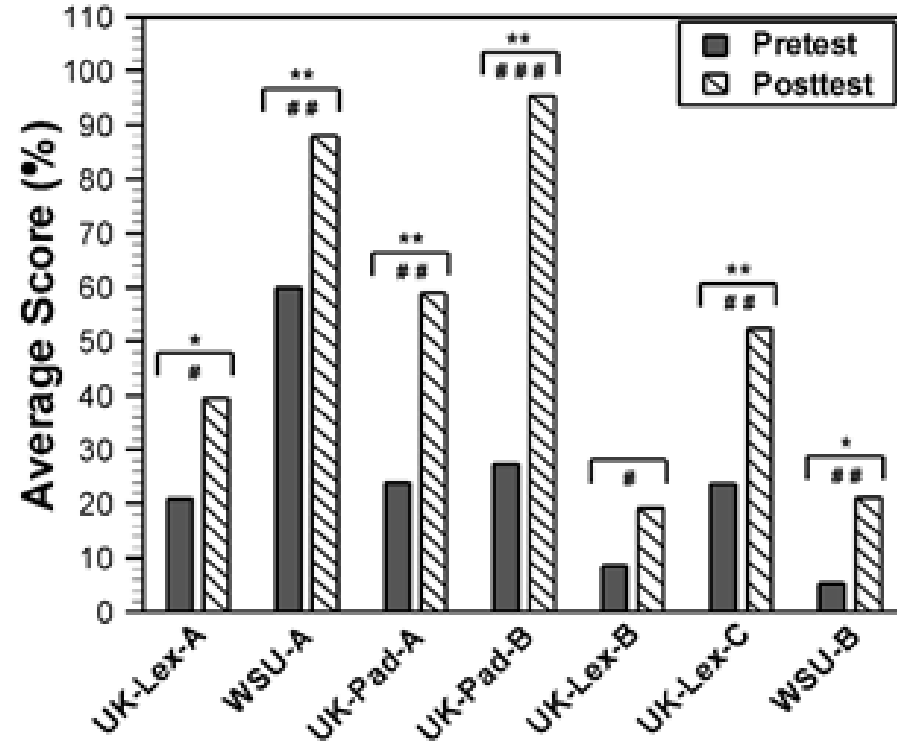
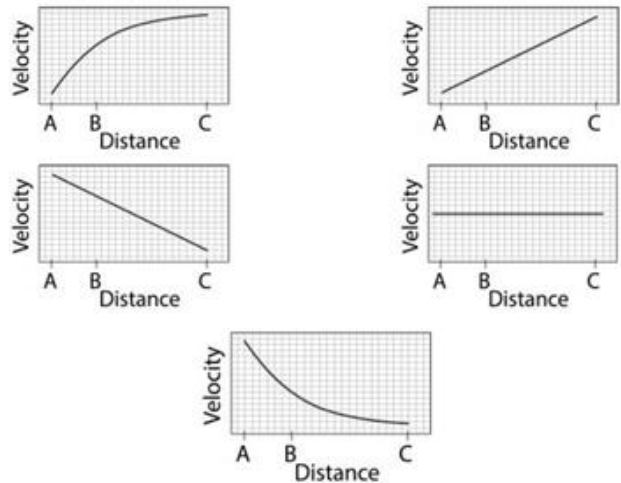
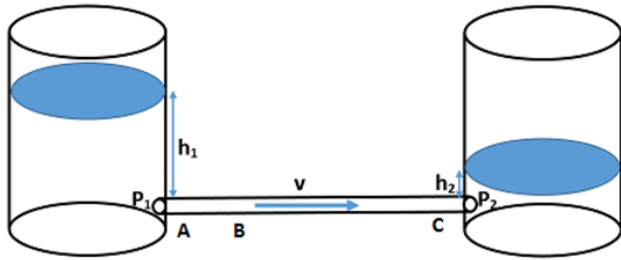
Pre- and posttest example:

Water flows from Tank 1 to Tank 2. Select the correct velocity graph.



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Water flows from Tank 1 to Tank 2. Select the correct velocity graph.



A, B & C: different implementation years; posttests increasing with instructor experience.

Pre- and posttest implementation:

Pre and posttests should take between 3-10 minutes

Pretest: composed of 3-4 questions about the module

Posttest: composed of 5-6 questions about the module

(bank of possible questions provided on Workshop webpage)

These should be done in class as close to implementation as possible

- Please note implementation dates in your post-implementation form

Motivational Survey implementation:

Motivational survey should take 10-15 minutes

These do not need to be done in class, but should be done within 24-48 hours of LC-DLM classroom implementation

Why do we need to collect this data?

This data allows us to study how effective LC-DLMs are at improving students' conceptual understanding of fundamental engineering concepts

This data can also tell you (the educator) what's working and what's not in your classroom

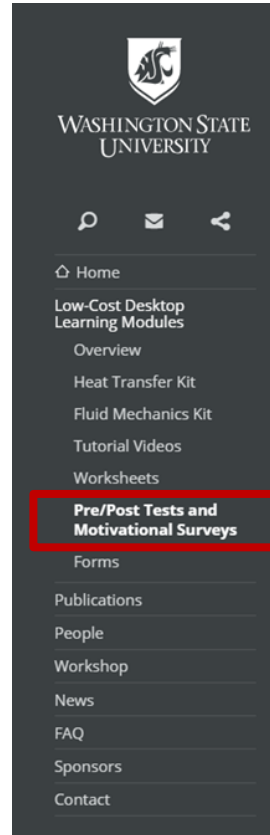
This data is beneficial to all parties

Accessing pre/posttests and motivational surveys:

Password-protected link on our website:

labs.wsu.edu/educate/pre-post-tests

Password is **LCDLM** (no dashes, all caps)



EDUCATING DIVERSE UNDERGRADUATE COMMUNITIES WITH AFFORDABLE TRANSPORT EQUIPMENT

Educating Diverse Undergraduate Communities with Affordable Transport Equipment

Protected: Pre/Post test

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Accessing Pre/posttests and motivational surveys:

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- Lamar University
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- North Carolina State University
- Prairie View A&M University
- Texas A&M University
- University of Central Oklahoma
- University of Dayton
- University of Oklahoma
- University of Texas Rio Grande Valley
- University of Tulsa
- Wichita State University
- Workshop Sample



EDUCATING DIVERSE UNDERGRADUATE COMMUNITIES WITH AFFORDABLE TRANSPORT EQUIPMENT

Educating Diverse Undergraduate Communities with Affordable Transport Equipment

Consent form

Education Research Study: Since you are taking a course related to fluid mechanics and/or heat transfer you will be taking on-line pre- and posttests and surveys. It is requested that you also allow use of de-identified (confidential) responses you enter into this website so researchers can determine effectiveness of new teaching methods being used by your instructor at your institution. The following Consent form describes the study and allows you to agree to have your responses used as part of the study.

[Click here to consent to participate in educational research study](#)

Workshop Sample Pre- and posttests and motivational surveys

- Hydraulic-loss
 - Pretest
 - Posttest
 - Motivational Survey
- Venturi meter
 - Pretest
 - Posttest
 - Motivational Survey



- Home
- Low-Cost Desktop Learning Modules
 - Overview
 - Heat Transfer Kit
 - Fluid Mechanics Kit
 - Tutorial Videos
 - Worksheets
- Pre/Post Tests and Motivational Surveys**
 - Forms
- Publications
- People
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Accessing Pre/posttests and motivational surveys:

Go to website:

labs.wsu.edu/educ-ate/pre-post-tests

Go through pre and posttests under “Workshop Sample”

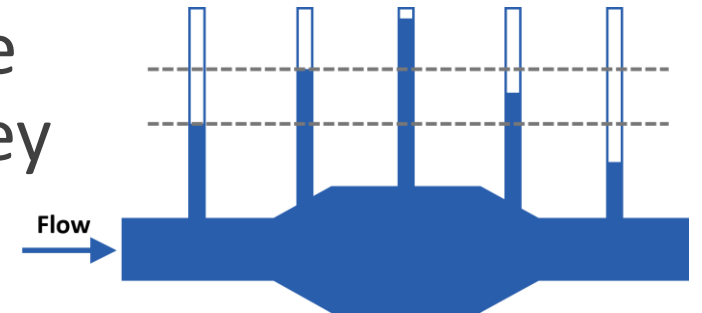
- *This will be available after the workshop is over*

Pre/posttest questions:

WSU team is finalizing pre and posttest questions to be used for the modules, as well as the motivational survey questions

If you plan on implementing before the beginning of October, please let us know!

A PDF of possible questions for the fluids modules (hydraulic loss and venturi meter) and a PDF of possible questions for the heat exchanger modules (double pipe and shell and tube) are provided under the “Workshop” page on our website.



Grades for your course

WSU researchers can provide you with a list of student names + final grade (via institutional emails)

- Even a few points can incentivize students to take the pre/posttest and motivational surveys seriously

WSU researchers will work with anonymized data to analyze effectiveness of LC-DLMs

Questions?
