



Shared IT Services for Higher Education & Research

Conference 2017



UBC's ComPAIR Project

Studying the student experience as part of
the development of a new teaching
technology

Presenters

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ComPAIR

What we'll cover today:

- How is ComPAIR used?
- How did we make it?
- How did we assess it?
- How does it work (hands-on demo)?
- How can you get it?
- Q&A

ComPAIR

How is it used?

ComPAIR

How is it used?

As a teaching and learning tool,
not (yet) as an assessment tool

ComPAIR...

uses the principle of **comparative judgement**:
even novices who do not yet have the disciplinary knowledge to offer confident assessment are able to discern which of two answers is “better.”

How would you describe this figure?

A	B	C
D	E	F
G	H	I

Comparisons give a reference point for learning

A	B	C
D	E	F
G	H	I

A	D	G
B	E	H
C	F	I

Step 1: answer a question

Answer

Please note **answers are not automatically saved** as you type. However, you may manually save a draft of your answer below.

💬 Practice critical premise on Shakespeare

Imagining that you are writing a 1000-word essay, draft a critical premise for the following question:

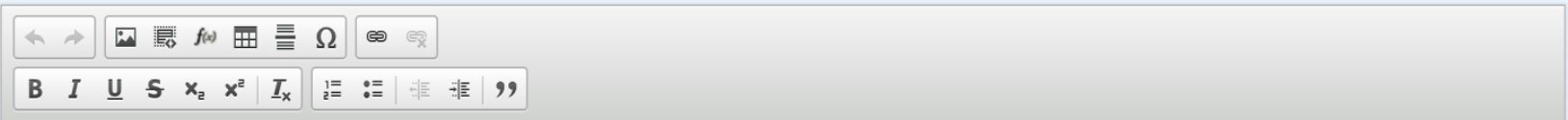
Discuss the significance of Shakespeare's representation of the relationship between innate human nature and the forces of culture in *The Tempest*. Your answer should not exceed 50 words.

Be sure to confirm that your answer includes both parts of an effective critical premise: a clearly-articulated critical observation and a sense of why that observation is significant (what does it help us to see/understand that we did not recognize before?--aka the "so what"?)

Attachment (maximum size 25MB)

* Tip: Allowed file types include PDFs, MP3s, MP4s, JPGs, and PNGs. Try downloading [Acrobat Reader](#) or using [Firefox](#) or [Chrome](#) if you have problems uploading PDFs.

Choose Files No file chosen



Step 2: compare and rank pairs

Answer Pair

Round 1 / 3

Answer 1

Shakespeare uses Prospero in *The Tempest* to examine the selfishness of human ambition through Prospero's manipulation of other island occupants to further his own destiny.

⚠ Flag

Answer 2

In *The Tempest*, William Shakespeare uses Prospero's journey to throw doubt on the Renaissance idea that power comes from God, suggesting instead that power originates in individual ambition.

⚠ Flag

1) Choose the answer that best meets the criteria below

🔍 Which is more interesting?

Select one:

Answer 1

Answer 2

Select the premise you find more interesting. Which do you think presents a more intriguing idea to form a paper around?

🔍 Which is better written?

Select one:

Answer 1

Answer 2

Regardless of level or interest or creativity, choose which premise is more structurally sound. based on the principles we've been covering in class.

Step 3: write feedback

🔍 Which is better written?

Select one:

Answer 1

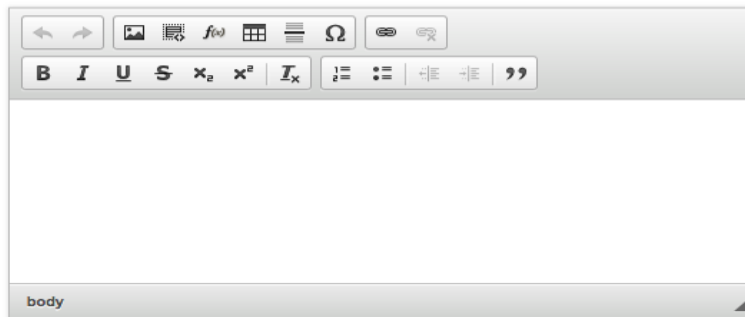
Answer 2

Regardless of level or interest or creativity, choose which premise is more structurally sound. based on the principles we've been covering in class.

2) Give detailed feedback to the author of each answer

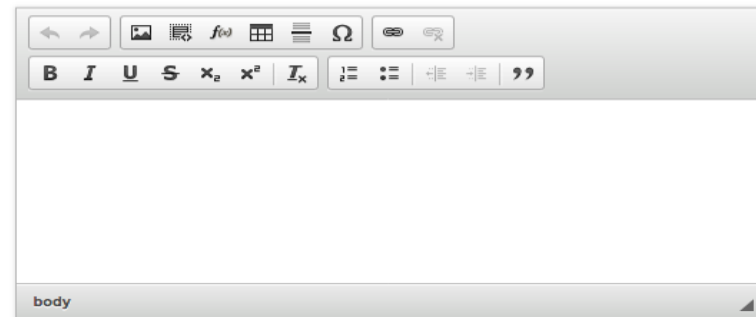
Use any instructor-provided guidelines or answer general questions, based on the criteria above: **What did the author do well?** **Where might the author improve?** Remember to make your comments—including criticisms—encouraging, respectful, and specific.

Your feedback for Answer 1 (shown to instructors and author) ↓



A rich text editor interface for providing feedback on Answer 1. It features a toolbar with icons for undo, redo, image, link, unlink, list, indent, outdent, bold, italic, underline, strikethrough, subscript, superscript, and text color. Below the toolbar is a large text area for writing feedback. The bottom of the editor shows a 'body' label and a small triangle icon.

Your feedback for Answer 2 (shown to instructors and author) ↓



A rich text editor interface for providing feedback on Answer 2. It features a toolbar with icons for undo, redo, image, link, unlink, list, indent, outdent, bold, italic, underline, strikethrough, subscript, superscript, and text color. Below the toolbar is a large text area for writing feedback. The bottom of the editor shows a 'body' label and a small triangle icon.

Save Draft

Submit

Step 4: that's up to you...

- *students complete a self-assessment or revision of their own answer in the app
- *answers and feedback are assessed by teacher or TA (consider having both equally weighted in assessment)
- *use the ComPAIR answers as a foundation for a followup group practice applying the skill to a new, more challenging question

Sample structure...

Communicating with students on ComPAIR as a one-week assignment arc, with defined windows for answering and comparing

How did we make it?

Participatory Design Process (2013-2016)

- All team meetings included:
 - English, Math, Physics faculty members
 - Developers, Programmers & HCI Experts
 - Research & Evaluation
- Students were involved in early development:
 - Pre-pilot using skeleton working version
 - Live feedback and updates during, structured survey afterward

How did we make it?

9V

A

XOXO a under

new 11

a under

Protopos

2 a under

a under

a under

Comment

CHOOSE A

B

#114

a under

a under

a under

a under

a under

a under

a under

Comment

CHOOSE B

SUBMIT

How did we make it?

Iterative Usability Testing (2014-2015)

- Students invited to test prototype with mock assignments
- Booth set up in high-traffic area on campus
- Students self-select to test for 10-15 minutes (with sugar-based reward!)
- Results showed places to improve: **user interface**, basic assignment **workflow**

How did we assess it?

Official Pilot Evaluation (2015-2016)

For 3 courses (English, Math, Physics) using beta ComPAIR in real courses...

- **Usability:** How could ComPAIR and its implementation in courses be optimized?
- **Usefulness:** Did ComPAIR assignments support effective teaching and learning (according to people using it IRL)?

How did we assess it?

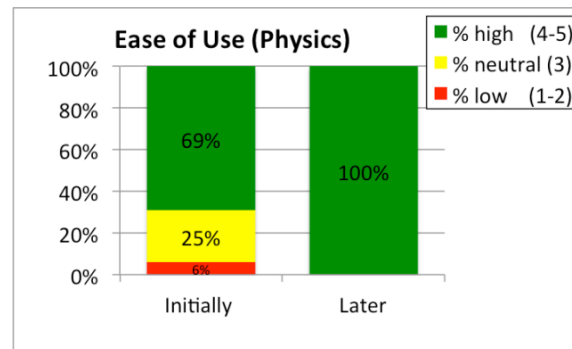
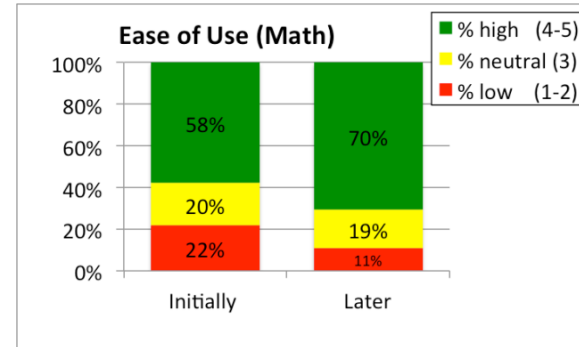
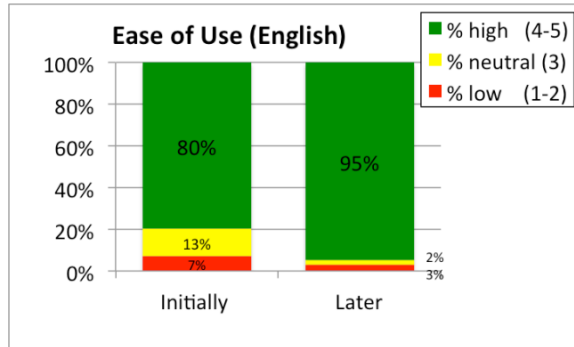
Data Collection Methods

At the end of term, we conducted...

- **Surveys:** 168 students and 6 TAs responded in separate surveys
- **Focus Groups:** 4 students and 5 TAs participated in separate sessions
- **1:1 Interviews:** All 3 instructors participated

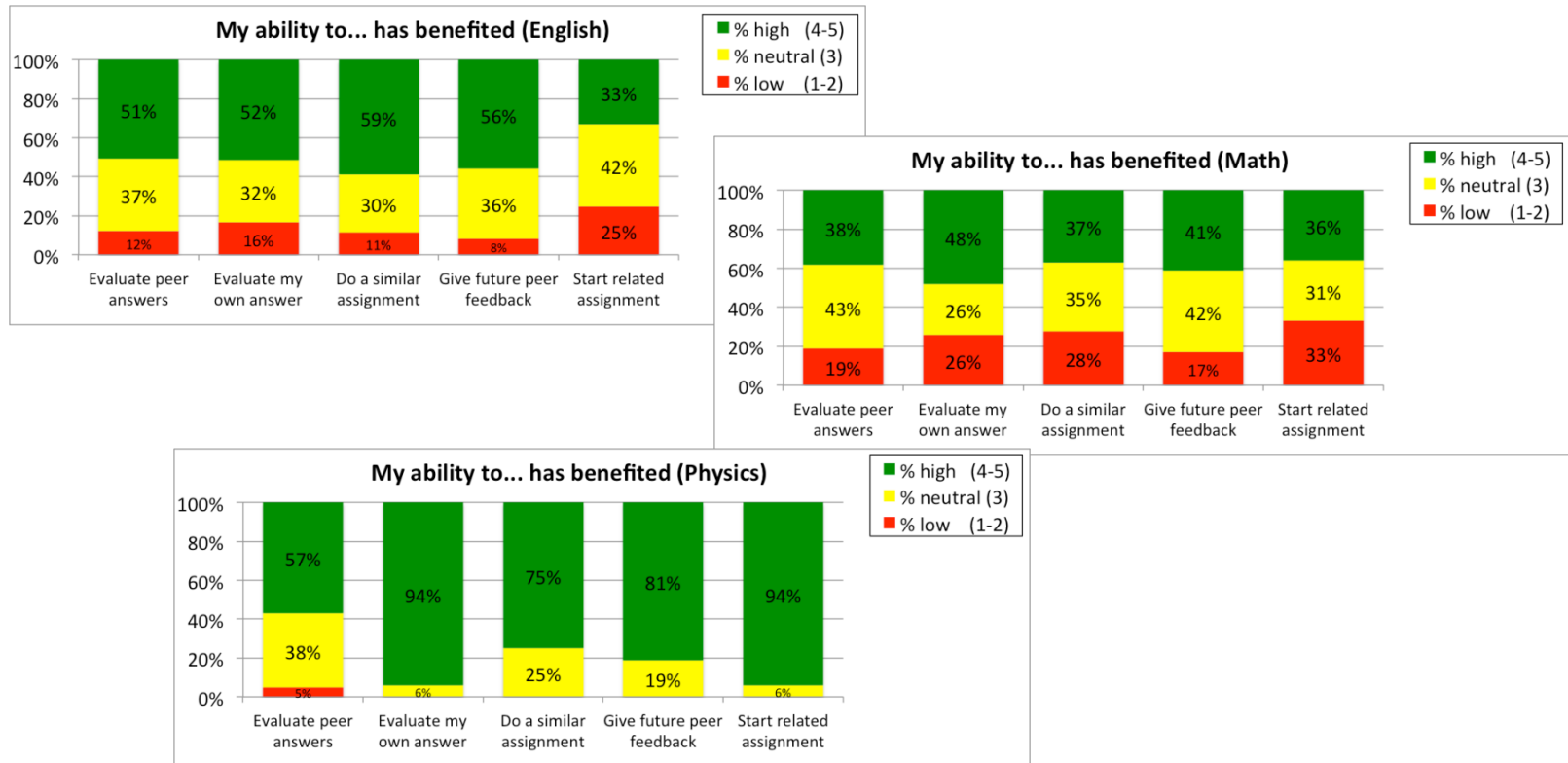
How did we assess it?

What We Learned - Students & Usability



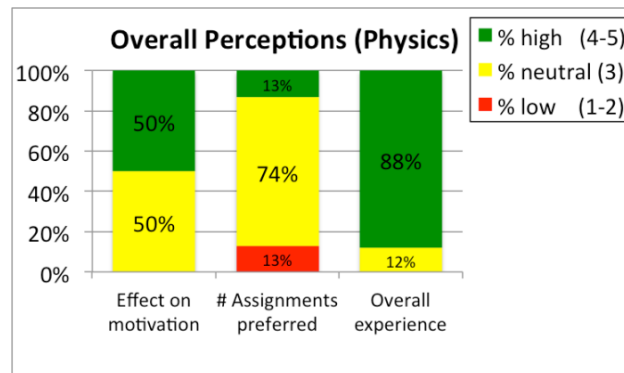
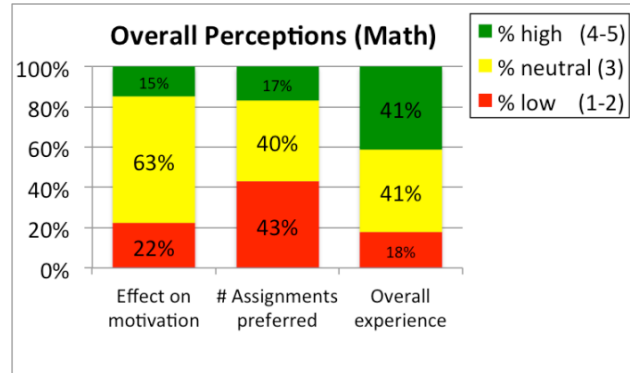
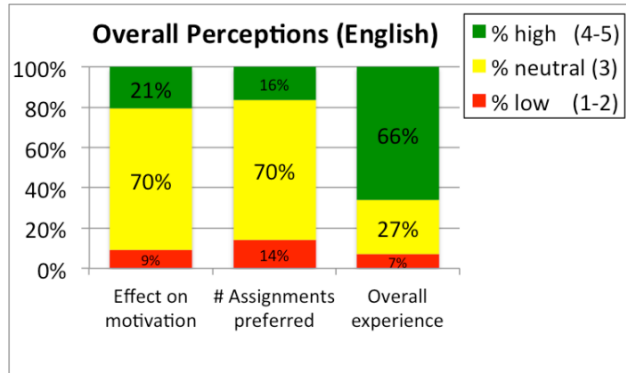
How did we assess it?

What We Learned - Students & Usefulness



How did we assess it?

What We Learned - Students & Both



How did we assess it?

What We Learned - Student Experience

- Math course provided valuable contrast
- Looking at the **context** of the assignments (introduction, design, integration) as reported by instructors/TAs, helped identify:
 - What made English/Physics experience *more* satisfactory for students?
 - What made Math *less* satisfactory?

How did we assess it?

What We Learned - Student Experience

- Context + student comments revealed...
 - **Introduction:** Students needed to understand what course skill ComPAIR helped them develop
 - **Design:** Students liked more guidance (criteria, rubrics) for comparing and writing feedback
 - **Integration:** Students saw more value in ComPAIR when it played a clear role in something concrete within the course

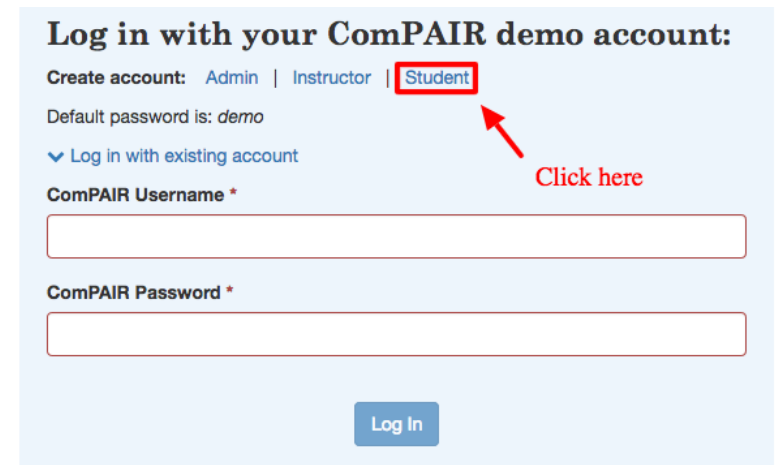
How did we assess it?

Examples of What Student Input Changed

- Ways to improve peer feedback:
 - **User interface:** change *where* feedback happens
 - **Grading:** assess *both* answer and feedback
- Ways to improve confidence:
 - Show ranking for only top few answers
 - Keep peer feedback confidential
- Focus of ComPAIR itself on comparisons as learning tool vs. peer-based assessments

How does it work?

1. Go to: **compairdemo.ctlt.ubc.ca**
2. Next to “Create account”, **click the student link** to set up a demo account (see image at right).
3. **Select “ComPAIR Demo Course”** on the home page.
4. **Click “Answer”** next to the “*What is the best film of all time?*” assignment.



Log in with your ComPAIR demo account:

Create account: [Admin](#) | [Instructor](#) | [Student](#)

Default password is: *demo*

✓ Log in with existing account

ComPAIR Username *

ComPAIR Password *

Log In

How does it work?

5. Click “Compare Answers” for the “*What is the best film of all time?*” assignment.
6. Complete 3 comparisons.

Log in with your ComPAIR demo account:

Create account: [Admin](#) | [Instructor](#) | [Student](#)

Default password is: *demo*

✓ Log in with existing account

ComPAIR Username *

ComPAIR Password *

[Click here](#)

Log In

How can you get it?

- ComPAIR is available to everyone as an open-source project under GPL v3 licence
- ComPAIR demo instance is available at: compairdemo.ctlt.ubc.ca
 - Reset every night!
- Options to deploy your own instances:
 - Docker
 - Kubernetes
 - AWS
 - General Linux Server Installation

Questions?

- ComPAIR website: ubc.github.io/compair
- ComPAIR code: github.com/ubc/compair
- Stay tuned for our article in *Teaching and Learning Inquiry* this year...

Thank you for coming today!

The ComPAIR project was supported by a grant from the UBC Teaching and Learning Enhancement Fund and with support in kind from the UBC Center for Teaching, Learning and Technology (CTLT). We would like to thank our contributors: Simon Bates, Professor of Teaching in Physics and Academic Director of CTLT; Marianne Schroeder, Associate Director, Teaching and Learning Technologies at CTLT; John Hsu and Michael Tang, Programmer Analysts at CTLT; Philip Lee and Kolja Schwenghagen, co-op students at CTLT; Dallas Hunt, Garth McClure, Morag McGreevey, and Michael Taylor, Teaching Assistants for the pilot section of ENGL 110.