Welcome!

To participate in the interactive section of this workshop:

1. On your laptop, go to tinyurl.com/fbf-cel-workshop
2. Follow the instructions to enroll in the course we will use
Using writing analytics to provide instantaneous, formative feedback to facilitate holistic learning
Presenter introduction

Ziwei Jo Huang
Associate Product Manager (R&D)
FeedbackFruits

MSc Applied Linguistics
University of Oxford (Department of Education)

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an all-in-one solution to implement active learning design, boost student engagement and collaboration in any course setting

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Agenda

1. Presentation & demo
   Automated Feedback

2. Interactive exercise 1
   Student-directed Automated Feedback

3. Interactive exercise 2
   Peer feedback with automated feedback coach

4. Upcoming feature preview
   Insights on student contributions in text-heavy learning activities

5. Q&A

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Why | Giving feedback is valuable but takes time
Why | Growing class sizes create a feedback challenge

Academic writing assessment labor-intensive and time-consuming
Why Feedback from multiple sources

Student

Personal attention

Automated Feedback
Majority of volume, low-level feedback

Peer Feedback
Medium volume, mid-level

Teacher Feedback
Small volume, high-level expert feedback
Automated Feedback

Powered by AI, this tool provides instantaneous feedback to enhance students' performance in academic writing and stimulate deeper learning while offering teachers more time to provide higher-order feedback.

An EdTech DoTank co-creation with

[Logos of Erasmus University Rotterdam and Hogeschool Rotterdam]
...writing analytics involves the measurement and analysis of written texts for the purpose of understanding writing processes and products, in their educational contexts. [They] are ultimately aimed at improving the educational contexts in which writing is most prominent. [1]
Why | The goals of Automated Feedback

For students..

tower Instant feedback availability
tower Quality of student products
tower Stimulates active learning

For teachers..

tower Teacher review workload
tower Repetitive feedback
tower Focus on ideas
The How

Development of the tool
Pedagogy
Technology
Ethics
Development process

**Pedagogy**
- Literature on academic writing, feedback literacy, student autonomy to build pedagogical foundation [1][2][3]

**Development**
- Training and testing with manually collected data
- Experimentation with models and algorithms
- Implementation of validated product designs

**Product and user research**
- User research and testing to validate designs and solutions

**Iteration**
- User feedback, usage, and quality assurance to improve product quality and usability

**Automated Feedback**
The tool does not replace the instructor

➔ Empower teachers to focus on complex skills such as **critical thinking**, **problem solving**, **domain-specific knowledge**

➔ Feedback on higher-order concern needs to be contextual and personalized

![Feedback hierarchy diagram](image)
Technology

API; LTI integration
So teachers and students can use it seamlessly on their LMS

Reference parser
So the references in the document can be identified and connected to a database

Document parser
So parts and data of students’ working document are identified and extracted

Syntactic parser
So the structural relationship in the text is identified

ML- and rule-based algorithms
So appropriate feedback is given on each submission
We embrace EU Guidelines for Trustworthy AI [4][5][6]

Celebrate **ethics by design**

The AI **does not have access to student data** without explicit consent

Provides **formative and constructive** feedback: grading is a human action

Students and teachers can always **object to incorrect feedback** at any time
What

Criteria and interface
What | Current criteria

Content & Structure
- Document language
- Required sections
- Sentence length
- Word count
- Linking words
- Paragraph length

Academic Language
- Abbreviation introduction
- English only
- Grammar
- Personal pronouns
- Vocabulary
  > Distinguish commonly confused words
  > Concise writing
  > Proper word combinations
- Active voice
- Punctuation
- Spelling
- Verb tense
- Formal writing style
  > Avoid contractions
  > Avoid starting a sentence with coordinating conjunctions
- Punctuation
  > Avoid run-on sentences
- Vocabulary: Precise writing

Tables & Figures
- Figure count
- Table count
- Figure captions
- In-text citation of figures
- Table captions
- In-text citation of tables

Citing & Referencing
- Citation count of references
- Reference count
- Citation style
- Reference content
- In-text citation of references
- Direct quotation usage
- Peer-reviewed references

Format
- Page number
- Table of contents

FeedbackFruits
What | Use with other FbF Tools

with Peer Review

Stand-alone

with Assignment Review
What

Impact
### Usage, engagement, feedback

<table>
<thead>
<tr>
<th>Institutions</th>
<th>Teachers</th>
<th>Students</th>
<th>Submissions</th>
<th>Annotations</th>
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**Average feedback usefulness**

4.55/5 (n=37k)

**Objection (error) rate**

1.4%
Ultimately, I’d like to provide detailed feedback for every single assignment, but that’s unrealistic. Automated Feedback did something I couldn’t provide for students.

It reduced the amount of students that quit because it diminished their anxiety level while writing their thesis. It provided a big confidence boost to ensure they believe they could actually deliver good work.
Demo

Setting up an Automated Feedback activity in Canvas
Interactive exercise 1.
Student-directed Automated Feedback

An EdTech DoTank co-creation with

1. Navigate to the learning activity
   Student-directed Automated Feedback

2. Upload a document of your choice
   Any academic papers will work! We recommend a short one for this workshop.

3. Read feedback with criteria of your choice and play around on the tool

4. Discuss in groups
   - Was the tool easy to use?
   - Is the feedback helpful?
   - Are you missing anything from the tool and the feedback you received?
   - How would you use the tool in your context?
Interactive exercise 2.
Peer feedback with automated feedback coach

1. Navigate to the learning activity

2. Give feedback to your assigned peer based on the rubric

3. Write, then rewrite your feedback. Compare the different feedback that you receive from the coach.

4. Discuss in groups
   - Was the feedback you received from the feedback coach useful?
   - How would you improve it?
The future
Soon available | Insights on student contributions
Future directions

- Actionable learning insights
- Personalisation
- Impact evaluation
- And more... with you!
Final discussion and Q&A
Ziwei (Jo) Huang
Associate Product Manager (R&D)
FeedbackFruits

Connect with me on LinkedIn!

linkedin.com/in/ziweijohuang/
References and resources


