JALTCALL

Developing and piloting an application for measuring real-time learner engagement levels in foreign language classrooms

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Acknowledgements

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https://kaken.nii.ac.jp/en/grant/KAKENHI-PROJECT-20K00839/

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Background

Theory of Engagement

Background

Engagement

- Student attention, curiosity, interest, optimism, and passion
- One manifestation of motivation
- Expressed in a particular moment through active involvement in the learning process

Background

- Previous studies recognize multiple types of engagement (Yazzie-Mintz 2009):
  - **Behavioral** engagement
  - **Cognitive** engagement
  - **Emotional** engagement
  - **Social** engagement

Background

- **In our classrooms**, push for more active learning through:
  - greater student involvement
  - more communication
  - participation
  - autonomy
- Requires increased engagement to attain

Background

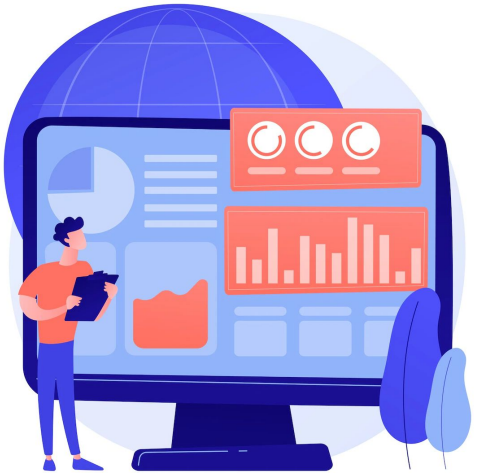
- However, measuring engagement is challenging
- Available engagement measures have many downsides

"Most existing measures of student engagement are not designed to look at changes during class and do not provide moment to moment data."

- Fuller et al. 2018

Background

- Previous classroom engagement studies have included:
  - Teacher observation
  - Third party observation
  - Heart rate monitors
  - **Students self-reflection**



Background

- **Experience-sampling** *"enable[s] us to learn about […] participants feelings, thoughts, actions, context [in] their daily lives"* (MacIntyre, Mercer, Gregerson, 2020)
- **Goal:** Create a self-reflective tool to measure engagement in-the-moment with minimal lesson disruption.

Background

This project uses three likert-scale statements attempting to measure real-time engagement:

- **Cognitive:** *I am exerting a great deal of mental effort right now*
- **Behavioral:** *I am participating actively in class activities right now*
- **Emotional:** *I am feeling positive about this class right now*

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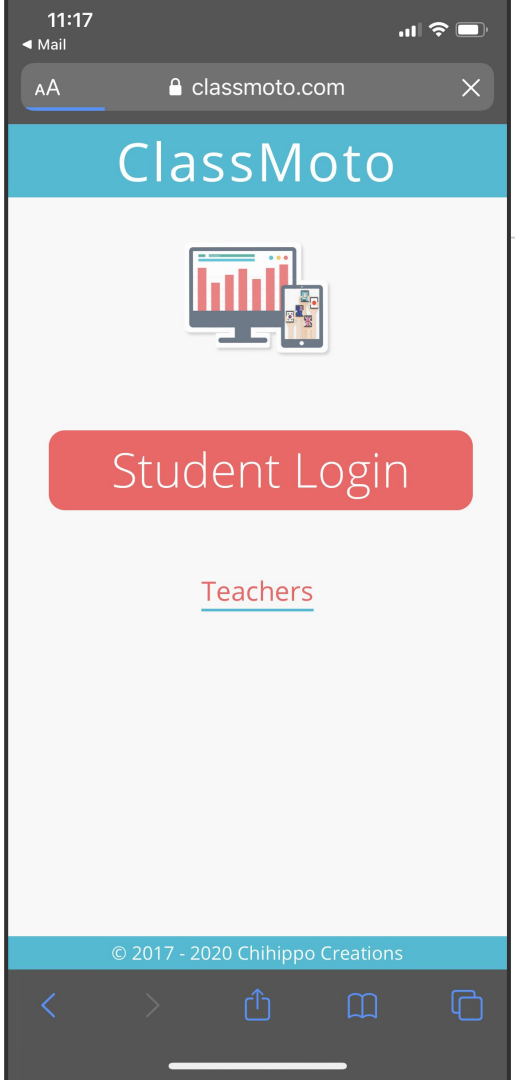
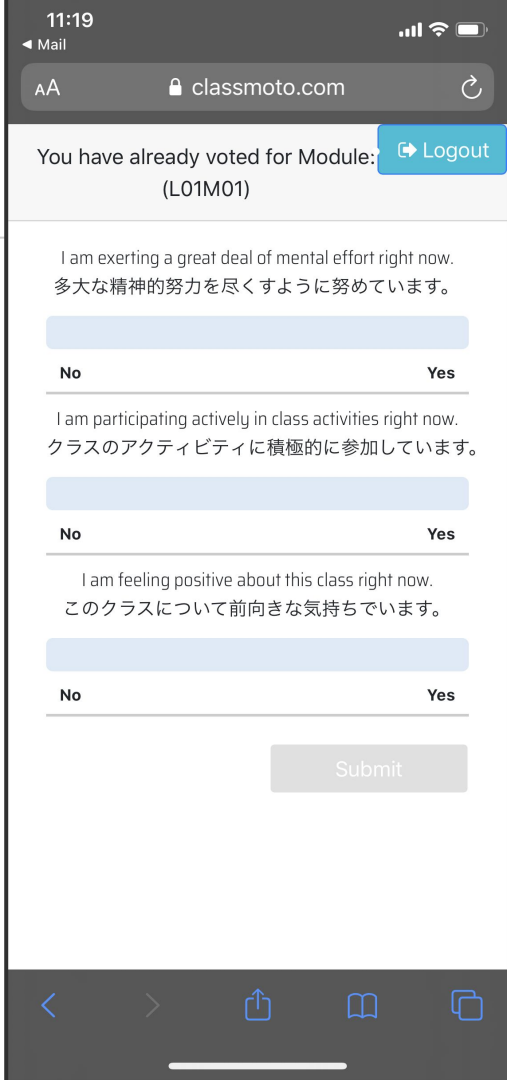
Methodology

Details of “Classmoto” (CM)

Classmoto

- Accessible via any smart device or PC
- Students login via assigned PIN
- Ability to interact with three sliders to report engagement





Response Statements

- Students respond to the three distinct engagement measures by tapping the slider based on their agreement level

Dashboard
Message Board
Quick Start
Course
FLRW 07
Lesson
Lesson 25
Module
L25M03
Create:
Lesson Module
End:
Lesson Module
Courses
Lessons
Modules
Students

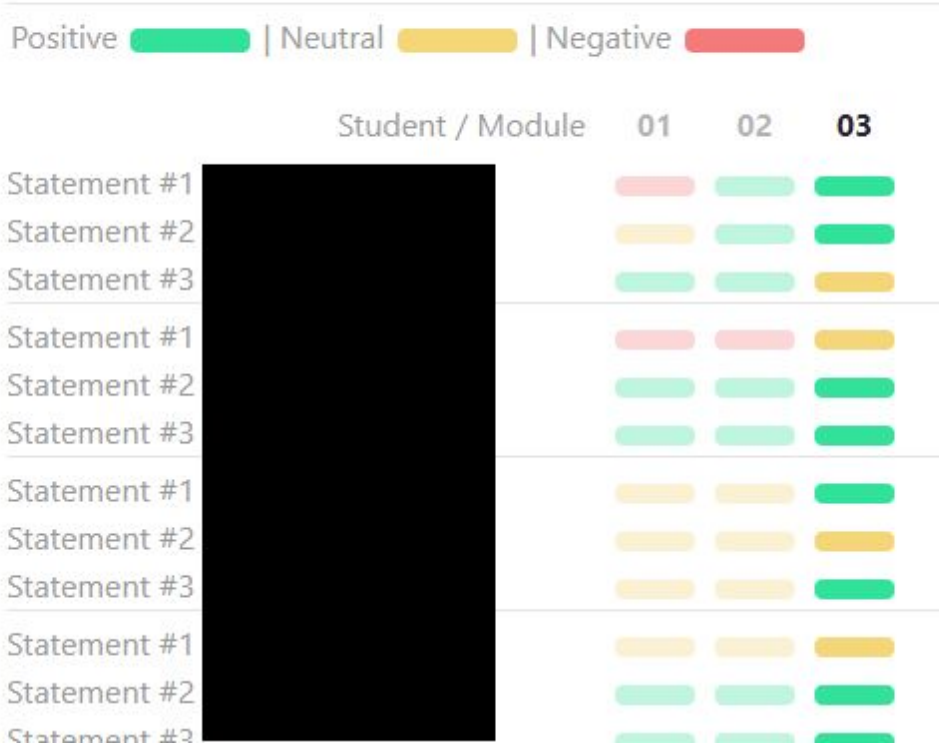
Lesson 25 Student Response by Module

Positive | Neutral | Negative

Student / Module	01	02	03
Statement #1			
Statement #2			
Statement #3			
Statement #1			
Statement #2			
Statement #3			
Statement #1			
Statement #2			
Statement #3			
Statement #1			
Statement #2			
Statement #3			

Teacher's Console

- Displays live aggregate & individual results
- Teacher activates "modules" to prompt students for feedback
- Color coded student response levels



Teacher's view

- Measure at the end of distinct activities
- Tag activities by **learning purpose** & **type** for later analysis of possible engagement patterns

Instructional variables/learning purpose	Key	Activity type	Key
grammar	1	productive	A
listening	2	receptive	B
reading	3	individual	C
writing	4	pair	D
vocabulary	5	group	E
speaking	6	fluency	F
learning skills	7	accuracy	G
affective and/or social skills	8	complexity	H
reflection	9	appropriacy	I
viewing	0		

Implementation

- Two year trial followed by this pilot
- Lead researcher + 3 teachers implemented CM into existing courses
- CM piloted in ESL courses in Japan, 2020 (online)
- Emphasized as optional & ungraded for Ss
- Introduced & clarified CM early-semester with instructional slideshows

Implementation

Typical integration:

- 1 “module” per activity; e.g. journal writing & group discussion = 2 modules
- 3-4 modules per 60-minute lesson
- **End of activity:** module activated by teacher, Ss report engagement, & teacher closes module
- Begin next task, repeat the process

Project Details

- 7 full semester courses
- 124 students
- 205 CM lessons (75.9% of total)
- 497 CM modules activated
- Average 2.3 per lesson
- 7409 CM feedback responses

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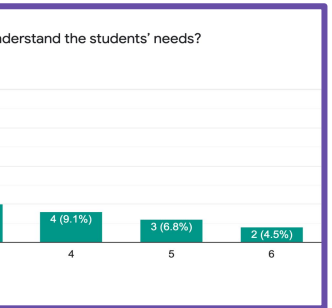
Results & Discussion

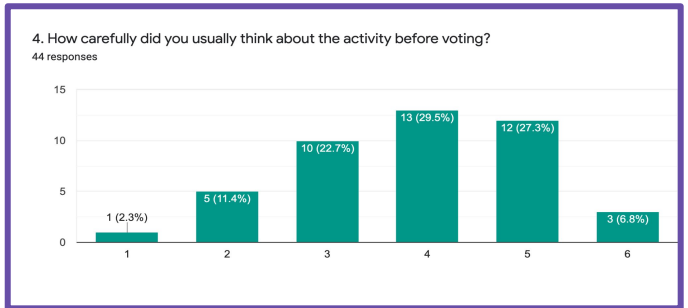
Reflections on Teacher and Student Experiences

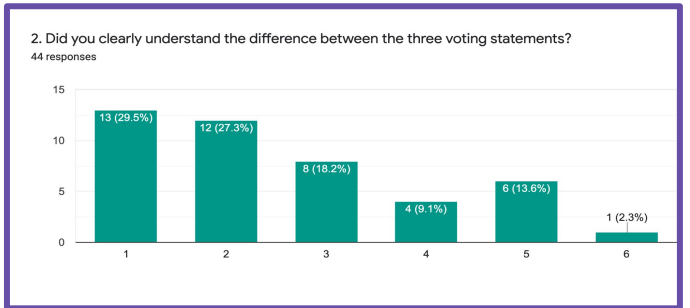
Results

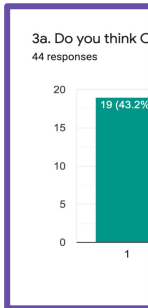
At project conclusion, we collected CM feedback:

- Student survey
  - **44 responses** out of **124 students**
- Post project teacher interviews









Teacher Reactions

- Potential for real-time reflection
- Qualitative course feedback
- Integrates well in online context
  “[I was] able to get a temperature reading of the online classroom at any given time”

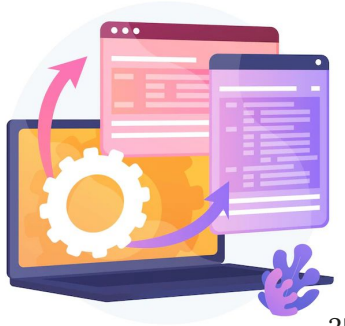
Student Reactions

- Helped teacher-student communication
  “it made me feel more comfortable to send messages to the teacher.”

- Valuable self-reflection
  “This survey provided an opportunity for me to reflect on my own efforts each time.”

Teacher Perceptions of CM Usage

- Alternative online classroom observation method
- Raised teacher awareness of lesson flow
- However, little impact on lesson adjustments



Student Perceptions of CM Usage

- 25% of Ss did not fully understand the difference between the 3 engagement measures (n=11)
- Uncertainty of CM's purpose:
  - Teacher observation tool (n=44)
  - Student self-reflection tool (n=21)
  - Unsure if responses had impact (n=14)

Teacher CM Fatigue

- CM added to existing teacher burdens
- Managing lesson flow reduced chances for real-time observation via CM
- Covering planned material prioritized over adapting lesson based on CM feedback
- Reflexive vs. reactive = data not dynamically utilized; i.e. CM not used to “read the room” and make live adjustments

Student CM Fatigue

- CM responses became routine - may have affected reliability
- Too many feedback requests per lesson
  - *“I felt there was [sic] too many times of voting since we voted when we finish [sic] each session”*
- Apathy towards CM / the process (n=23)

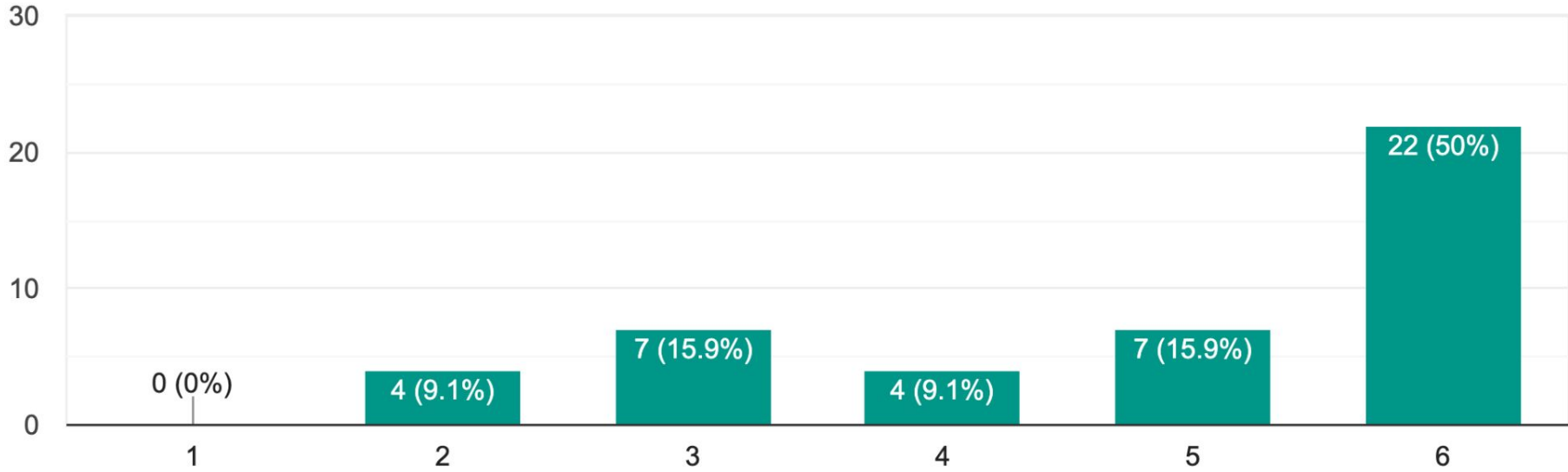
Student CM Fatigue

Consistently high engagement responses

- Many responses considered too quick for adequate reflection
- Concern over teacher reaction to negative feedback (n=12)
- Pressure to provide disingenuous response (n=6)

5. Do you find voting disrupted the lesson?

44 responses



Likert Scale = 1 is absolutely, 6 is not at all

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Conclusions

Innovations & Implications

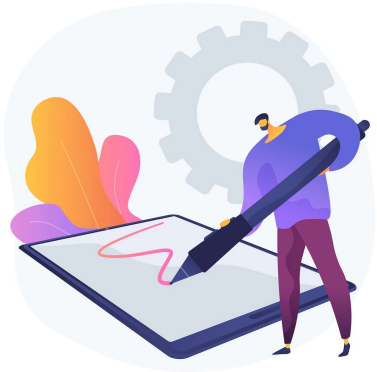
Conclusions

Project reaffirmed challenges of measuring engagement (Philp & Duchesne, 2016)

- Balancing instrument reliability & lack of disruption
- Unrealistically high engagement levels (e.g. concern for teacher feelings, apathy, high = “good”)

Conclusions

- Teachers can gain direct insight into lesson reception
- Modularization allows for class structuring: time management, delineation of tasks



Implications

- **Student empowerment:** could grant Ss access to their own learning analytics
  - Added to current version of CM
- **Teacher training instrument** (time management, explicit transitions, ideal task length / variety)

Implications

- Use in **novel / newly** developed activities to gauge interest
- **Teacher analysis of data** → identification of trends / patterns → influence on future course direction
- (Demodulated) CM can be used to “spot check”, read the room, make adjustments

Innovation in Language Learning and Teaching Journal

- Measuring real-time learner engagement in the Japanese EFL classroom
  - https://www.tandfonline.com/doi/abs/10.1080/17501229.2021.2025379
- Open Access pre-print on ResearchGate

Q & A