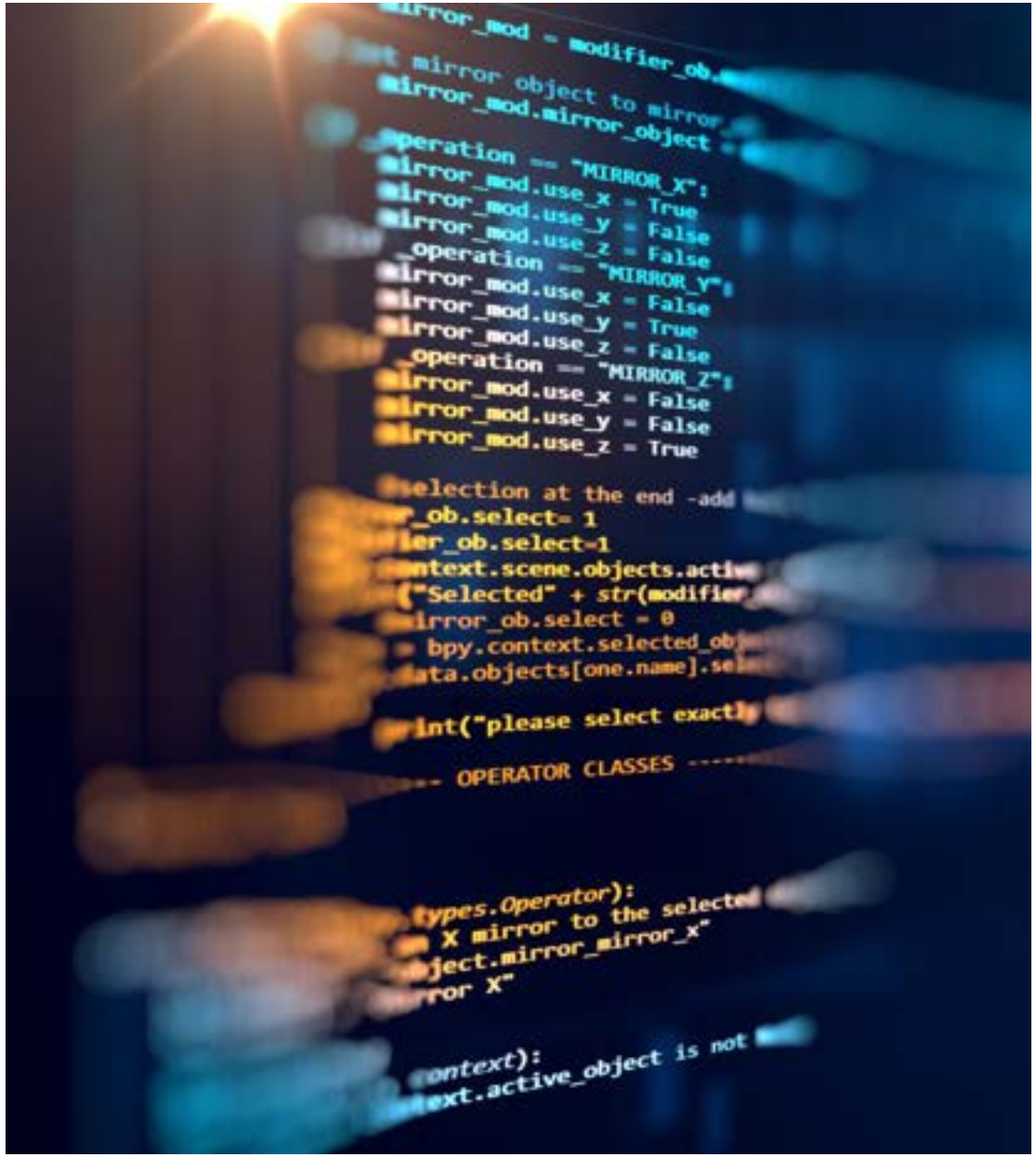
The GIGA School Program Year 1: Teacher and Student Perspectives Regarding the Implementation of One-to-One Devices in English Lessons

Steven Lim

What is the GIGA School Program?



GIGA School Program

- One-to-one program: one device (Chromebook or tablet) for each student in primary and secondary education
- Original date March 2023 – Revised date March 2021
- Schools closed March–June 2020
- Almost no online lessons conducted in this period (Sato, 2020)

Japan last among OECD countries for ICT in Education (PISA - 2018)

% of students who

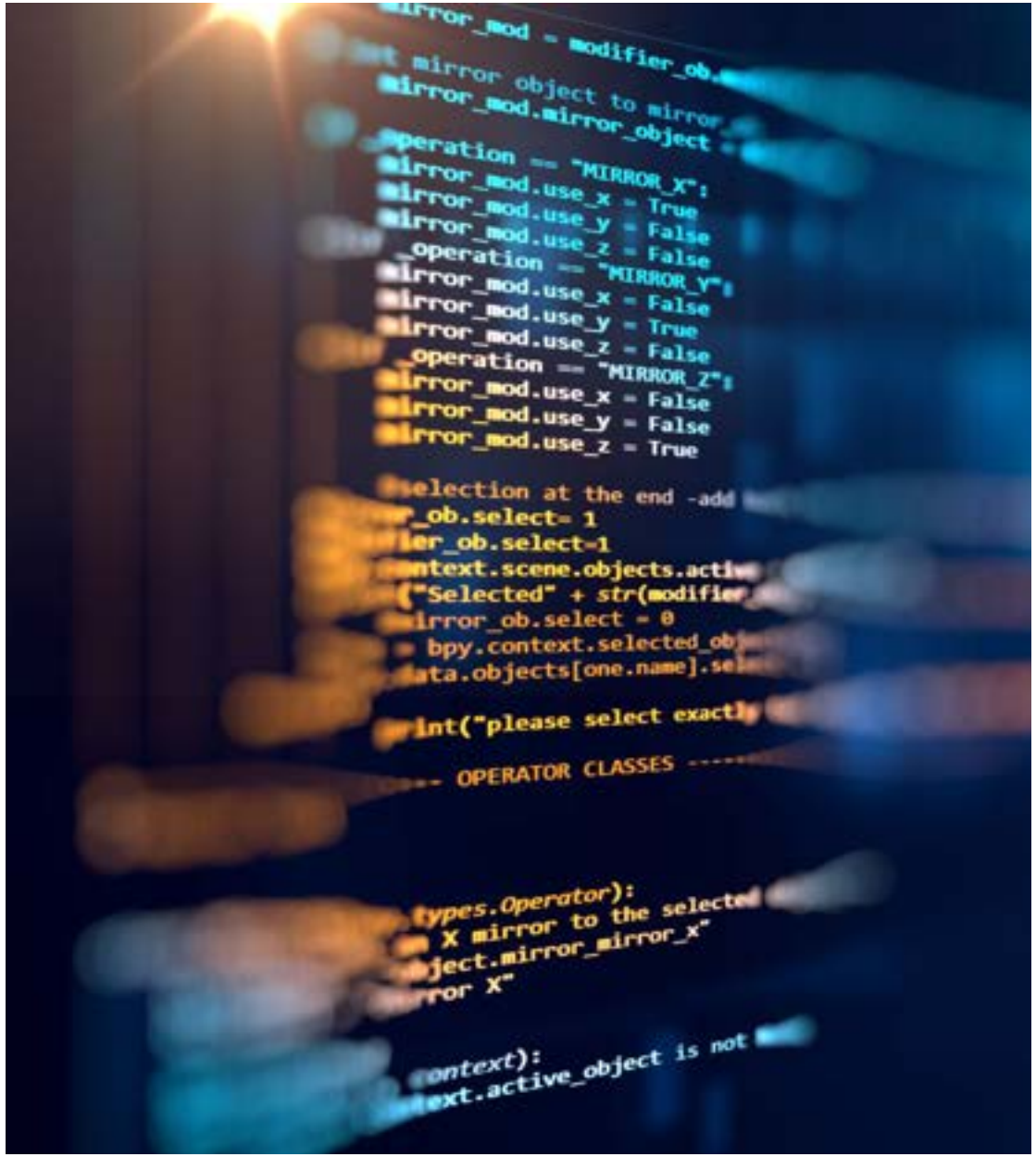
use a PC to do homework:
Average - 22.2
Japan - 3

do online research for schoolwork:
Average – 23
Japan - 6

chat online
Average - 67.3
Japan - 87.4

play single-player games
Average - 26.7
Japan - 47.7

How was the first year of the GIGA School Program?



Research Questions

- How accepting of 1-1 devices are students? How does this change over time?
- How accepting of 1-1 devices are teachers? How does this change over time?
- How do teachers utilize 1-1 devices? How does this change over time?

Participants: Teachers

Sena	Makiko
3 years experience	30+ years experience
Frequently used tech	Rarely used tech
Enthused by 1-1 devices	Unenthused by 1-1 devices
Received (limited) training	No training

Participants: Students

Year 8 Public Junior High School Students

Survey 1 - December 2021 (end of 1st CB semester)

- Sena: 143
- Makiko: 148

Survey 2 - March 2022 (end of 2nd CB semester)

- Sena: 167
- Makiko: 143

Instrumentation

12 LIKERT SCALE ITEMS

2 OPEN-ENDED QUESTIONS

TEACHER INTERVIEWS AFTER EACH SEMESTER

Likert Scale Questionnaire

Response to a positive statement written in Japanese,

e.g., Chromebookを使って英語を勉強するのは楽しいです。

(It's fun for me to use Chromebooks to study English)

6-point scale from *Strongly Disagree* to *Strongly Agree*.

Technology Acceptance Model (Davis, 1989)

TAM – Usefulness and Ease of Use

12 questions 3 constructs

- Usefulness (4)
- Ease of Use (4)
- Attitude (4)

Factor Analysis

2 Constructs

Ease of Use	(4)
Usefulness and Attitude	(8)

Ease of Use	(4)
Edutainment	(8)

a = 0.85

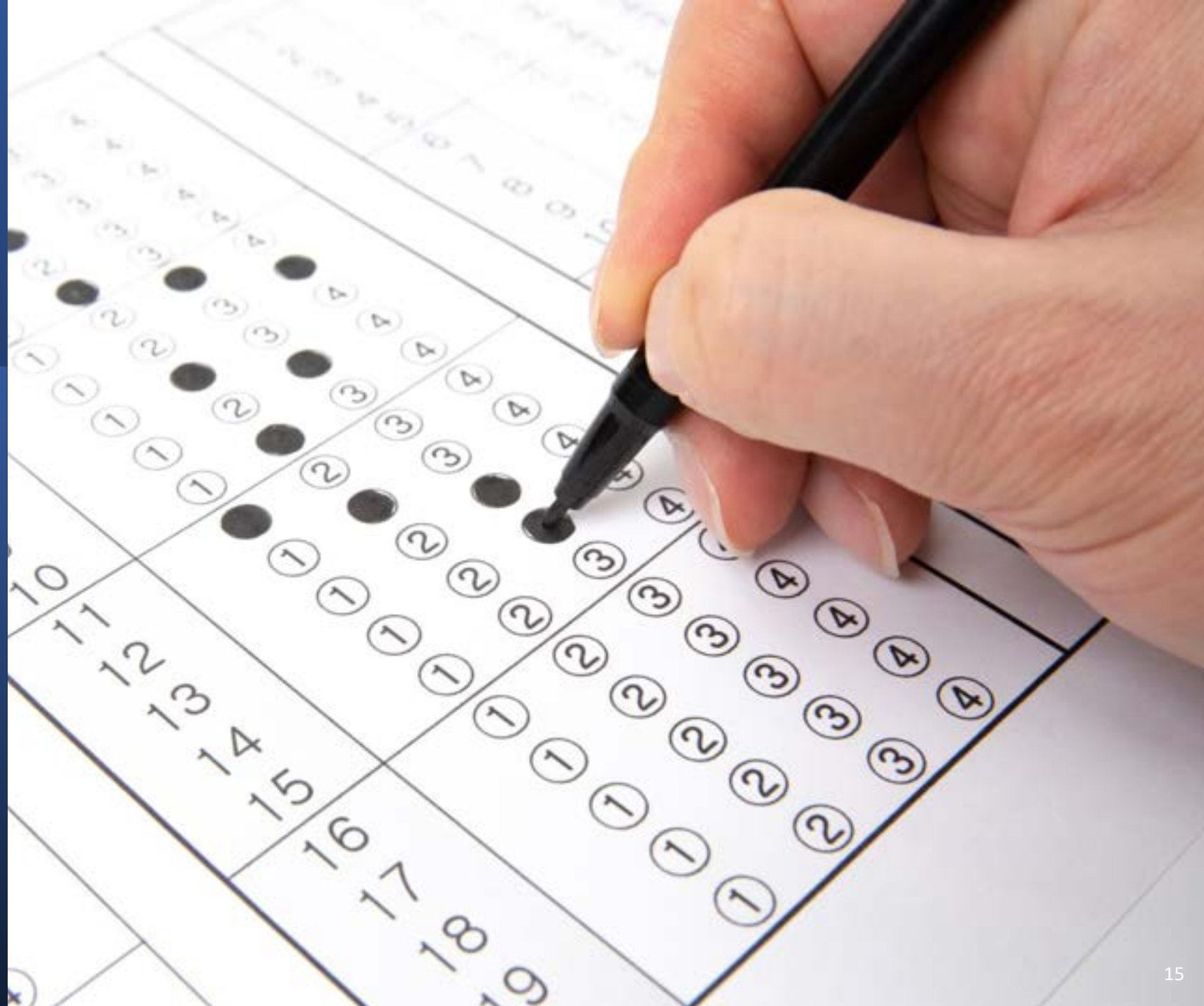
Open-ended questions

13. What points do you like about using Chromebooks in English lessons?

14. What points do you dislike about using Chromebooks in English lessons?

Results

6-Point Likert Scale Questionnaire



Edutainment and Ease of Use

	Edu 1	Edu 2	Ease 1	Ease 2
Sena's students (n = 143, 167)	4.499	4.670	4.264	4.329
Makiko's students (n = 148, 143)	4.550	4.551	4.289	4.435

Sena 1 vs 2: both signficiant but tiny effects

Edu $p = 0.016$ $d = 0.071$

Ease $p = 0.034$ $d = 0.089$

	Edu 1	Edu 2	Ease 1	Ease 2
Mean	4.499	4.670	4.264	4.329

n = 143, 167

Makiko 1 vs 2: no significant change

	Edu 1	Edu 2	Ease 1	Ease 2
Mean	4.550	4.551	4.289	4.435

n = 148, 143

Good and Bad Points of Chromebooks

13. What points do you like about using Chromebooks in English lessons?

14. What points do you dislike about using Chromebooks in English lessons?

Responses in Japanese were translated

- 1. Text Mining (KH Coder)
- 2. Coding (QDA Miner Lite)

Text mining

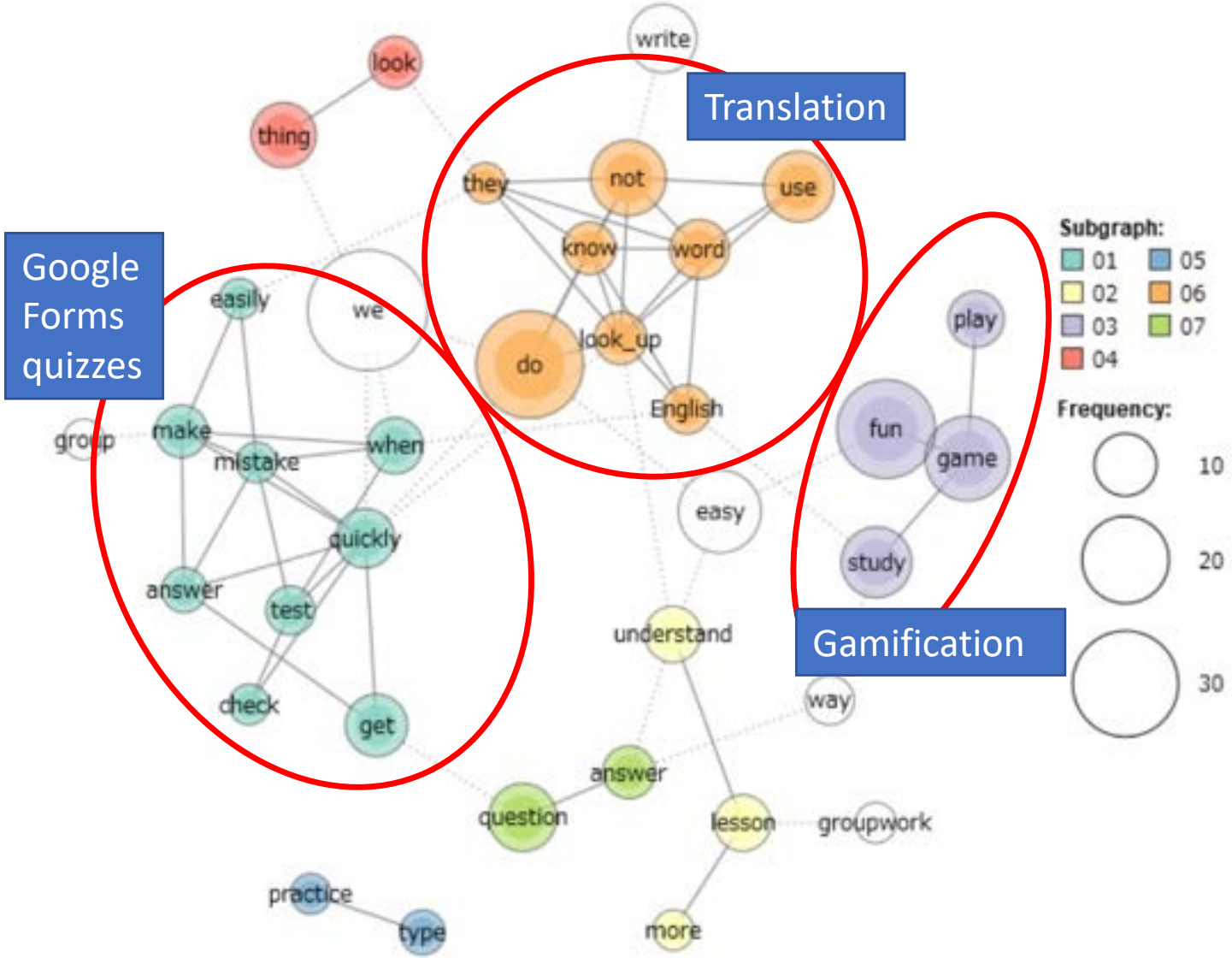
Co-occurrence Network

- Translated answers to 13 + 14 inputted into KH Coder
- I attached labels to co-occurring word groups based on written student responses and teacher interviews

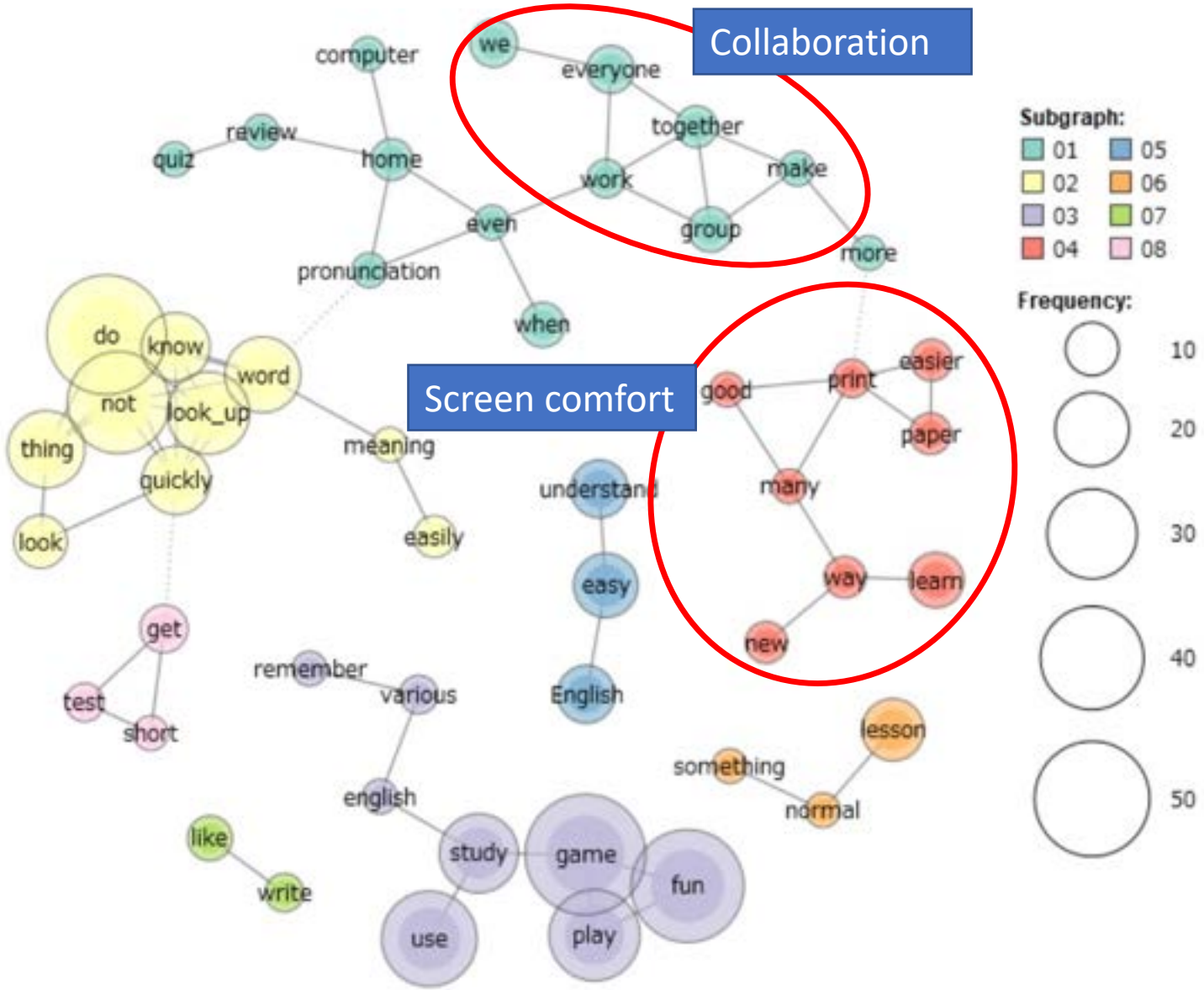
N.B.

- Words appearing less than 4 times were excluded
- Unrelated words were excluded (e.g., articles)
- Bubble size indicates frequency
- Thick lines indicate close connections

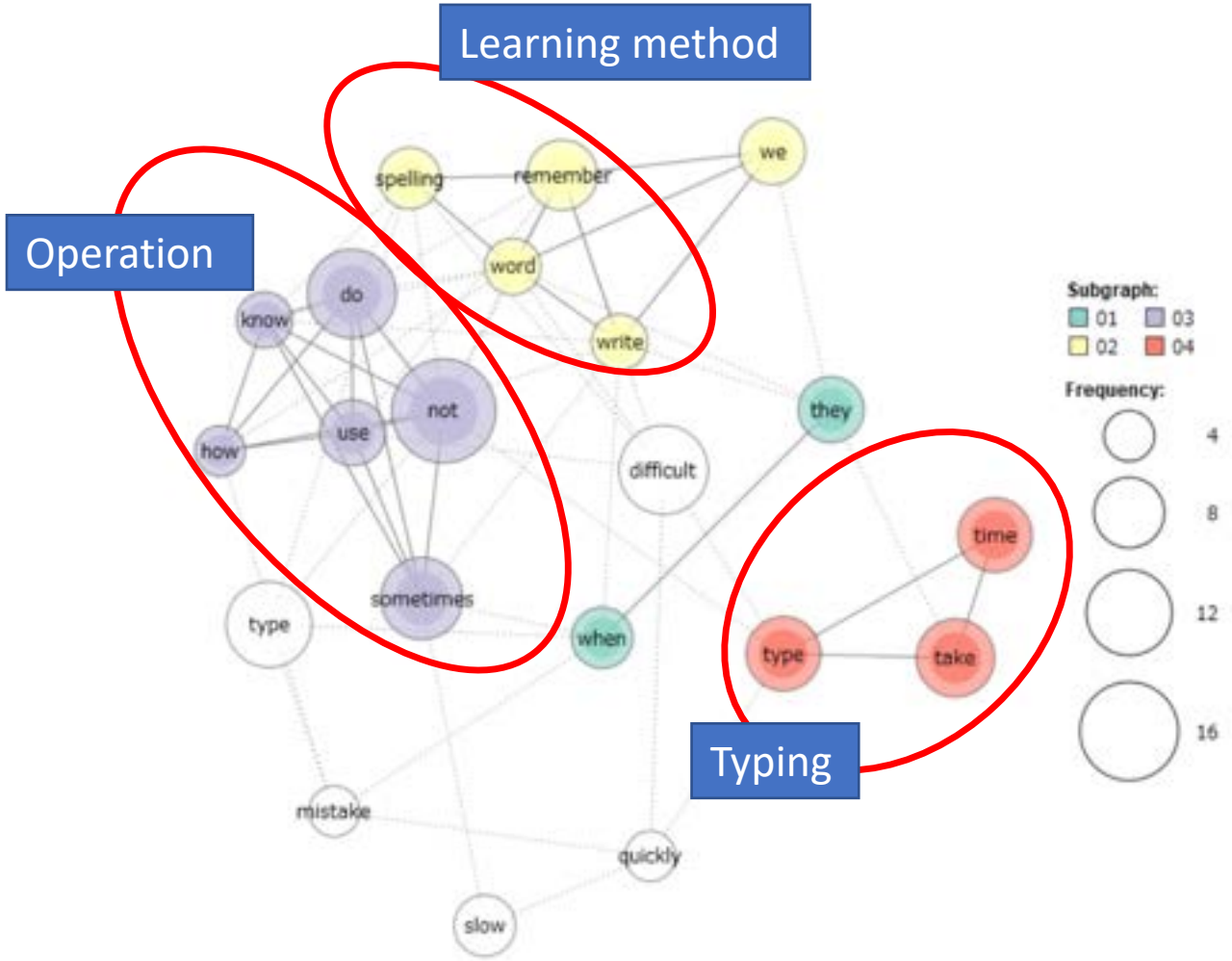
Sena 1
Good Points
(n = 143)



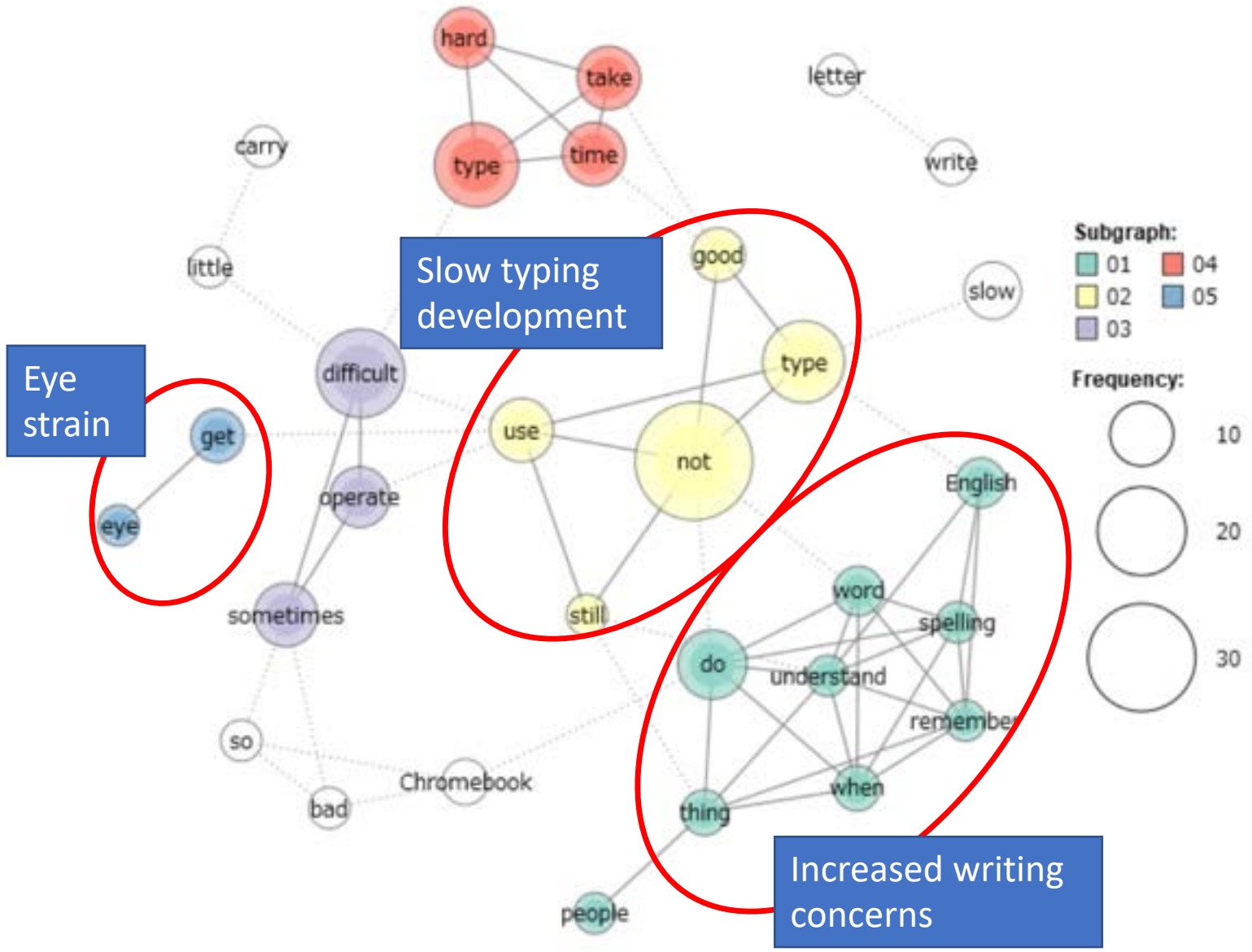
Sena 2
Good Points
(n = 167)



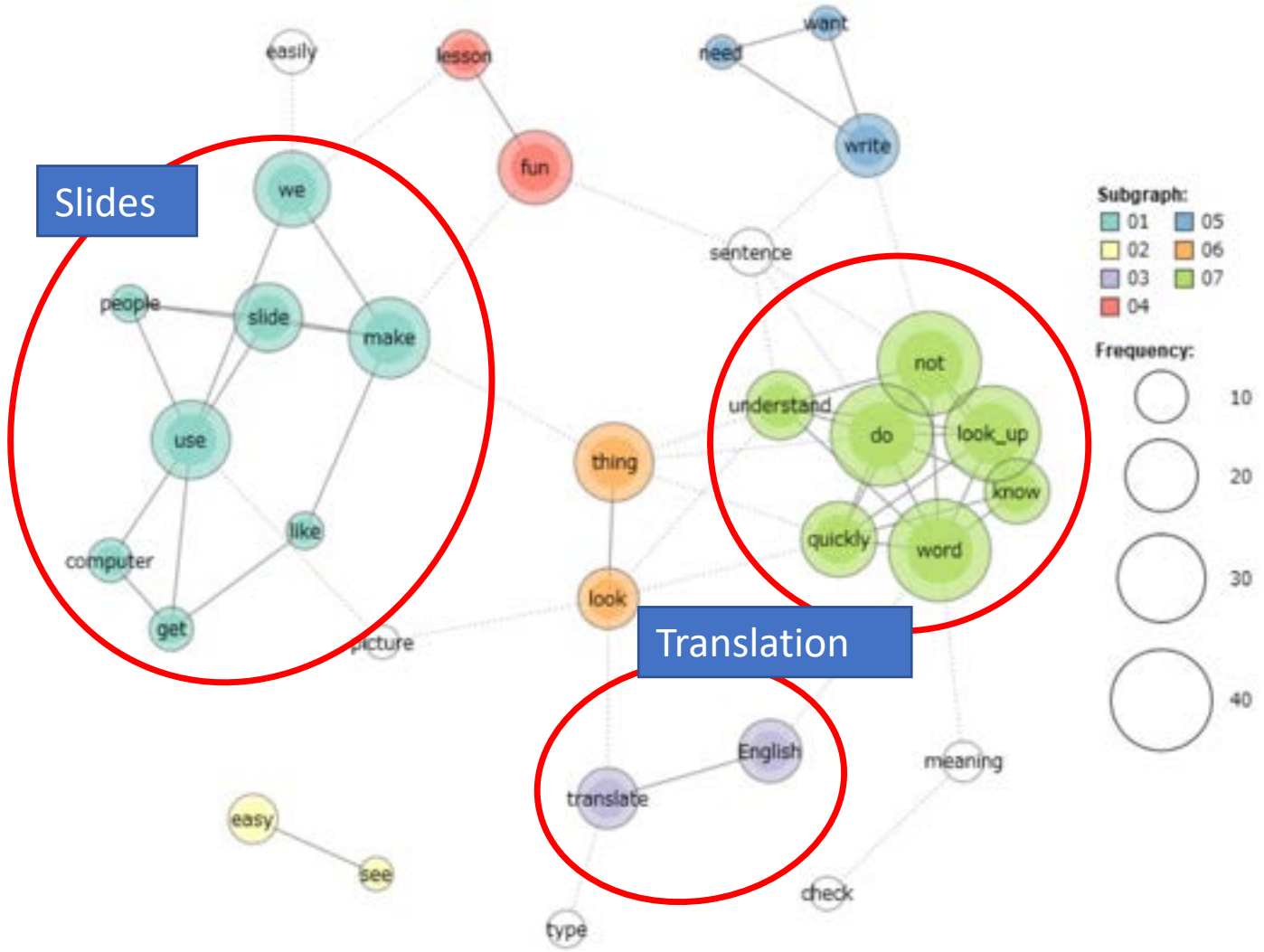
Sena 1
Bad Points
(n = 143)



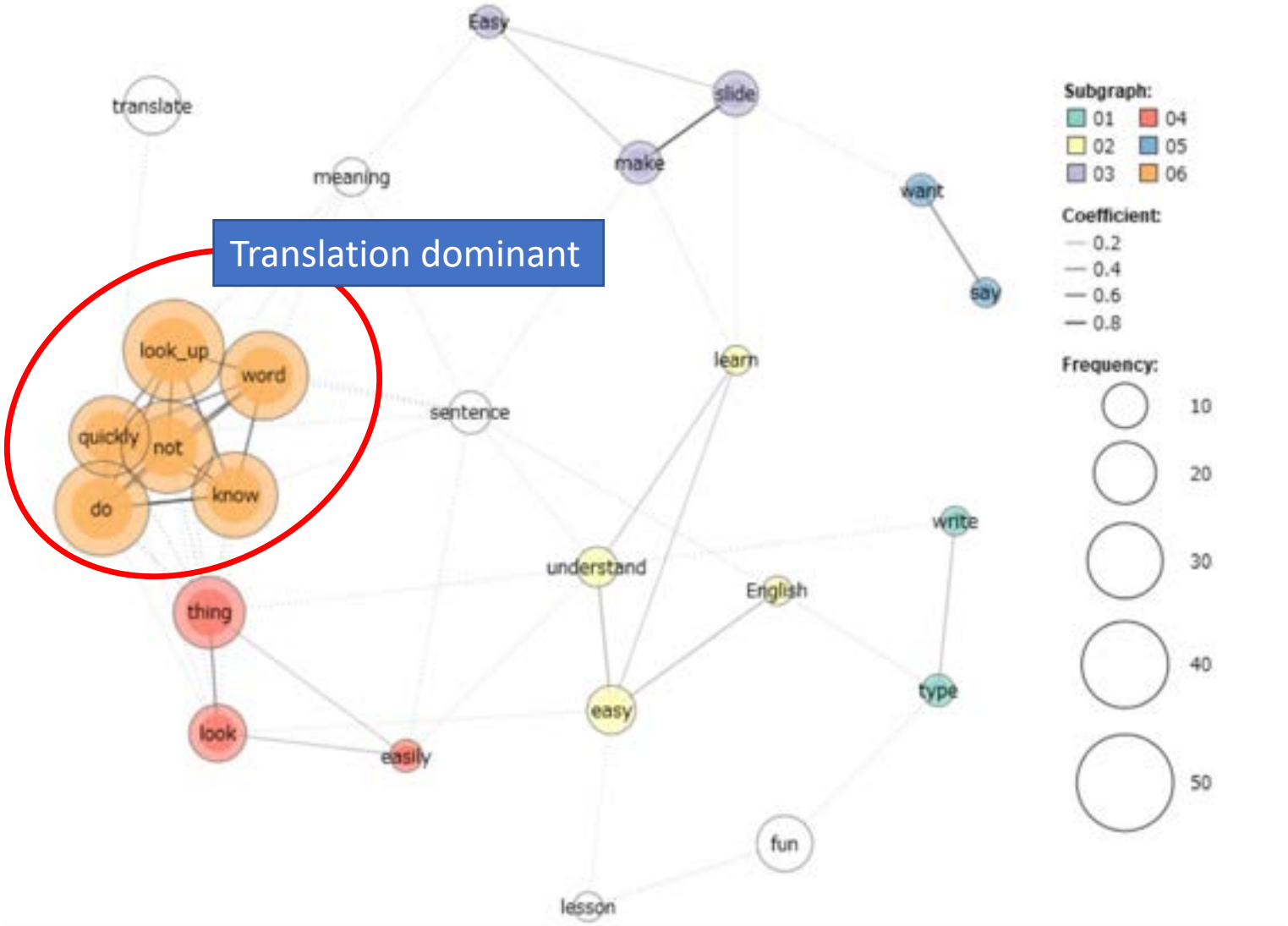
Sena 2
Bad Points
(n = 167)



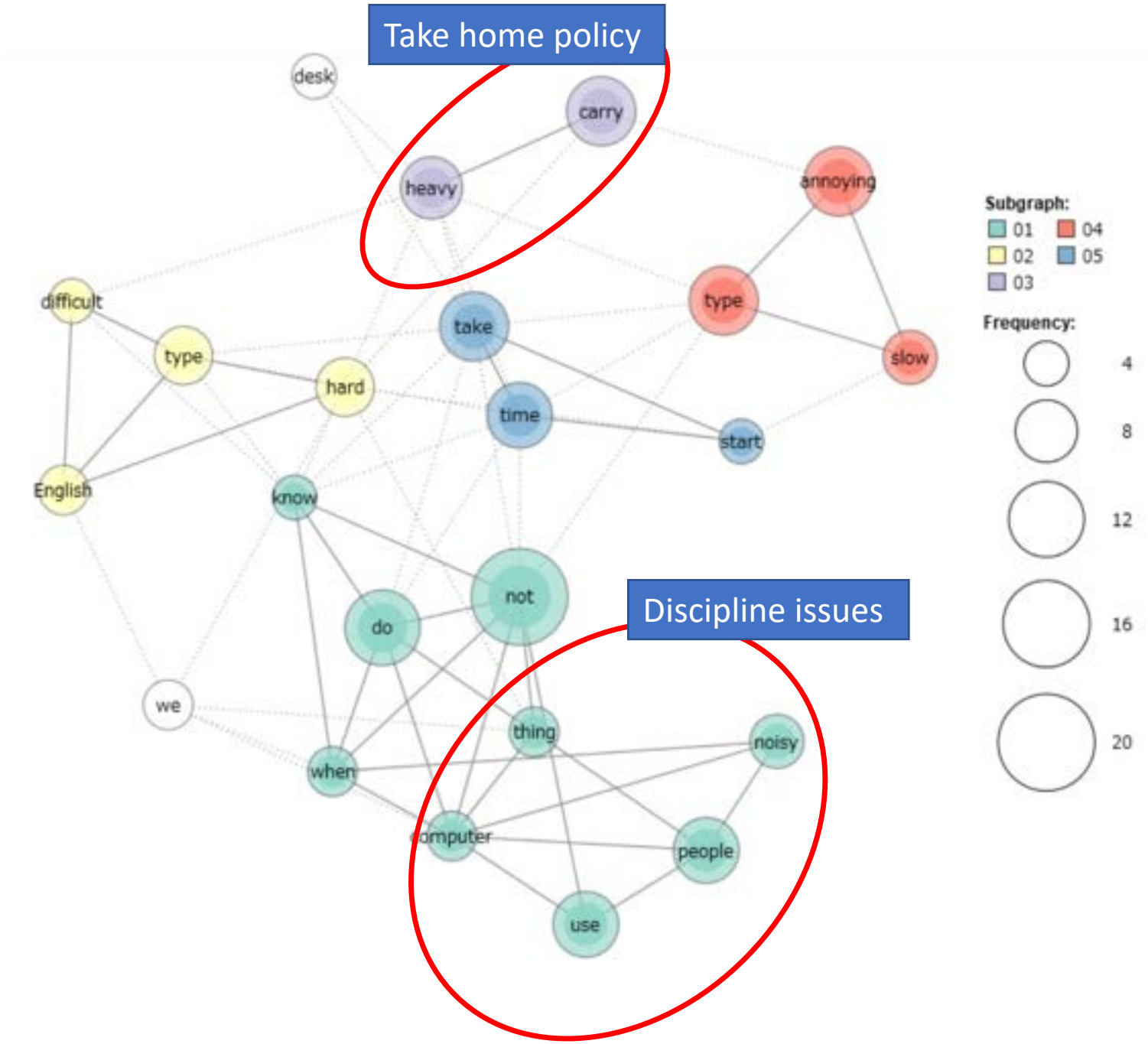
Makiko 1 Good Points (n = 148)



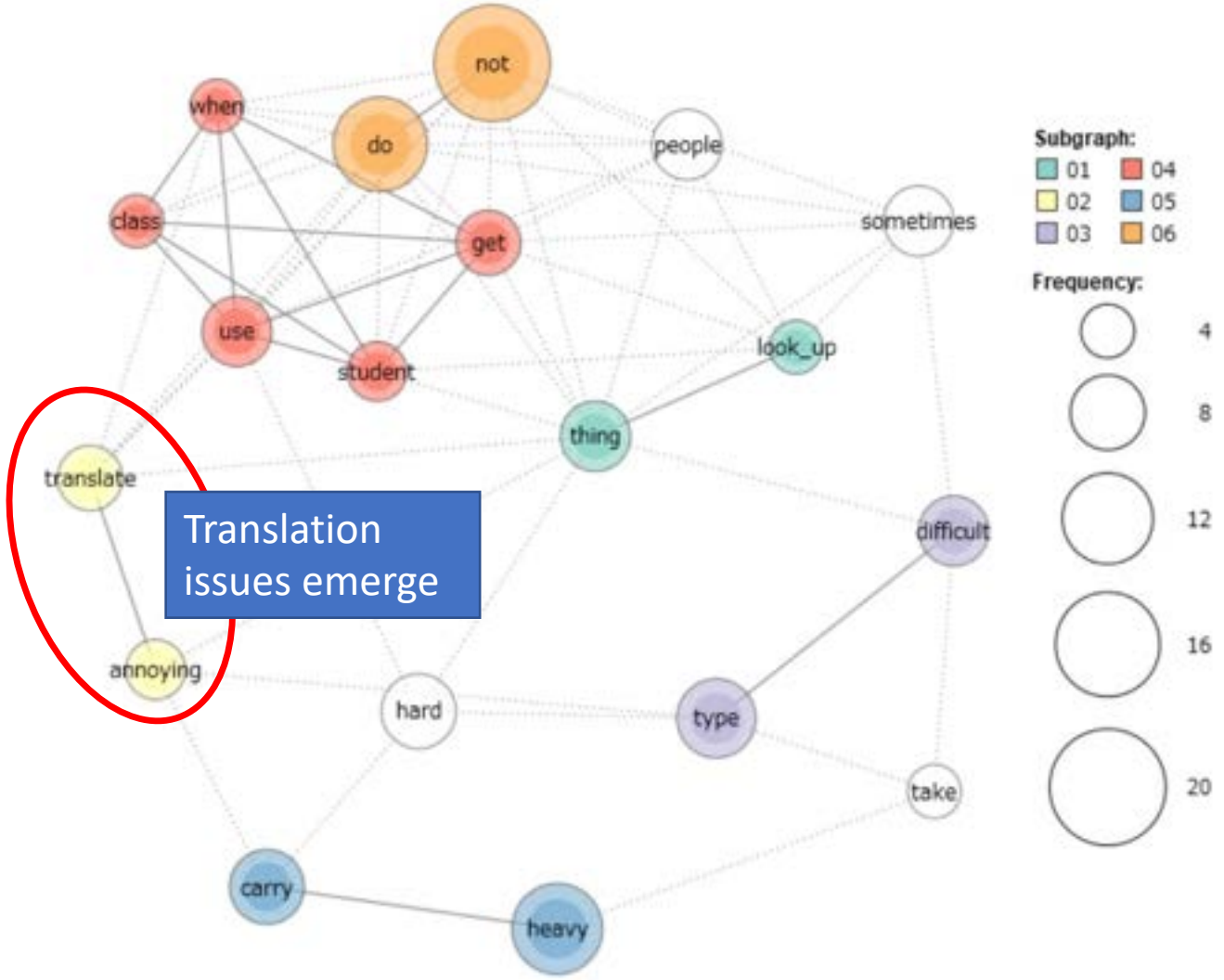
Makiko 2
Good Points
(n = 143)



Makiko 1 Bad Points (n = 148)



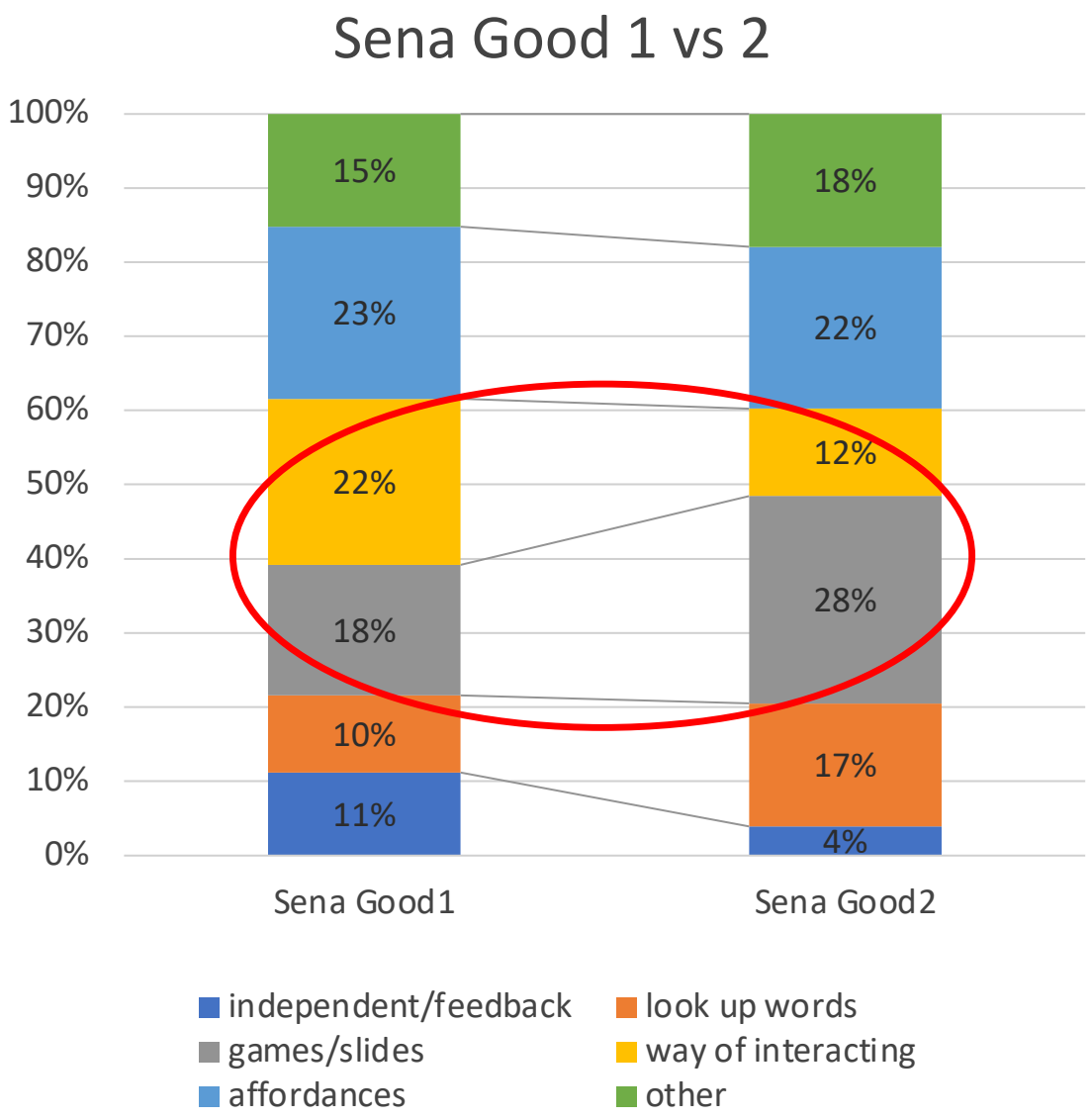
Makiko 2 Bad Points (n = 143)

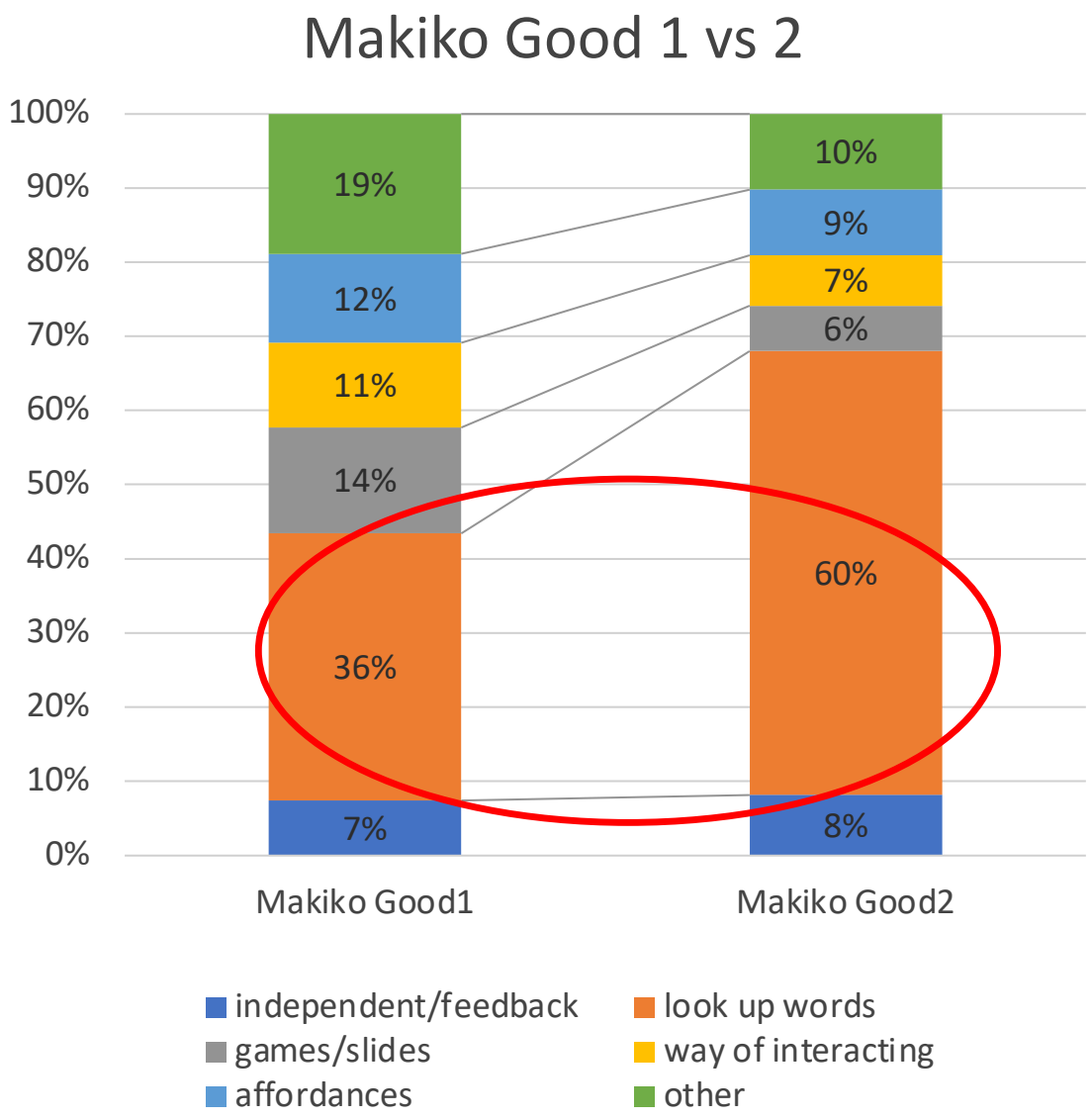


2. Coding

13. What points do you like about using Chromebooks in English lessons?

- Independent/feedback
- Games/slides
- Affordances
- Look up words
- Way of interacting
- Other



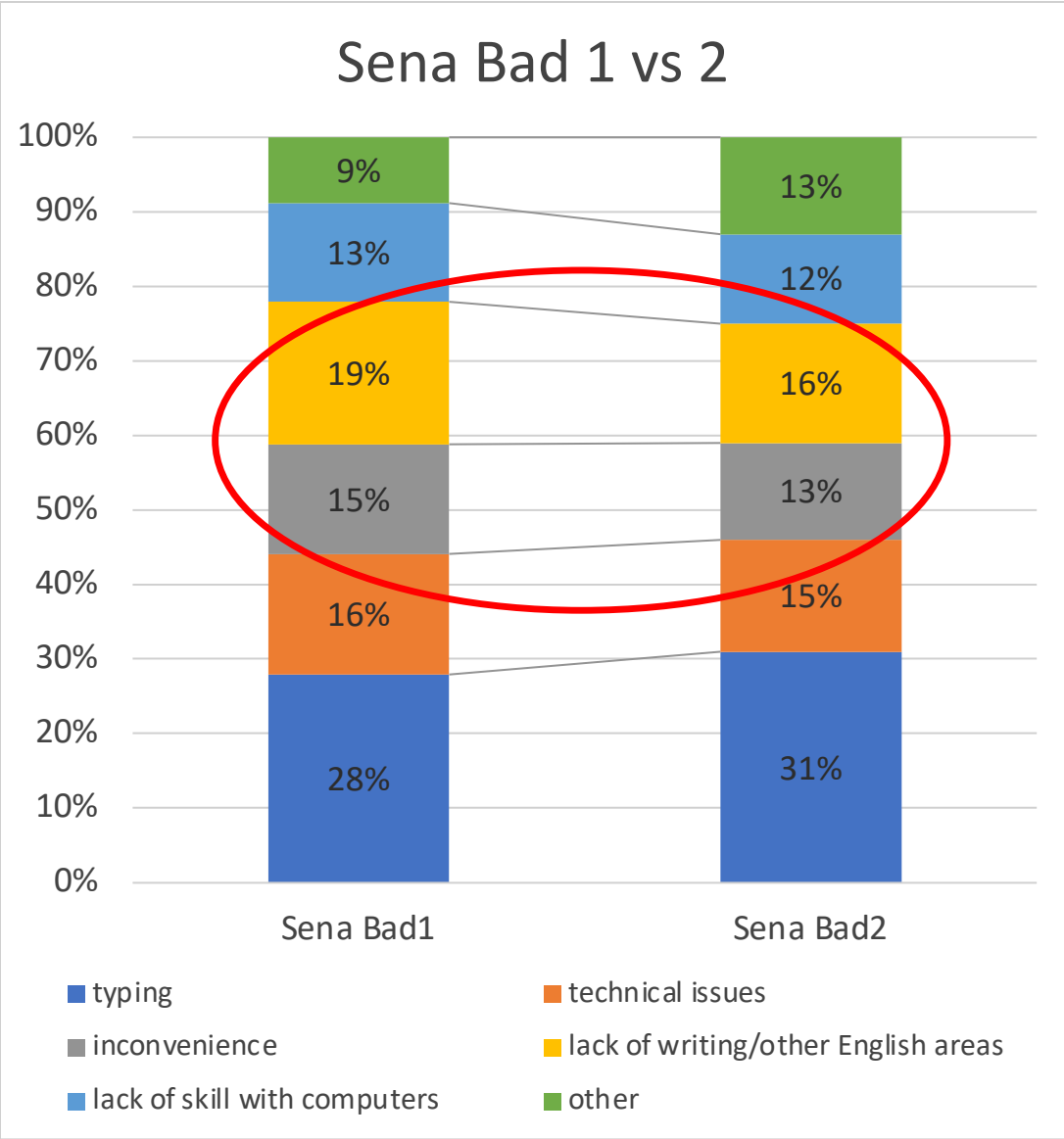


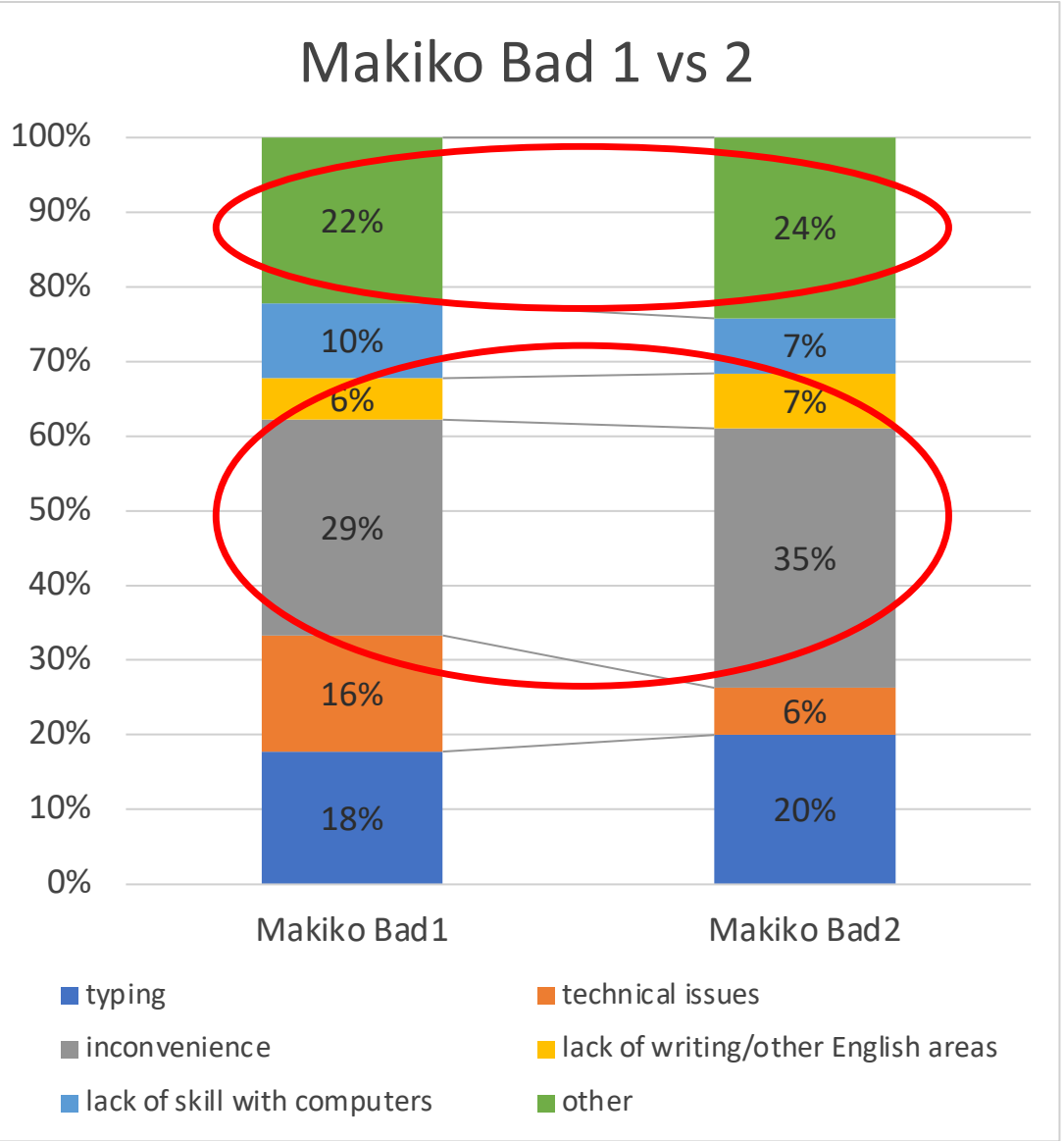
n = 143, 167

n = 148, 143

14. What points do you dislike about using Chromebooks in English lessons?

- Typing
- Inconvenience
- Lack of skill with computers
- Technical issues
- Lack of writing/other English areas
- Other





n = 143, 167

n = 148, 143

Discussion

Differences: Shared vs Individual

Sena

- Jamboard (interactive group whiteboard)
- Nearpod (gamified LMS)

Makiko

- Google Slides (solo presentations)
- Google Translate (textbook and other)

Differences: School Environment

Sena

- Devices stored at school
- Few discipline issues

Makiko

- Devices taken home every day
- Some discipline issues

Similarities: High Approval

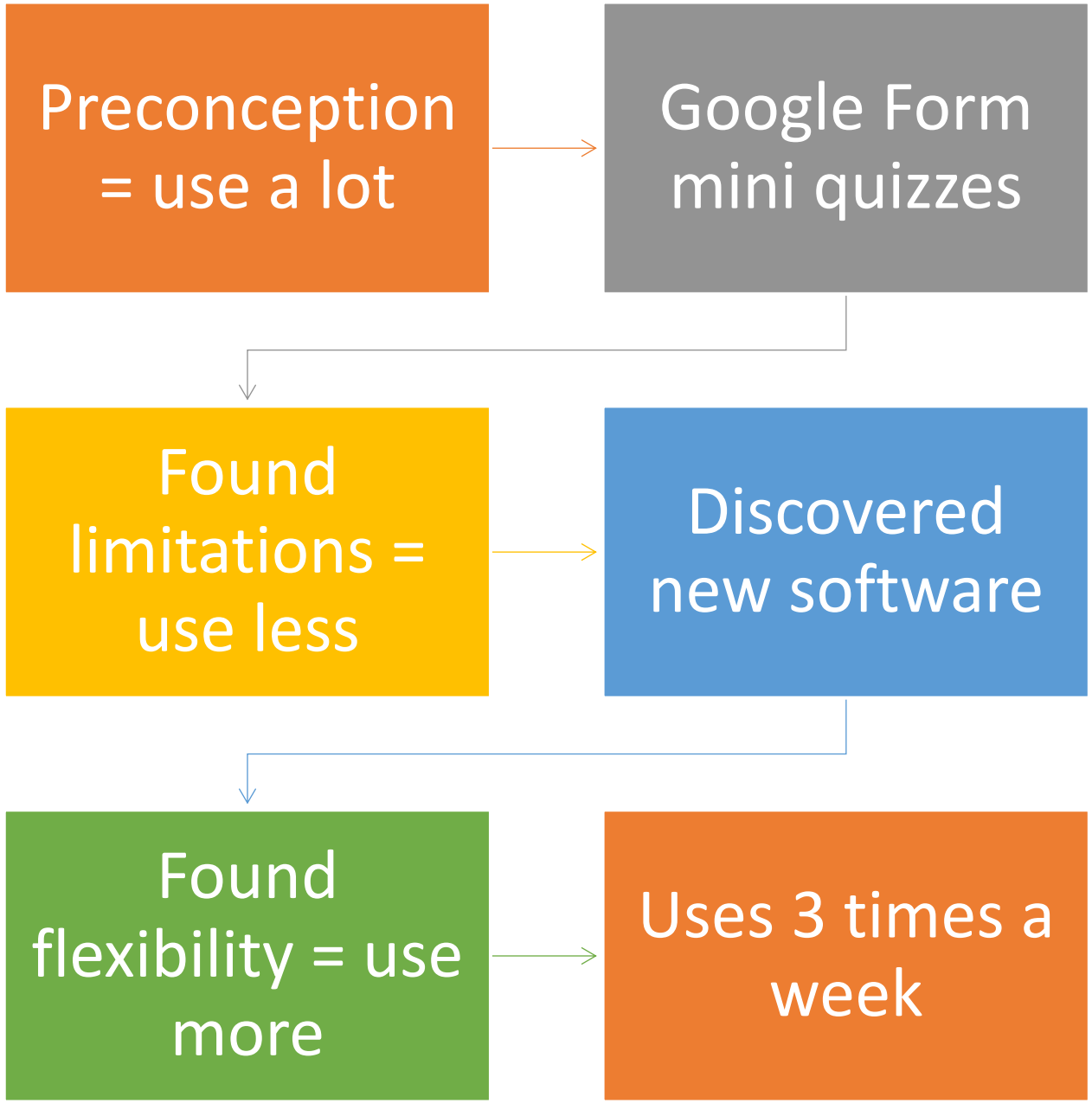
	Edu 1	Edu 2	Ease 1	Ease 2
Sena's students (n = 143, 167)	4.499	4.670	4.264	4.329
Makiko's students (n = 148, 143)	4.550	4.551	4.289	4.435

Similarities: Teacher Changes

SENA = USAGE CHANGES

MAKIKO = ATTITUDE CHANGE

Sena Usage Change



Makiko Attitude Change

I’m not excited. I don’t want to do it.

Don’t be afraid to use it. If you have a trouble during your class, your students will help you.

Conclusion

The Good

- Students like using 1-1 devices
- Learner autonomy
- Teacher engagement
- Online learning

The Bad

- Translation is a problem
- Software needs rules (teacher/student)
- Other skills may suffer
- Lack of OTJ training

4 Factors for Improved Integration

REGULAR WORKSHOPS

DEMONSTRATION LESSONS

SHARED RESOURCES

PRE-PREPARED LESSONS

Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS quarterly*, 319-340. https://doi.org/10.2307/249008

Sato, H. (2020). Educational Responses to the Pandemic in Japan: Primary and Secondary Education Policy Issues. *CCEAM*, 64. http://cceam.net/wp-content/uploads/2020/08/ISEA-2020-48-2.pdf#page=70

Thank you for listening

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