

Is there any bias in the
Specification method
based on student ID
numbers?

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Background & Purpose

- A teacher picks students using a method which is based on student ID numbers or the date, and we wondered whether there is any bias in that method.
- To find a bias in a method of how a teacher picks students to answer questions.

Bias : Evaluated by variance.

[Theoretical value: $\{365(\text{day}) * 10(\text{time}) / 40(\text{student})\} = 91.25$]

Assumptions

In our study, {

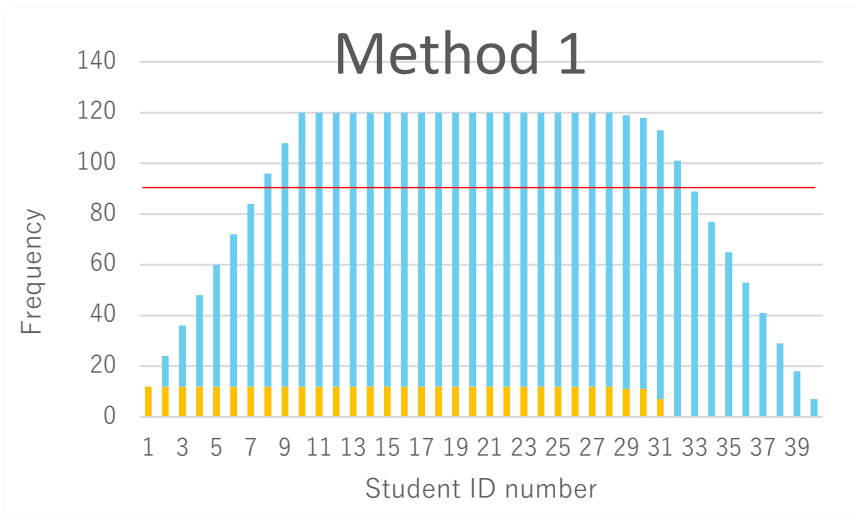
- the range of student ID numbers is 1~40.
- we set the year to 365 days.
- a teacher picks 10 students per trial.

Method

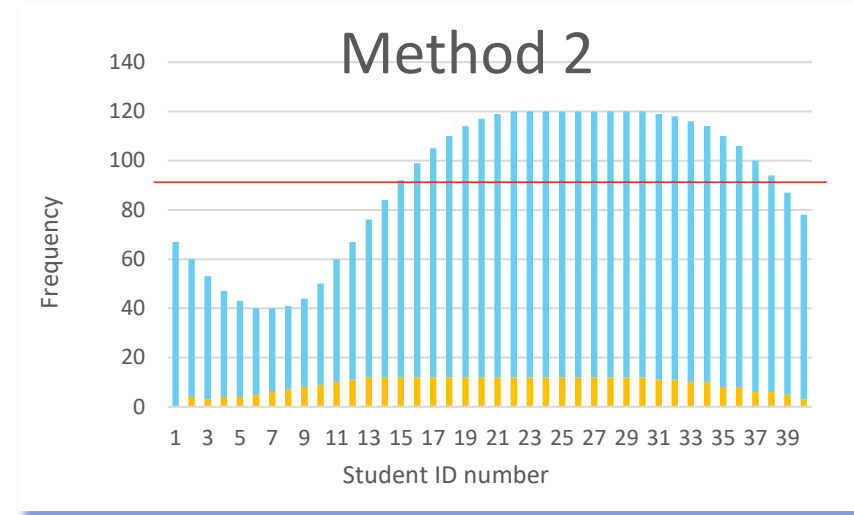
- 1, Based on the date
- 2, Based on the sum of month and date
- 3, Based on the sum of each digit of month and date
- 4, Based on the product of month and date

Result

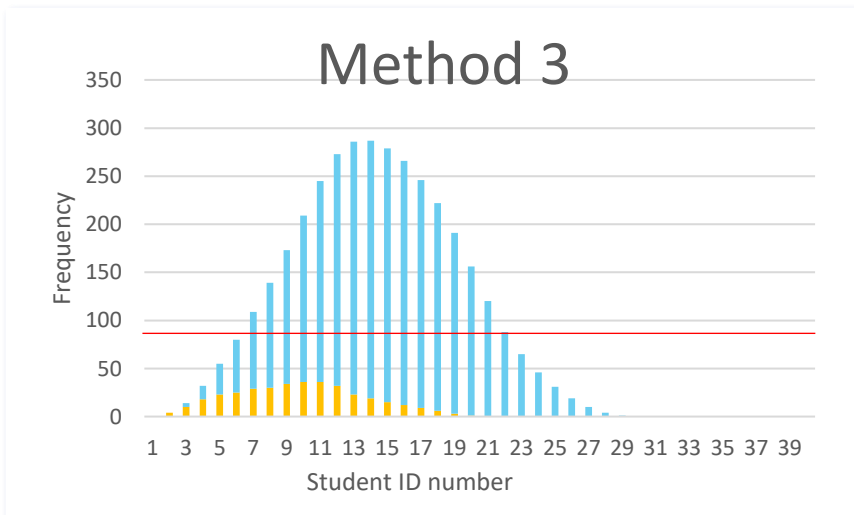
- : one student
- : ten students
- : Theoretical value (91.25)



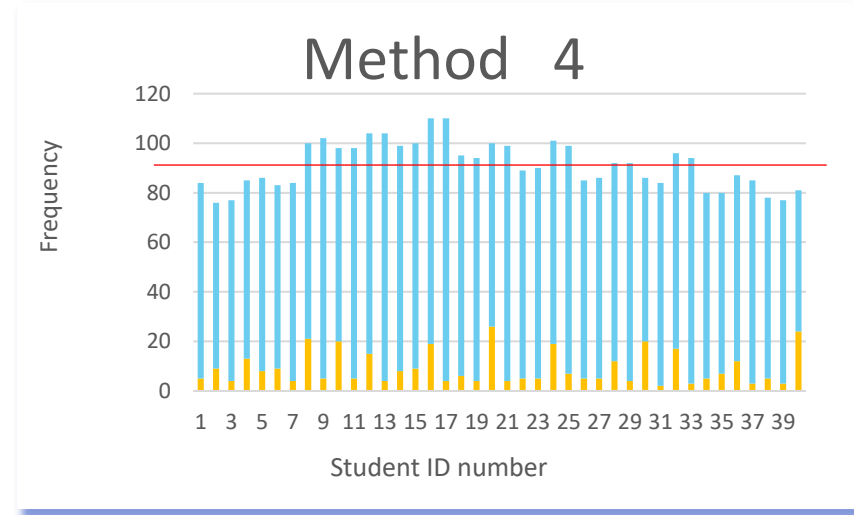
Variance 1410



Variance 858



Variance 10757



Variance 97

Conclusion

- There is a bias in methods, but making a method which has less bias is possible.

Future work

- Elucidation of the reason which produces the bias.
- Making a method to obtain less bias.