

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

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## 1. Background

When a student answers a question a teacher picks a student using a method which is based on student ID numbers or the date.

We test the method, because we think there is a bias. Therefore, we started this study to test this.

Student ID number: It is fixed by initial name of the student. Based on Japanese syllabary.

## 2. Purpose

To find a bias in a method of how a teacher picks students to answer a question.

## 3. Study's method

### Assumptions

- Range of student ID numbers is 1 ~ 40
- Set the year to 365 days
- Pick 10 people per trial

Bias : The sum of the data over Theoretical value (91.25) higher values mean greater bias.

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

We pick up the students based on the methods as shown below.

### Methods

Method 1. Based on the date

ex) 2/28 → number 28 ~ 37

Method 2. Based on the sum of month and date

ex) 2/28 → 2+28 → number 30 ~ 39

Method 3. Based on the sum of each digit of month and date

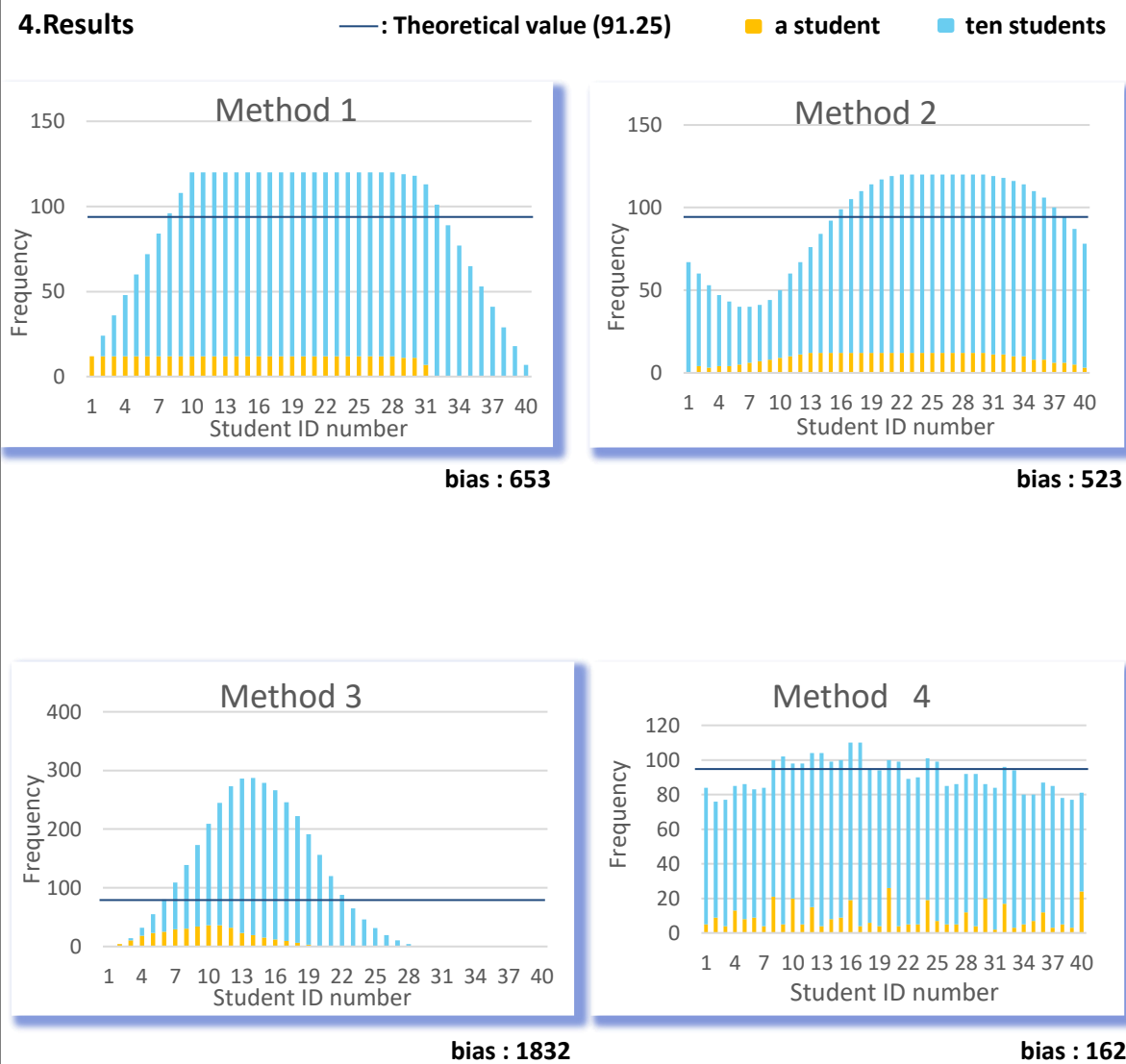
ex) 2/28 → 2+2+8 → number 12 ~ 21

Method 4. Based on the product of month and date

ex) 2/28 → 2\*28 → 56-40 → number 16 ~ 25

\*If number is over 40, subtract 40 until less than 41.

## 4. Results



(These figures are made based on one trial per day.)

## 5. Conclusion

From our research, we found that a bias exists.

However, there is less bias when we test a method in which the value is based on the product of month and date.

At the time of one trial per day, it is thought that there was variation in the values taken.

So, making a method which has less bias is possible.

## 6. Future work

We will do further study about the following two points.

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