

# Help elderly people who cannot go to the supermarket by themselves!

~learning from Otone Maronie association~

2-1 4 Mizuki Ebara

It is dangerous for elderly people to drive cars but especially in the countryside they have to go shopping by themselves.

What can we do to help such people?

## ■ About Maronie association

*policy: Help elderly people who cannot go to the supermarket by themselves.*

*day: every Wednesday*

*activity: 10:00 [gather at the community center and talk]*

*10:30 [go to the supermarket by taxi. (use discount tickets called 『Maitaku』)]*

## ■ Merit

- ✓ *Elderly people can choose food by themselves.*
- ✓ *They can buy uncooked food and heavy things.*
- ✓ *They can talk with volunteers and other users of Maronie.*
- ✓ *They can be confirmed their survival by volunteers.*

## ■ Demerit

- ✓ *Volunteer's age is from 64 to 85.*
- ✓ *Their activity is not known to many people.*
- ✓ *They only active once a week.*



## ■ New plan

We call parents who have elementary school or junior high school children by handing out papers about Maronie's activity.

① Users

[want to choose foodstuff by themselves]



conventional volunteers

② Users

[cannot walk]



new volunteers

[have elementary school or junior high school children]

While new volunteers go to the supermarket in stead of ②Users, they stay at the community center and teach local dish, seasonal event and wisdom to new volunteers' children. New volunteers hear what ②Users want to buy in advance. If the number of volunteers increases, they can increase day of activity.

## ■ Discussion

*I sent a questionnaire to Maronie's volunteers and elderly people who participate in Maronie's activity to know about Maronie's issues and advantages. Based on it, I found this solution. If we can make the peace city that residents can help each other, they will feel comfortable to live in. Not only this big thing, but also things that we take out the trash instead of elderly people and help clean the yard can relieve elderly person's pain. As the Japanese population is rapidly aging, we should think how we can help elderly people.*

# Occurrence Conditions and Classification on SNS flame

～To protect ourselves from SNS flame～

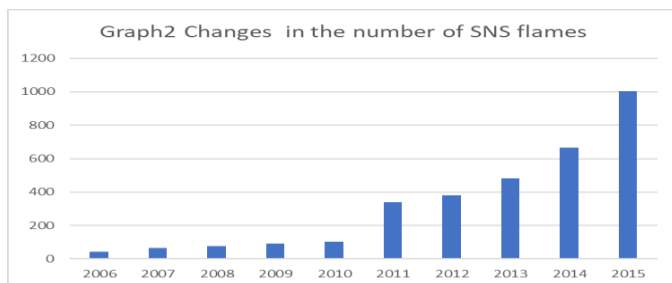
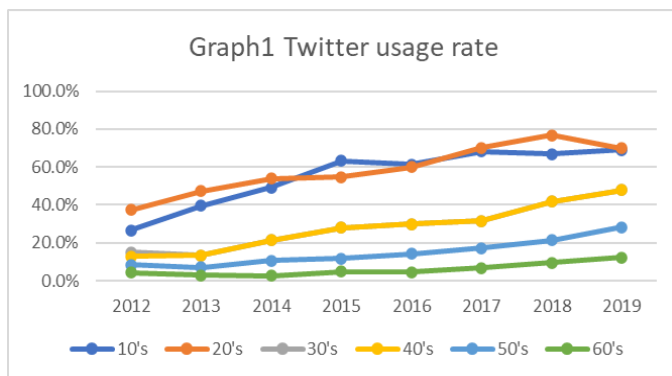
2-1 gruop19 Ayane Hagiwara

## 1. Abstract

Today, the number of SNS users is increasing and the flames of SNS are diversifying. Due to this background, I think we need to protect ourselves from them, therefore, I studied the conditions and classification of SNS flaming. It turned out that we should be aware of topics that are prone to flaming and that there are few participants.

## 2. Introduction

Graph1 shows the change of Twitter user rate since 2012. Also, Graph2 shows the number of flaming cases in Japan.



From these graphs, it can be seen that the number of SNS flames is increasing year by year, and most of the people involved in it are us teens or 20's. If we get caught up in the flames of SNS, there are various adverse effects, so I thought it is important to protect ourselves from them, so I set this theme.

## 3. Methods

1. Investigate what kind of slander, and related incidents on SNS.
2. Based on the result, find out the conditions of occurrences by analyze the case and investigate the definition and background of SNS flame.
3. Find a way to protect ourselves from them.

## 4. Result

(I) Definition

A phenomenon in which criticisms and actions sent by a person or company.

(II) Background・Occurrence Condition

With the spread of the Internet in recent years, it has become possible for individuals to send information to an unspecified number of people. On the other hand, the number of cases of burning has increased, when the target is flooded with slanderous comments.

(III) Classification

Who	Celebrity
	Corporation
	Ordinary people
What did they do	Antisocial behavior , Act that violet the rules and norms
	Act of criticizing something , Abuse
	Self-made self-performance , Forgery
Correspondence	Counterargument , Make a claim
	Ignore
	Delete comment
	Apology , Withdrawal

## 5. Discussion

To prevent flaming, it is important to know the topics that are prone to flaming. In order to deal with the flame properly, it is important to consider the scale of the flame and whether it is fatal. Also, we should be aware that there are few SNS flaming participants.

## 6. Reference

小林直樹『ソーシャルメディア炎上事件簿』日経BP社

萩上チキ『ウェブ炎上—ネット群集の暴走と可能性』筑摩書房

「総務省 | 平成 29 年版情報通信白書 | SNS がスマホ利用の中心に」

<https://www.soumu.go.jp/johotsusintokei/whitepaper/ja/h29/html/nc111130.html>

# Condition for a large number of spectators in the basketball

2-2 Iwai Saki Shintani Mayu

## Abstract

Conditions of team in Gunma prefecture were compared with team in other prefectures. Some conditions were found. This survey may lead to an increase in the number of spectators.

## Introduction

### Background

The average number of spectators for the Gunma team in 2018 has decreased compared to 2017.

### Purpose

Increasing in the number of spectators for the Gunma team and revitalization of Gunma.

### Hypothesis

It is assumed that the number of spectators will increase under the following eight conditions.

- ① Day of the week
- ② Match start time
- ③ Transportation to the venue
- ④ Time required from the nearest station
- ⑤ Venue facilities
- ⑥ Venue scale
- ⑦ Presence or absence of a shop
- ⑧ Parking lot size

## Research

- (1) The day of week, match start time, venues and the number of spectators were examined in teams that have played 19 or more games against Gunma from 2016 to 2018.

Team name	Date and time	Venue name	Number of spectators	
SHINSHU BRAVE	2018,4/14 4/15	Yamato Civic Gymnasium Maebashi	1059	1007
WARRIORS	2019,5/4 5/5	Kotobuki Arena Chikuma	2141	3223

Example(chart1)

- (2) At the venue examined in (1), seating capacity, the availability of direct buses, the number of parking lots size, and the time required from the nearest station were investigate.
- (3) Common points were examined in matches with a number of spectators are higher than the average number of spectators per team.

## Result

Venue name	①	② (□pm.)	③(Bus)	④(min)	⑧
YamagataSportsPark	Sat, Sun	6,2,4,5	Absence	20	950
YamagataSportsCenter	Wed	6,5	Absence	15	2000
AdastriaMitoArena	Sat Sun	5,6	Absence	4	260
NagoyaCityBiwajimaSportsCenter	Sat Sun	3,1,5	Presence	5	100
ParkArenaKomaki	Sun	2	Presence	22	654
XebioArenaSendai	Tue,Wed, Sat,Sun	2,1,7	Absence	5	Absence
AomoriBudoukan	Sat,Sun	6,2,	Presence	10	Absence
HachinoheEastGymnasium	Sat,Sun	6,2,2	Absence	33	317
GosyogawaraCivicGymnasium	Sun	2	Absence	7	Absence
YoyogiNationalGymnasium	Sat	2	Absence	5	104*
HiroshimaSunPlazaHall	Fri,Sat	7,2	Absence	5	450
KotobukiArenaChikuma	Sat,Sun	2,2,6,5	Presence	15	720*
KoriyamaGeneralGymnasium	Sat,Sun	2,1,5,6,1,5	Presence		290

\* including paid (chart2)

Common points of games with a large number of spectators is

- (i) there is a match on weekends or holidays.
- (ii) time from the nearest station is 15 minutes or less or there are direct buses.

## Discussion

These results lead to the conclusion that hypothesis①、③、④ are proved to be correct.

Hypothesis⑤~⑦ could not be investigated.

- ⑤ Investigation is impossible without actually going.
- ⑥ The description method differs by homepage.
- ⑦ There is no description on the homepage.

## Reference

Determinants of Fan Attendance at J. League Matches : An Analysis Based on 2013 Average Attendance Rate Data

<https://ci.nii.ac.jp/naid/130005149999>

# Trend survey of buzzwords award

## ~ predicting buzzwords award of 2020 ~

2-2 group11 Shimo Sayaka Oshima Ayana Shionome Mana

Abstract The 2020 buzzwords award were predicted and corrected because they are nominated for words that symbolize the year and become hot topics. We took trends from past buzzwords, made predictions by field, predicted buzzwords of 2020 and investigated whether they are correct or not.

### Introduction

<Hypothesis>

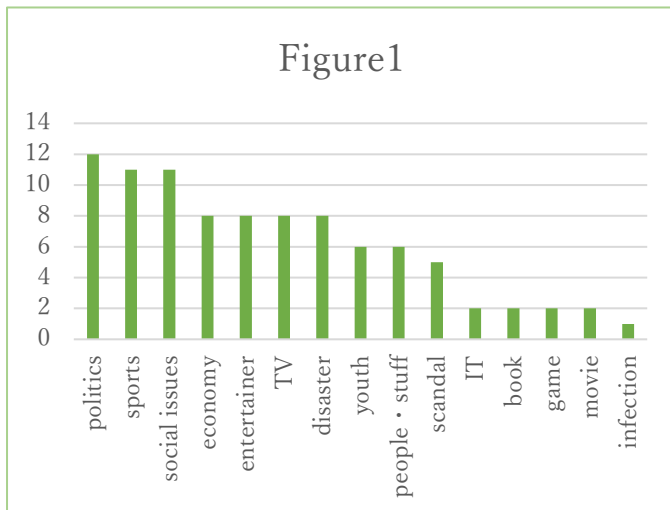
Buzzwords have a trend because they are nominated from various fields.

→ We assumed that buzzwords of 2020 can be predicted from trend.

### Methods

- ① Top10 buzzwords from 2008 to 2019 are divided by field.
- ② Words regarding the divided field are given a percentage for twelve years.(figure1)
- ③ Top10 buzzwords of 2020 based on trends are predicted.

### Result



<our predicting>

*COVID-19*··infection  
*Go to campaign*··politics/economy/infection  
*Social distance*··politics/infection  
*No spectator match*··sports/infection  
*UberEats*··economy/infection  
*BLM*··politics/social issues  
*Remote○○*··IT/infection  
*Kimetsu no yaiba*··economy/book/TV/movie  
*Atsumori*··game  
*7<sup>th</sup> generation*··entertainer/TV

<buzzwords of 2020>

*Sanmitsu* · *Crash Landing on you* · *Atsumori* ·  
*Abe no masuku* · *amabie* · *online○○* ·  
*Kimetsu no yaiba* · *Go to campaign* · *solo camping* · *Fuwa-chan*

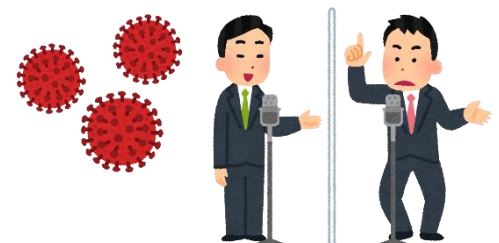
field	○ or ×		
politics	○	people · stuff	○
sports	×	scandal	×
social issues	×	IT	○
economy	○	book	○
entertainer	○	game	○
TV	○	movie	○
disaster	×	infection	○
youth	×		

### Main reasons for incorrect

- Words related to sports were not nominated because of decrease in matches by COVID-19.
- Remote○○ ≈ Online○○

### Conclusion

- Words related to COVID-19 were nominated 5 out of 10.
- Buzzwords of 2020 do not hit the trend because of COVID-19.



# Is it right Japan's countermeasures of Coronavirus infection?

2-3 Group3 Honoka Watanabe Sayaka Uchida Kanatsu

## <Abstract>

To get back to life as soon as possible, we want people to have the right measures and perceptions about coronavirus.

## <Hypothesis>

• Japan's current anti-coronavirus measures are too excessive.

## Result

Q1, Do you check the information about corona yourself?

Q2, Are you satisfied with the current measures taken against corona by the government and local government?

## Satisfaction

• Call for corona countermeasures.  
→Masks, social distance, sanmitsu and so on.  
→Easy words made it easier to act and more aware of it.

Q3, Write your doubtful points about coronavirus infection or its countermeasures.

## What one understands

• There were many opinions about anxiety about the future and vaccines.

## <Result>

Focus on the questions

• By age, even though the mortality rate of elderly people has decreased, it is still close to 10%.

→Consideration for domestic infections and the elderly is of paramount importance.

## <Relationship>

★Designated infection

1class→Ebola hemorrhagic fever and Black Plague

2class→Tuberculosis, SARS and New Coronavirus

3class→cholera and typhoid fever

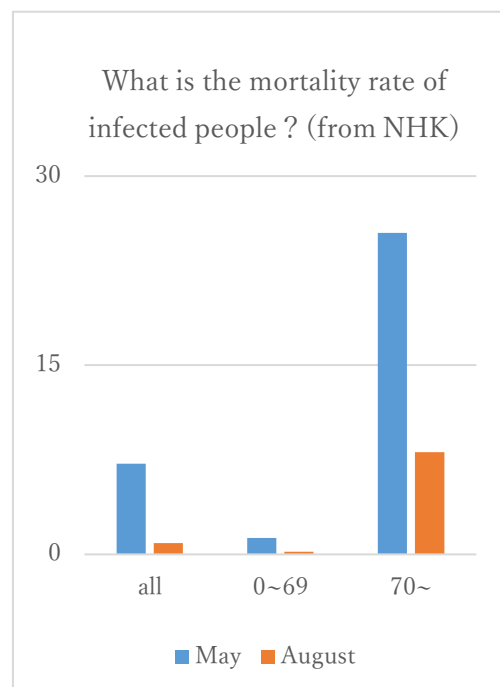
4class→yellow fever and rabies

5class→flu

## <Consideration>

• Too much attention is being paid to not causing coronavirus victims, and more and more people are suffering from other causes.

• Shouldn't we think about how we can get closer to a normal life environment rather than getting rid of the virus ?



## <References>

<https://www.mhlw.go.jp/index.html>

<https://www3.nhk.or.jp/news/html/20200918>

</k10012624631000.html>

# The way for increasing voters of teenagers

2-3 Group 11 Hikaru Azami Kaoru Fujiwara

## Abstract

It is said that Japanese voting rate is the lowest recently. So we sent out a questionnaire about an election to students. According to the survey, the cause of this election problem was that there was an increase in distrust in politics and students did not understand the value of voting. We found solutions that students should practice elections at school and young politicians of the reform group come into being.

## 1. Introduction

Hypothesis: According to the temporary survey, two problems in abstract were found.

## 2. Methods/Research

The plan of research

We made two posters about two problems. Students and their parents answered questionnaire before and after they were displayed.

**A:** Main questionnaire before they were displayed

Q1: Do you want to go to vote?

Q3: Do you feel that your own opinions are reflected in the politics by going to vote?

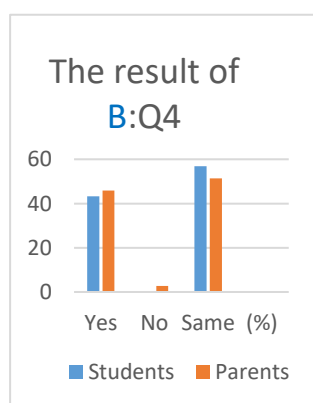
Q4: Can you believe what politicians carry out is right?

**B:** Main questionnaire after they were displayed

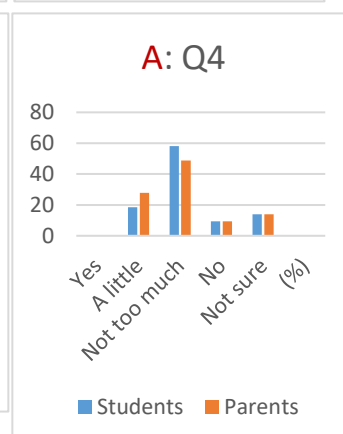
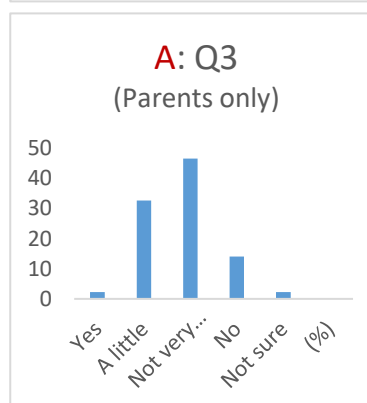
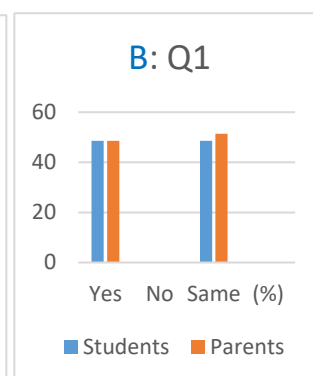
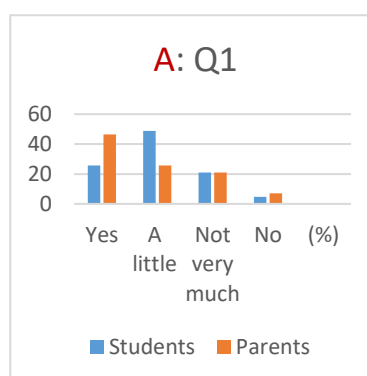
Q1: Have you started feeling like going to vote?

Q4: Do you think you would like to research on the elections and politics?

The totaled results of A and B were published.



## 3. Results



## 4. Discussion

The conclusion is the same as our prediction. First, it is found that there was an increase in distrust in politics. Second, it is found that students did not understand the value of voting. The conclusion is referred to the results of Q3 and Q4 of A.

The best solutions to resolve two problems are come up with.

First, students should practice election at school.

Second, our society should produce many young politicians that we will change.

# What time should we leave from the school gate of Maejo for Maebashi station not to be caught in any red lights ?

2<sup>nd</sup> grade class 4 group 5 Shirota Satoko Sorimachi Midori

Abstract: We all want to be free from the stress caused by waiting for a traffic light to change. We decided to try solving this problem. We researched the traffic right and found it related to traffic volume.

Experiment①: We chose one route from Maebashi girls high school to Maebashi station. We named each 6 signal A1,A2,B1,B2,C1,C2. The traffic lights on the route is A1,A2,B2,C2 this time. We researched the time started lighting green, flashing and the span of lighting green observing one cycle in a day. "The span of lighting green" doesn't include the span of flashing. We defined "one cycle" as the span of lighting blue to the next lighting blue.

Result①: If we assume one cycle as the same in the day, the time the signal started lighting green or flashing and the span of lighting green vary depending on day to day.

Experiment②: To begin with, we checked to see if the green length of the time which the signal is green and the length of one cycle. We timed a cycle and the span of lighting blue of the four signals for 3 cycles on end in a day.

Result②: The length of the time which the signal is green and the length of a cycle were different even in a day.

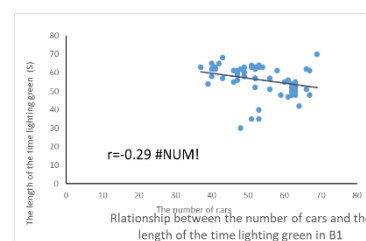
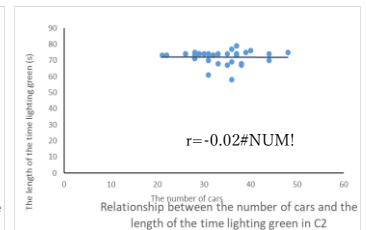
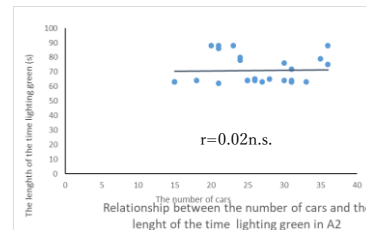
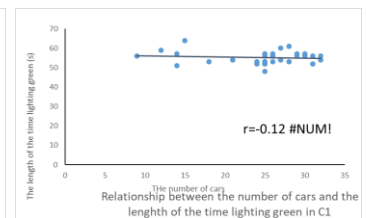
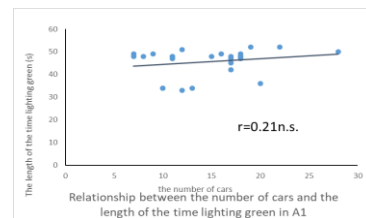
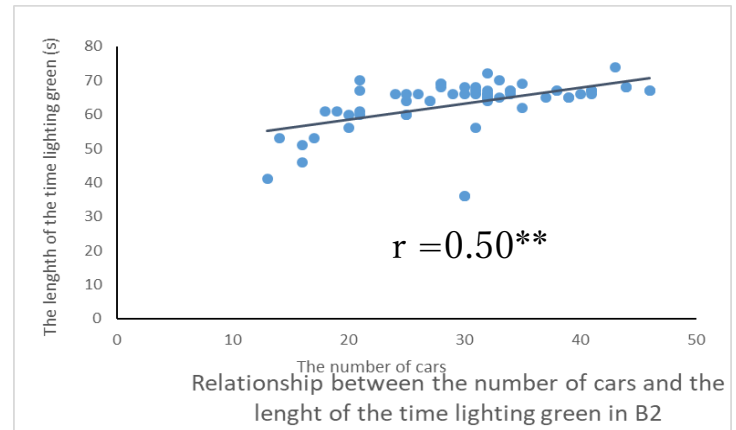
Discussion①: The length of the time which the signal is green and the length of a cycle were found irregular. So, it is impossible to decide when we should get out of Maejo. Then, why it is irregular ? We set next subject.

Theme②: Is traffic involved in time which traffic light is green ?

Experiment③: We counted traffic and the time of green light at the point of A1 A2,B1,B2,C1,C2.

Result③: B2: Up to 20 cars, the traffic volume and the length of the green light are proportional. When the number exceeds 20, the length of the green light is constant regardless of the number of cars.

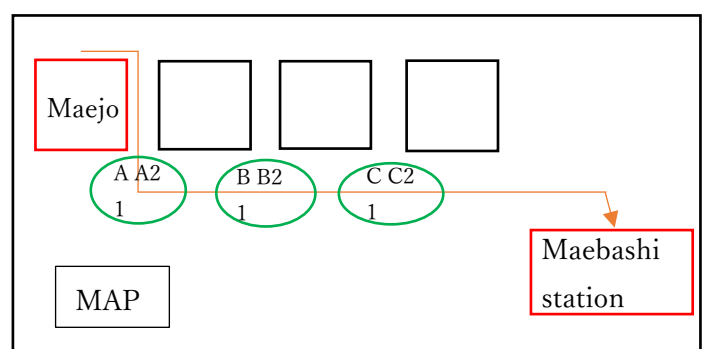
A1~B1, C1, C2 : They are statistically unreliable.



Discussion②: For the B2 traffic light, we could find that there was a relationship between the length of the green light and the traffic volume. But

for other traffic lights, we couldn't find that there has a relationship.

The next time we study, we would like to investigate the relationship between B2 traffic and the other 5 traffic lights.



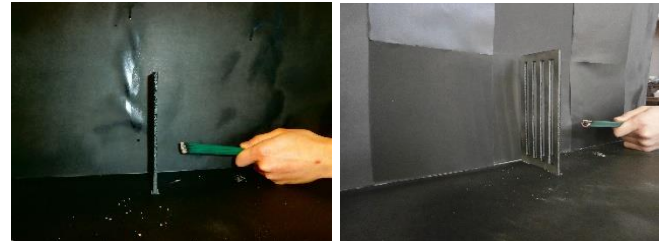
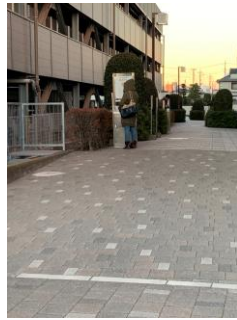
# Change the airflow to prevent passive smoking

2 - 4 Runa Maruyama Rika Mizunuma

Today, it is said that passive smoking is harmful to our bodies. It can be described that smoking area at Maebashi station is open and there is a high risk of passive smoking. To address this problem, we considered some partitions to change the airflow and experimented to investigate their effect. We concluded that it is the best to use two partitions, one with holes at the top and one with holes at the bottom.

## 1. Introduction

We examined the case where the wind was blowing from the west. We hypothesized that partitions could prevent airflow from flowing sideways and encourage it to rise. Also, we thought that the effect could be increased by making holes and devising their shapes.



## 2. Research

1. We called JT.

- It is good to promote the rise of smoke.
- Both intake and exhaust are important.

2. We looked up examples and standards of partition.

《Standards》

- A certain height (2~3m)
- A gap at the bottom for air supply(10~20cm) etc.

《Examples》



## 3. Experiment

1. With incense smoke, we visualized the airflow and reproduced cigarette smoke to investigate how partitions work, ventilating the area.

2. We did a similar experiment using two that worked well in the previous one.

なお、給気口と屋外排気装置との位置関係によっては、 airflow がショートカットし、たばこ煙が滞留する懸念が生じることがあるので注意してください(図4-9)。

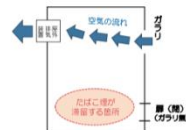


図4-9 良くないレイアウトの例(平面図)

## 4. Result

	How smoke moved	The effect
①	Scattered and spread. Didn't rise.	○
②	Spread through a hole around the middle.	×
③	Spread through a hole around the middle.	×
④	Didn't spread. Went over the top along the partitions.	◎
⑤	Didn't spread. Went over the top along the partitions.	◎

◎…Promote the rise of the airflow.

○…Change the airflow but scatter the smoke.

×…Do not change the airflow at all.

## 5. Discussion

- Standing two partitions prevents smoke from scattering more than one.
  - When we make a hole in the windward partition at the bottom and a hole in the leeward partition at the top, the smoke rises most and prevented from filling.
  - Too high…The smoke spreads laterally.
  - Too low… The smoke easily closes over the partition.
- ⇒It would be better to find the optimum height with a cigarette and a full-scale partition.

## 6. Reference

『厚生労働省』 [www.city.setagaya.lg.jp](http://www.city.setagaya.lg.jp)

『大阪府』 [www.pref.osaka.lg.jp](http://www.pref.osaka.lg.jp)



# On how to improve wink

2 - 1 Group 1 Ando Miyu Samata Miyu

## 【1 Abstract】

By searching on the Internet, the ways of training the orbicularis oculi muscle came up. The experiment was conducted by using these ways. The results of the experiment shows that “Opening the eyes to their limit while holding down the forehead” is better.

## 【2 Introduction】

### (1) Hypothesis

Using the forehead muscle instead of the muscles around the eyes when opening the eyes prevented us from winking smoothly.

### (2) Purpose

To find a way to improve winking in a short amount of time.

## 【3 Methods/Research】

○Tentative experiment

First, ten ways which could help train orbicularis oculi muscle were picked up.

The ways were picked up in the Internet and thought by us.

Second, three ways which were most effective were picked out by our experiment.

The three ways were

A. Opening the eyes to the limit while holding down a forehead.

B. Glaring eyes

C. Pulling eyes

○Method for tentative experiment and Real experiment

1 Measure the length of the eyes which is normal and winking.(Figure 1)

2 Try the way for three minutes.



Figure 1

3 Measure the length of the eyes which is winking.

○Real experiment

Three person for each way is tested. After the experiment, we got the result that the table shows.

The table shows that A is the most effective way.

		Normal (cm)	Before (cm)	After (cm)	Differences (cm)
A	①	1.2	0.6	0.8	0.2
	②	0.8	0.6	0.7	0.1
B	③	1.0	0.6	0.8	0.2
	④	1.0	0.8	0.8	0.0
C	⑤	1.0	0.7	0.8	0.1
	⑥	0.7	0.4	0.4	0.0

## 【4 Result】

The present study has demonstrated that “Opening the eyes to their limit while holding down a forehead” is the most effective way.

## 【5 Discussion】

Therefore, we think training forehead is the best to wink smoothly.

## 【6 References】

- ① <https://dogatch.jp/news/tbs/tbstopics-68947/detail>.
- ② <https://croissant-online.jp/health/84244/>
- ③ <https://www.ft-bc.jp/orbicularis-oculi-muscle-training/>

# THE TIME WHICH THE BRAIN BECOME ACTIVE AFTER HAVING GLUCOSE

2 – 1 Grope 2 Mei UMEZAWA Rinka KOBAYASHI

## ABSTRACT

Is it true that “it is good to have glucose when people study”?

A result of thinking this question, it was lead that an interest in the time when glucoses effects appear on.

An experiment was conducted which subjects do Hundred-Square-Calculations as fast as possible changing the time after subjects had glucose.

## INTRODUCTION

“It is good to have glucose when people study.”

Have you ever heard this notion? Probably many people have heard this notion once.

Is this really true?

What represents quick-thinking and concentration of a strongly connected in studying is calculating speed.

Sugar is the only energy source of the brain, glucose.

As a previous phase, looking into how long does glucose work after the intake, the result of “The earlier the time you eat glucose, the faster you calculate will be quicker.” was obtained, so the result was focused on.

The hypothesis is that Glucose’s effects appear soon after the intake.

The rationale is such a tendency was seen on the previous experiments.

 The calculation paper which used the examination

ID											
x	6	7	8	2	3	1	9	7	4	5	
9											
8											
5											
6											
2											
7											
9											
1											
3											
4											

## METHOD

Subjects: 7 people    Span: 9days

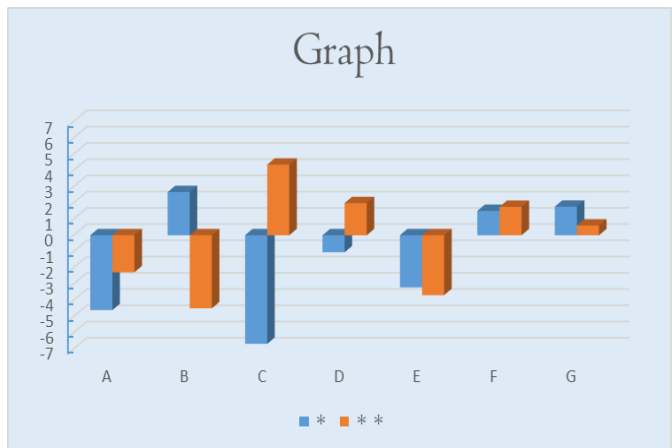
Type1: Subjects who had not had glucose and Hundred-Square-Calculations

Type2: Subjects who had had glucose 5minutes ago and did Hundred-Square-Calculations

Type3: subjects who had had glucose 50minutes ago and did Hundred-Square-Calculations

In each type, subjects calculated three times, timing the calculation.

## RESULT



※ It is the time which the time required for TypeI subtracted from that for Type2.

※※ It is the time which the time required for TypeI subtracted from that for Type3.

## CONCLUSION

The hypothesis was wrong that glucose would be effective soon after the intake.

It is not generally said that glucose is effective for brain activation.

If the conditions of the subjects were exactly same, for instance, their meals and sleeping hours were correct, there could be something with a rule.

## REFERENCES

“The secret of Wakasa” <https://himitsu.wakasa.jp/contents/glucose>

# The timing of taking in chocolate to increase the amount of memorizing

2-1 (3) Negishi Ichi, Tanahashi Raimu

## Abstract

Our results might be better by timing to take in chocolate. To discover this question, 10 subjects took in two pieces of chocolate at different time before starting experiment and learned words by heart. Then we researched the number of being written right spellings of them.

## 1 Introduction

### (1) Purpose

It is said that chocolate is good in memorizing. Although is it effective to take in chocolate before you study? And when is it most effective?

### (2) Hypothesis

60 minutes before studying is the best timing. It is because our researches found that 60 minutes was the most likely time.

## 2 Research

### [Experimental instrument]

- memorization ability survey sheet
- answer sheet
- milk chocolate of Meiji



Picture1

### [Experimental method]

(1) Unifying experimental dates to Thursday not to be influenced result through classes.

(2) Ten subjects ate milk chocolate of Meiji at the following time before the experiment.

- ① None ② 10 minutes ③ 60 minutes
- ④ 120 minutes ⑤ 180 minutes

(3) The subjects watched a memorization ability survey sheet and memorized its contents in 30 seconds.

(4) The subjects wrote memorized contents on the answer sheet in 45 seconds.

## 3 Result

Figure1 shows that 10 minutes, 60 minutes and 180 minutes are at the same level.

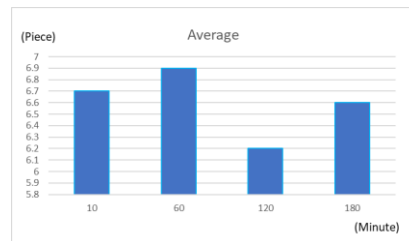


Figure1

Minute	Piece
None	6.6
10	6.7
60	6.9
120	6.2
180	6.6

Table1

## 4 Discussion

Our experiment found that 60 minutes before studying was not the best timing, and the others were not either.

The milk chocolate used in this experiment did not contain enough cacao polyphenol to change our result. (Figure2)

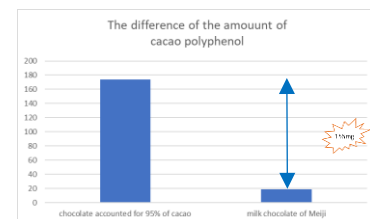


Figure2

## 5 Reference

東京法経学院『チョコが勉強に効く！脳を活性化させるチョコレート活用術』

<https://www.thg.co.jp/douyo/study/chocolate/>

株式会社 明治『教えて！チョコせんせい！』

<https://www.meiji.co.jp/sweets/chocolate/chocokoka/howto/>

# Common point of music or sound that stop baby crying

## Hypothesis

The music have common sound shape and musical instrument.

Sound have circumferential waveform like sound in the womb.

## preliminary experiment

## Method

- ① Print the music.
  - commercial song of TAKEMOTO PIANO
  - POISON by Takeshi Sorimachi
  - PAPRICA by Yonedu Kenshi
- ② Analyze the music
  - *View point* • • Scattered of scale, sound that is used many times
- ③ Check the common point and difference

## Result

- feature that appeared in all songs is only being major key.
- there is common sound shape in POISON and PAPRICA

## Improvement

It was difficult to analyze with only the music.

⇒ add analysis of the musical instrument

## Main experiment

## Method

- ① Select the music
  - The songs that were used in preliminary experiment
    - march of toy soidiers(theme song of three minutes cooking televised by kewpie)
    - Fuka Fuka Kafuka ( the song used in promotion video of Lotte)
    - Charm song of moony chan
      - *the criterion of the song-*
    - the song made for the purpose of stopping baby crying or preasing child
    - the song proved that the melody stop 90% baby's crying
- ② compare the musics
  - View point* • • • the musical instrument, tempo, voice, sound

## Result

- There are a lot of changes of the tempo.
- There are a lot of child laughter.
- the unique musical instrument is used .
  - For example
  - the percussion in a single shot
  - the manufactured sound
  - animal barks

## consideration

- Babies are stopped crying by wonderful or unique sound rather than pleasant sound.
- It is because babies distract attention from cause of crying.

# Change in speed when calculating while listening to a song

## ~Focus on lyrics, rhythm and language~

2-1 ⑧ Riko Ono , Miku Saito

### Abstract

Many people study while listening to songs, and we are wondering how they affect study efficiency. Therefore, we will verify whether listening to the song will improve work efficiency. First, find out what kind of songs are often listened to in the questionnaire, and compare the changes in calculation speed while actually listening to those songs.

### Introduction

When listening to music, the neurotransmitter dopamine is projected toward the frontal lobe. Since the frontal lobe is the control tower of the entire brain, the circuits of the entire brain become active. As a result, up-tempo releases more dopamine, stimulates the brain more, activates it, and chances concentration.

### Materials & method

#### 1、 Questionnaire survey

- ① Ask 40 people whether they listen to songs when they study.
- ② Ask those who answered to listen to the song whether they have lyrics, what the language is, and whether they are up-tempo or slow-tempo.
- ③ Based on the results of the questionnaire, investigate the tendency of songs that are often heard.

#### 2、 Verification

- ① Collect 15 subjects and measure the time when doing long division while listening to each of the five songs.

A: No song

B: Up-tempo song with Japanese lyrics

C: Slow-tempo song with Japanese lyrics

D: Up-tempo song with English lyrics

E: Slow-tempo song with English lyrics

- ② Calculate the difference between the average time of A and the average time of each of B to E, and find out which song has the fastest calculation speed.

#### \* How to select songs

Based on BPM=110 which is generally called standard speed, up-tempo songs are defined as BPM=130, and slow-tempo songs are defined as BPM=90.

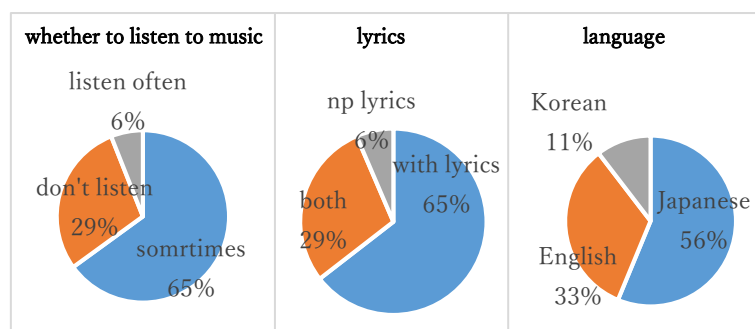
### Result

#### ① Questionnaire result

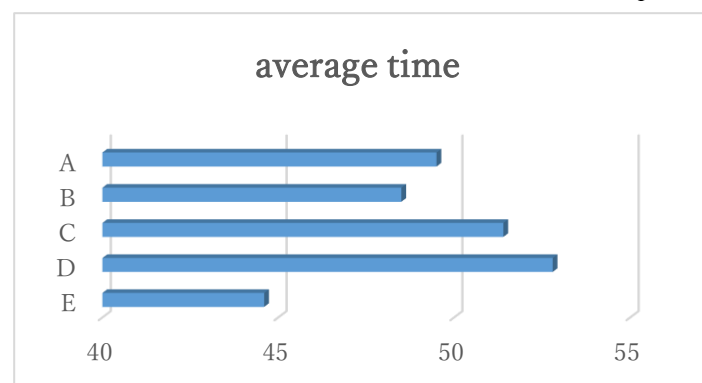
Most people listen to up-tempo songs with Japanese lyrics.

#### ② Verification result

Listening to slow tempo songs with English lyrics has the fastest calculation speed.



(Figure1)



(Figure2)

### Consideration

From the figure, it was found that the average time calculated while listening to a slow tempo song with English lyrics was the fastest. Regarding the language, the lyrics in English, which is not the native language, are calculated faster than the lyrics in Japanese, which is the native language.

# Difference in Memory Depending on the Speed of Watching Videos of English Words

2 - 1 9 Nakamura Arisa Nakamura Ayana

## Abstract

The Wernicke' center of the brain, which processes voice information, is said to be activated by listening to voice at high speed. Subjects were divided into five groups according to speed, and each group was allowed to watch the video only once at the specified speed. Then compared the score difference between the test before and after watching the video. As a result, the slower the viewing speed, the larger the score difference.

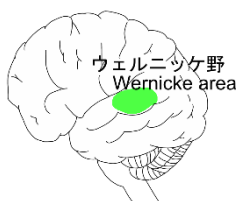
## 1. Introduction

(1) Purpose

Some people use videos for learning. This is to learn efficiently by clarifying the speed most suitable for memory.

(2) Hypothesis

Watching videos at 1.5x speed is the most memorable.



## 2. Methods

Subject: 40

① Grouping

Subjects were divided into 5 groups according to viewing speed. (0.5x, 0.74x, 1.0x, 1.26x, 1.5x) (8 people in each group)

② Pre-test

A test was taken before watching the video.

③ Watch the video at the specified speed only one

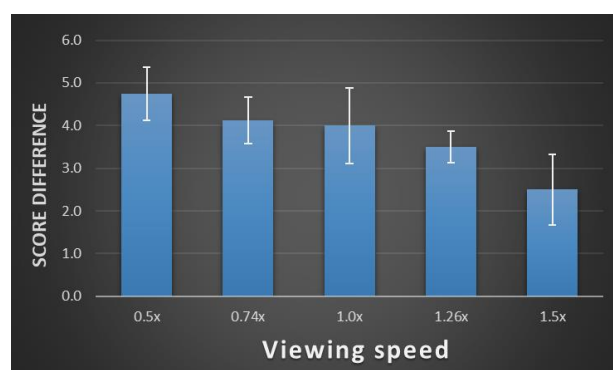
④ Post-test

The same test as the pre-test was taken.

⑤ Aggregate

The difference in scores was compared between the pre-test and the post-test.

## 3. Result



Graph1: Relationship between viewing speed and score

	0.5x	0.74x	1.0x	1.26x	1.5x
Average	4.8	4.1	4.0	3.5	2.5
SD	0.6	0.5	0.9	0.4	0.8

Chart1: Average and SD of score difference for each speed

※SD : Standard Deviation

- The slower the viewing speed, the larger the score difference.
- The SD was the largest at 1.0 x .
- There was no tendency in the relationship between the SD and the viewing speed.

## 4. Discussion

The standard deviation was the largest at 1.0 x . From this, individual differences were greatly reflected in the 1.0 x , which was the most frequently seen by the subjects .

As a whole, the slower the speed, the larger the score difference. From this, it is found that the slower one is more suitable for short-term memory on the condition that you watch the video for the first time and watch it only one.

## 5. Reference

「速聴の効果的な使い方」

<https://www.sokunou.co.jp/sokuchou-useful/>

「脳卒中 Minds 版やさしい解説」 [Minds.jcqh.or.jp](http://Minds.jcqh.or.jp)

英語 : altar

日本語 : 祭壇

Figure1: Example of video screen display

English words and Japanese meanings were displayed on the screen and English was read twice.

# The color suitable for memorizing

2-1-10 Shiraiishi Moa Sugahara Wakana

## 1. Introduction

### ○Purpose

Finding the color which is good for memorizing, and put the result of this survey to good use in studying

### ○Hypothesis

Most of the note books for words important parts are written in red →Red is best color for memorizing

JDYB	IOUV
CYUK	DTSV
XNYO	KLVR
YVQM	VTOO
AEWF	FMGY
LISJ	IRNA

→An example of paper used in an experiment

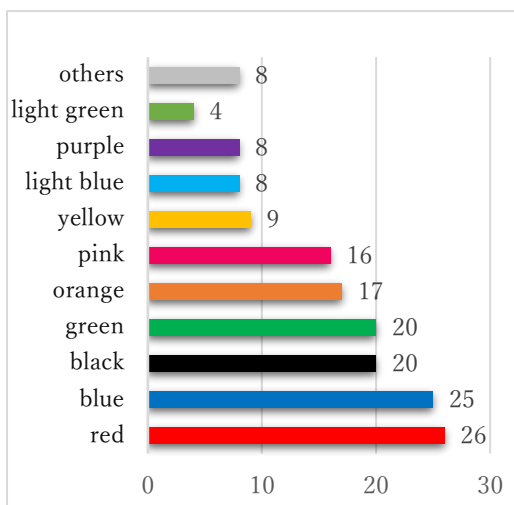
(In addition to red, there are black, blue, green, orange, and pink)

The letters were chosen by the website.

## 2 .Research /Method

### ① Survey by questionnaire

- the color of the pen in the pencil case

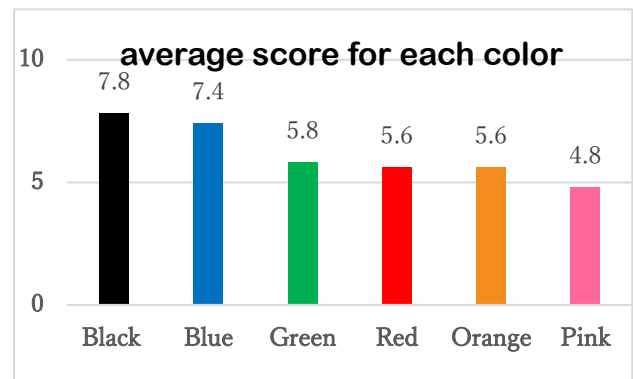


Top 6 the colors of the pen in the pencil case (black, blue, green, red, orange and pink) was used for experiment because finding a color suitable for memorization from the pen used all the time will be useful for daily study.

### ② Experiment

- Subject memorizes letters written on paper in 5 minutes
- After that write the memorized letters on another piece of paper

## 3. Result



## 4. Conclusion

The three colors that the average score was high (black, blue and green) are a cold color and effective color to calm down the state of mind.

On the contrary, the three colors that the average score was the lowest (red, orange and pink) are a color of excitement.

Therefore, the color suitable for memorizing is cold color such as blue, green and black.

## 5. Reference

ランダム文字列ジェネレーター

<https://apps.hayu.io/random>

# The tendencies of image color that people have for fruits and the reason

2-1 Group 11 : Ikuta Otoka, Suto Rikako, Takakusaki Miho

## Abstract

They were investigated that the relationship between the colors that people imagine for fruits and the frequencies or things that they think of. Besides, the reasons of the selections and what they came up to mind were surveyed.

## Methods · Research

Taking into consideration the results of the tentative research and the season of the fruits (because it was thought to have relation to the frequency of seeing the fruit), three fruits, apples, bananas, and peaches were listed, and conducted a questionnaire survey. The target is 42 people of 2-1. (Figure 1, 2)  
For each fruit, the following was surveyed.

1. The first thing that comes to mind
2. Frequency of viewing
3. What you see
4. Frequency of seeing and eating
5. What to eat
6. Image of personification and its reason
7. Colors to image and why

## Introduction

Fruits are the ones that everyone knows and those are bright and impressive. We wanted to know the image colors associated with fruits and the reasons for them.

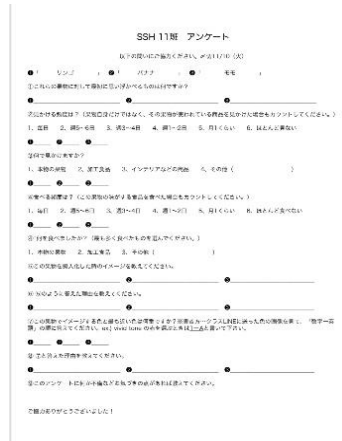


Figure 1



Figure 2

## Results

Statistical processing was conducted based on the results of 27 questionnaire.

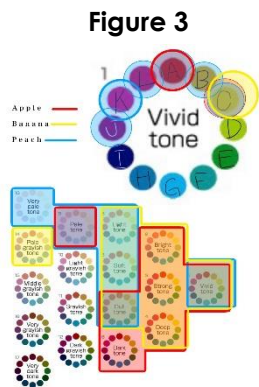
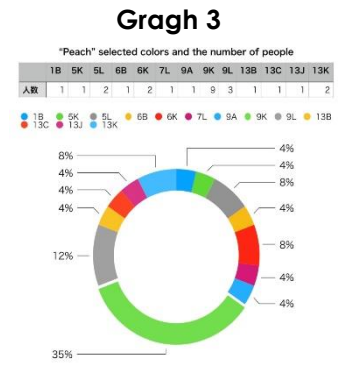
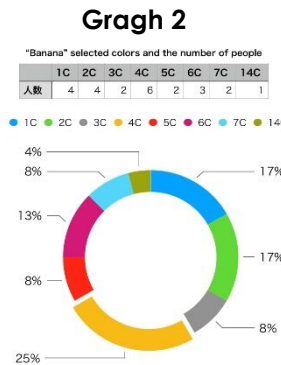
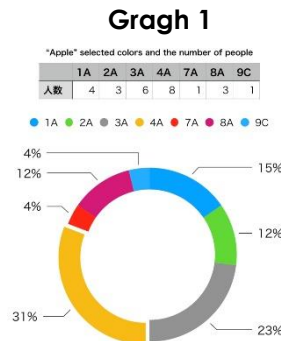


Figure 3



	The reason of selection	Perspnification	What comes to mind
Apples	Vivid and Deep Red of apple's peel / Illustration / Image	Bright / Energetic/Leader/Active	Red/Lunch box/Snow White
Bananas	Image / Banana's color	Funny/Tall Man/Supporting	Yellow/Monkeys/Rainforest
Peaches	Peach's color / Image / Illustration	Cute/Friendly	Pink/Momotoro/Cake

## Discussion

### Main Tensency

Fruits	Hue	Chroma	Brightness
Apple	Mainly red	From medium to high	From low to medium
Banana	Mainly yellow	From medium to high	From medium to high
Peach	Mainly pink	From low to high	High

The common tendency among apples, bananas, and peaches was that they had different brightness and chroma, but they accounted for the overwhelming majority

in hue.

Apples : It can be said that the image color of apples is influenced by the color of their appearance and the impression such as energetic, bright, and leader.

Bananas : The image color of bananas is influenced by the outside color and the creatures that eat bananas themselves.

Peaches : It can be said that the image color of peaches is influenced by the color of the fruit itself and the soft and cute image.



# people image color trends and reasons for them

2 – 1

Harune Yanagisawa Mai Hagino

## Abstract

This theme was chosen because each company had a different image color.

## Introduction

It was decided to check if the psychological effects of color on people match the image of companies.

## Research

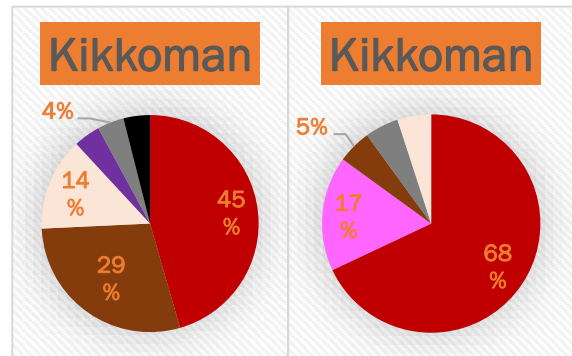
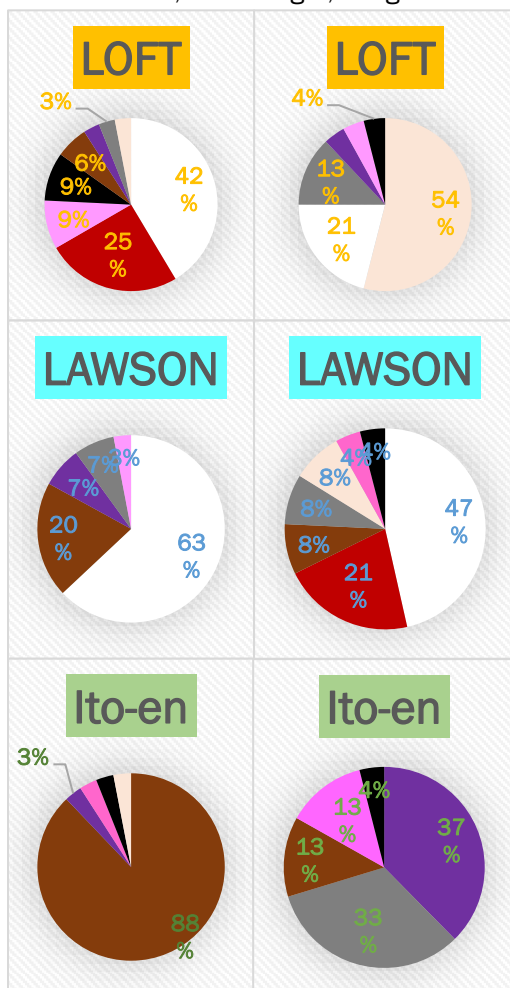
**Survey** While showing images, we took questionnaires using LINE within the class.

Q1 Which colors match your image other than the corporate logo colors?

Q2 What is the corporate image?

## Result

left; color right; image



## Discussion

**LOFT** Because the interior of the loft shop is based on white, a high proportion of people choose white, and many people have a natural image.

**LAWSON** Since the lawson logo contains white, a high percentage of people choose white, and many people have a clean image because of the color included in the logo.

**Ito-en** Since Ito-en's products are remembered tea, so a high proportion of people choose brown. Also many people have an image that it is elegant enough to match the image of tea.

**Kikkoman** Since the kikkoman logo is orange, a high proportion of people choose red similar to orange. Also high proportion of people have an image of improving appetite because the product is mainly food.

**Reference** 「FIND JOB!」 ([http://www.find-job.net/Startup/logo\\_color](http://www.find-job.net/Startup/logo_color))

# Condition of music to raise Heart rate



2-1, group 14 Fukuda Ayano Koshizawa Suzuna

## 1. Abstract

Music can change heart rate. To know which condition of music affects heart rate, the experiment was conducted. In the experiment, subjects measured heart rate before and after listening to the music whose tempo(①), beat(②) and key(③) was changed. As a result, faster tempo than the one at rest increase the heart rate most.

## 2. Introduction

We want to know how emotions and tensions change by listening to music. For example, when we listen to music with a good beat, our tensions go up. We replaced it with a change in heart rate to express emotions and tensions as concrete numbers.

## 3. Hypothesis

Three conditions to check was selected : tempo, beat, key.

- ① Heart rate raise when the tempo is fast than it is slow.
- ② Heart rate raise when the beat is 4 than it is 3.
- ③ Heart rate raise when the key is major than it is minor.

## 4. Material and Methods

- A. Heart rate at rest was taken measurement.
- B. Sound source was listened for half a minute.
- C. Heart rate was taken measurement with listening to sound source.
- D. Difference of heart rate at rest and after experimental is compared.

Equipment used in the experiment →



## 5. Results

① Metronome sound set to 40,80,150BPM was used.

	40BPM			80BPM			150BPM		
	At rest	After the experiment	difference	At rest	After the experiment	difference	At rest	After the experiment	difference
(Pulse/min)	62	66	4	62	69	7	73	82	9
	73	87	14	60	59	-1	75	75	0
	65	62	-3	59	60	1	76	74	-2
	82	76	-6	63	54	-9	78	82	4
	67	66	-1	69	69	0	64	67	3
	92	81	-13	79	73	-6	82	78	-4
Average	73.5	73	-0.83	65.3	64	-1.33	74.6	76.3	1.66

(Table1)

② 3 and 4 beat version of the same song was used.

	3 BEATS			4 BEATS		
	At rest	After the experiment	Difference	At rest	After the experiment	Difference
(Pulse/min)	73	74	1	69	71	2
	68	63	-5	68	67	-1
	82	79	-3	75	74	-1
	70	72	2	83	80	-3
	85	78	-7	71	73	2
Average	75.6	73.2	-2.4	73.2	73	-0.2

(Table2)

③ Major and minor key version of the same song was used.

	Major			Minor		
	At rest	After the experiment	Difference	At rest	After the experiment	Difference
(Pulse/min)	96	92	-4	93	97	4
	65	70	5	69	74	5
	70	73	3	64	63	-1
	76	75	-1	72	75	3
	73	76	3	70	73	3
Average	76	77.2	1.2	73.6	76.4	2.8

(Table3)

## 6. Discussion

- ① Heart rate dropped at 40 and 80 BPM, and raised at 150 BPM. 80BPM had a greater change in heart rate than 40 BPM.
  - Heart rate rises at a faster tempo than at rest, and drops if it is slower than or the same as at rest.
  - That is because humans have the nature of "tuning".
- ☆ "Tuning" is the nature that the heart rate tries to match the tempo that comes in through hearing.
- ② Heart rate dropped in 3 and 4 beats. But 3 beats had a greater change in heart rate than 4 beats.
  - 3 beats have a relaxing effect, because heart beat is 3 beats.
- ③ Heart rate increased in both major and minor.
  - Difference in key does not affect to the heart rate.
- ※ The average heart rate is 60 to 80 beats.

## 7. Conclusion

Condition of music to raise Heart rate is faster tempo than the heart rate at rest.

## 8. References

- Aizawa. (2018, March 13). *Ongakuno iyashi koukanisuite*[The healing effect of music]. <https://ivf-kyono.com/column/post-729/>
- Otoraku. (2020, February 26). *Sanbyoshi no onaku ha rirakkusu kouka ga takai? BGM deno katuyouno shikata wo goshoka*[Does three beat music have high relaxing effect? Introducing how to use such music as an BGM]. <https://otoraku.jp/column/ms14/>
- Konikaminoruta. (n.d.). Taichokanrihen shinpakusunokatuyouhou[Volume health care:how to use heart rate]. [https://www.konicaminolta.com/jp-ja/runpro/running/sports\\_safety/004.html](https://www.konicaminolta.com/jp-ja/runpro/running/sports_safety/004.html)

# What do main characters of popular comics have in common?

2-1 team15

Natsuki Saito

Noa Hagiwara

Satomi Mogi

## 1 Abstract

Do popular comics such as “Demon Slayer” have any common points?

Main characters were focused on in this research. We formed hypotheses that they have a special ability and an impressive physical characteristic and carried out the research. As a result, it showed that most of main characters who were searched have them, so the hypotheses were proved.

## 2 Introduction

**Back ground;** There have been a lot of famous comics in Japan. For example, “Demon Slayer” was read by people around the world. And the comic is still loved. Why is it so popular? There may be some common points.

**Hypothesis ;** We thought and started research “Main character in famous comic has an impressive look and a special ability.”

## 3 Research methods

### Temporary research

Send a questionnaire to 39 students in the second grade class.

Contents of questionnaire

Please write your impression of the main character in the work.

Work: ONE PIECE Attack on Titan Kingdom Haikyuu!!

(These are works that have been ranked among the top 10 in the 2016-2019 sales ranking for five consecutive years.)

**Research1** Send a questionnaire to 39 students in the second grade class.

Contents of questionnaire

Please write the visual characteristics of this person.

Work: ONE PIECE Attack on Titan Kingdom Haikyuu!!

The Seven Deadly Sins, my Hero Academia, Tokyo Ghoul (These are works that have been ranked among the top10 in the 2016-2019 sales ranking for four or five consecutive years.

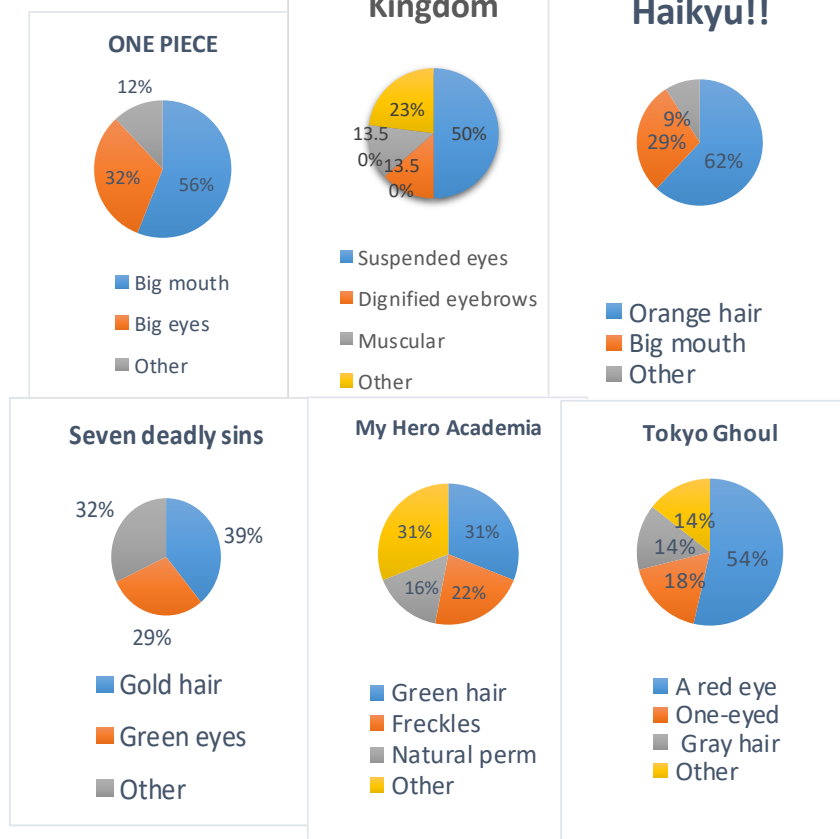
**Rsearch2** Check the profile of main character on the official website of the work. Work: Same as research2

## 4 Result

### Result 1

	ONE PIECE	Attack on Titan	Kingdom	Haikyuu!!
Awareness:(Out of 34 people)	100%	94%	85%	94%
Something that one has read or seen(Out of 34 people)	41%	12%	15%	26%
Impression of the main character	Friendly compassion 32% Energetic 24% Strong willed 19% Other 25%	Passion 25% Strong 25% Other 50%	Strong 50% Other 50%	Energetic 42% Strong willed 32% Other 26%

### Result2



### Result3

ONE PIECE	Attack on Titan	Kingdom	Haikyuu!!	Seven Deadly Sins	My Hero Academia	Tokyo Ghoul
Extend one's arms	Become a titan	Have a good sense of movement	Have a good sense of movement	Use one's power	Superhuman	Fall prey to

## 5 Discussion

Temporary research shows that the main character has a lot of impression of being cheerful, strong willed. We can tell from the results of research2 that color are drawing attention to in four of seven works . Research2 shows that all of the main character has a special ability. From these, we think that popular comics have a tend for the main character to have a positive personality and a clear image color like red ,yellow, orange or green and special ability.

# The Connection between Expression and Feeling

2年1組 Saaya Konno Hinano Saito

## Abstract

We conducted this study to learn about the connection between facial expressions and emotions. We hypothesized that smiling expressions brighten the mood and make the video interesting. However, the results were not as good as hypothesis. The reason is thought to be that the smile and serious expression could not be completely reproduced. It is also believed that the reason is that the videos were not viewed one by one.

## 1. Introduction

### (1) Purpose

The theme is because we wanted to know about the effect of smile.

### (2) Hypothesis

An experiment reported in the July 2008 issue of Nature Neuroscience by a group of researchers from Dr. Siskind at the University of Toronto. When we made the subjects express "fear" and "loathing" we recorded the physical changes when they actually felt "fear" and "loathing". So, we thought it would be more interesting than when people saw the joke with a smile.

## 3. Result

	A (point)		B (point)	
a	sideway	8	lengthway	9
b		8		7
c		9		8
d		9		9
e		7		8
f		10		10
g		9		8
h		7		10
i	lengthway	6	sideway	8
j		7		6
k		7		9
l		7		6
m		7		8
n		6		5
o		6		6
p		6		7

The average score for experimenting with smiling faces was 7.625 points. On the other hand, the average value when watching a video without expression was 7.562.

## 2. Methods/Research

- 16 subjects were shown a video A and a video B. The 2 videos are the same comedian and have a similar composition.

- ① 8 of the 16 people were shown video A while holding disposable chopsticks sideways in their mouth to make a smile.



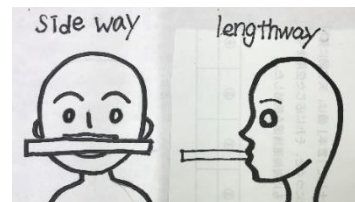
They were shown video B while holding them lengthways to make a serious look.

- ② The other 8 people were shown video A while holding them lengthways.



They were shown video B while holding them sideways.

- Everyone scored how many of the 10 points the fun of the videos were. 4 criteria: interesting, rather interesting, rather uninteresting, uninteresting were shown.



## 4. Conclusion

The score of the fun of comedy was almost the same whether it was seen with a smile or a serious look. From this, it can be thought the facial expression you make does not affect the way you feel funny. "Also, the reason why "It is more interesting to watch a video with a smile" was not obtained" It is expected that the smile could not be completely reproduced with disposable chopsticks. It is also thought that the cause of each experiment is that subjects did not see the video one by one.

## 5. Reference

- 表情と情動 Facial expression and emotion ([https://tmu.repo.nii.ac.jp/?action=repository\\_action\\_common\\_download&item\\_id=12360&item\\_no=1&attribute\\_id=226&file\\_no=1](https://tmu.repo.nii.ac.jp/?action=repository_action_common_download&item_id=12360&item_no=1&attribute_id=226&file_no=1))
- video A: [公式]サンドウィッチマンコント[占い師]
- video B: [公式]サンドウィッチマンコント[職安] (<https://youtu.be/AMewII-MfmU>)

# A way to reduce screen time on people's smart phone and stress.

Rina Shimizu Nakasatomi Koharu

## 1. Abstract

To use too much smartphones causes people a lot of negative effects. However, smart phones can not separate from people's lives. It is necessary for people to get along with smart phones. The time people use smart phones, what is called, screen time. Thus, we wanted to look for a way to reduce screen time. In addition people should continue the way so we also need to know a way for people not to feel stress. From the research, we suggest the best way.

## 2. Method

- ① To erase top 3 applications used for a long time.
- ② To limit time <morning : 30 minutes / night : 1 hour >
- ③ To send own screen time to class Line.

Each ways were conducted by 10 people.

After a test, a following survey was conducted.

### 《 Question 1 》

Do you feel stress?

No 1-2-3-4-5-6-7-8-9-10 Yes

### 《 Question2 》

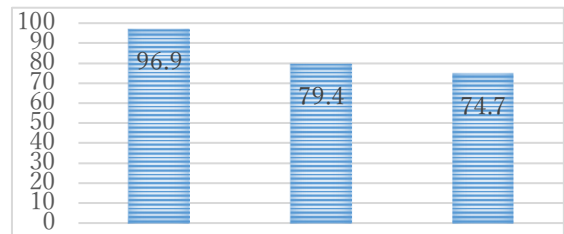
Can you continue the way ?

No 1-2-3-4-5-6-7-8-9-10 Yes

### <Hypothesis>

② is the less percentage. It's because screen time certainly reduces if they use only the limited time.

## 3. Result



<proportion of screen time >

~in comparison with before the test~

③ "sending own screen time to class line" is the best way to decrease screen time.



<stress >

③ "sending own screen time to class line" is the most stress less way.

<continuity >

A big difference was not seen in these three ways.

## 4. Conclusion

The results of the test show that "sending own screen time" is the best way to reduce screen time. As a factor of this result, self-control works by being seen from others. It prevents overuse of a smartphone. In addition to it there is no restriction on time zone or application in ③ way. This lead to relieve stress.

# THE IMPORTANCE OF RHYMMING

Focused on differences between Japanese nursery song and English nursery song

2-1 Yamada Nao Enomoto Kaede

## ABSTRACT

Being interested in nursery songs. Expected they are easy for children to sing and remember by rhymes. Researched relation between memorable songs and rhymes.

## METHOD

- 1 Choose the songs and research characteristics the songs from Japanese textbooks and English textbooks.

### THE FEATURE OF THESE SONGS

#### 1 JAPANESE NURSERY SONGS

They included a lot of repetition of the same word  
They included the course of an event.

#### 2 ENGLISH NURSERY SONGS

To rhyme in word-final position.

- 2 Made three songs based on Japanese or English nursery songs =LIST 1

- 3 Sang these three songs by three groups.  
(Five subjects per group)

\*there were not any differences in every group.

- 4 Conducted the survey

The items/ Choose a favorite song.  
Choose a memorable song.

- 5 After a week

The three songs were sang by the same subjects

- 6 Conducted the survey

The items/ choose one song which is the most easy to sing and could sing better than before

### MADE THREE SONGS Feature of these songs

#### Song A

LIST1

Japanese, included rhyme, the course of an event

#### Song B

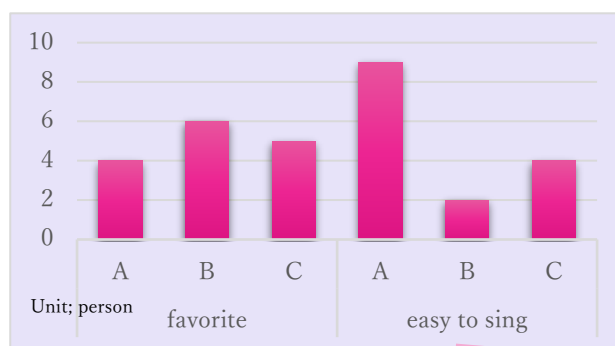
English, included rhyme, the course of an event

#### Song C

Japanese, exclude rhyme and the course of an event

## RESULT

The first research (a questionnaire)



The second research



Found Song A , Japanese, included repetition of the same word and the course of the event , was the most easy to sing. Also, found that it is easy to sing after a week.

## DISCUSSION

The songs that rhyme every phrase and have repetition of same word are easy for people to sing,at the first time and after a week. Consequently, memorable songs are composed by rhymes. It shows that rhyming is one of the important elements for nursery songs

[Encyclopedia] <https://textbook.kyogei.co.jp/2020shou/songlist.html>

# The way to sing a song well

Abstract

2 – 1 ( 2 1 ) Yoshizawa Miku Kabasawa Sakura

We like to listen to music. We have established my favorite singers but they are more different gender, their singing voice, how to sing and so on. Why do we like the singers? Why do we think that they are sing well? We researched focused on way to sing. We send a questionnaire to classmate, form an opinion as class each other.

## 1. Introduction

### (1) Purpose

To enable singing in the way that everybody thinks is good.

### (2) Hypothesis

- ① The way of singing that vibrato is on is thought good like by people .
- ② The way of singing with intonation is thought good

## 2. Methods/Research

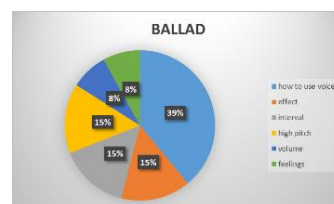
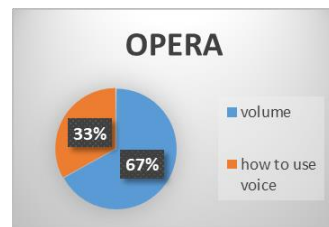
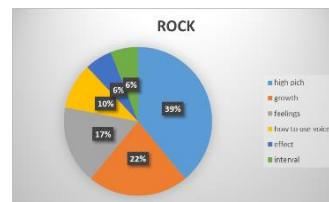
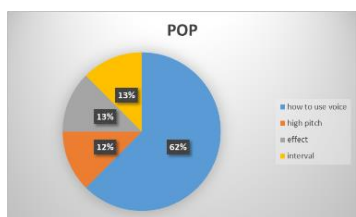
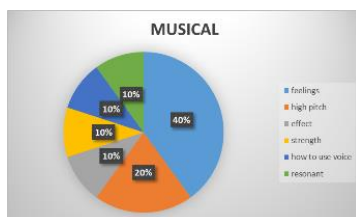
A questionnaire was sent by 2-1 thirty members.

Q1 Who singer do you thing the best well?

Q2 Please tell us a best song of the person that you answered in Q1?

Q3 How do you thing how to sing in Q1?

## 3. Results



## 4. Discussion

The hypothesis was that many people felt that vibrato and emotional intonation were good, but the number was less than expected and the results were not remarkable. And many people were paying close attention to details such as how to exhale and how to make a voice.

In addition, when the results were aggregated for each genre, there were some that were biased.

## 5, Reference

ja,m,wikipedia,org/otokake,com

# The difference in impression between English and Japanese

2-1 Kasai Noe Kawashima Nanako

## Abstract

Recently, the number of artists entering Japan from other countries is increasing. Many song of them have both English and Japanese lyrics. Therefore the difference from the Japanese point of view was examined.

## Introduction

Japanese are more accustomed to hearing Japanese than English, so they can understand the meaning of the lyrics in Japanese and the scene comes to mind. Therefore many people feel that Japanese is more comfortable.

## Method

Uplifting song → Under the Sea

Slow song → A Whole New World

Ask 12 people to listen to the English and Japanese versions of each song and take a questionnaire.

## Result

① old-fashioned or ②modern ③bold or ④calm ⑤cool or ⑥ lovely ⑦clear or ⑧fluffy ⑨mellow or ⑩frank ⑪an image appear in one's mind or ⑫not appear ⑬the sounds of the words in tune with the tune or ⑭not in tune with ⑮varied or ⑯monotonous ⑰approachable or ⑱not approachable ⑲like or ⑳dislike

### A whole New World

	①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	⑪	⑫	⑬	⑭	⑮	⑯	⑰	⑱	⑳	
E	3	9	10	2	12	0	12	0	7	5	7	5	12	0	11	1	5	7	12	0
J	6	6	4	8	6	6	6	6	10	2	8	4	5	7	4	8	10	2	9	3

### Under the Sea

	①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	⑪	⑫	⑬	⑭	⑮	⑯	⑰	⑱	⑳	
E	3	9	12	0	11	1	9	3	5	7	6	6	9	3	9	3	4	8	12	0
J	8	4	7	5	2	10	8	4	1	11	11	1	6	6	3	9	12	0	11	1

## Conclusion

- It was found that the voiced sound and the stop sound peculiar to English gave the impression that the connection and break between words were clear.
- It was found that the soft sound peculiar to the Japanese language gave the impression that the connection and separation between words were ambiguous.
- It was found that Japanese is related to the mother tongue.
- Japanese are more accustomed to hearing Japanese than English, so they can understand the meaning of the lyrics in Japanese and the scene comes to mind. Therefore many people feel that Japanese is more comfortable.



# Transition of Human Thought

## ~Are “dictators” absolute evil? ~

Group13 Hanana Sekiguchi Rina Iino Chiharu Shimizu

### 1. Abstract

“Dictators” are often had the strong negative images. But in real, they not necessarily govern people by their region of terror. There were some dictatorships which done when they had no choice but had to do. We researched the image-change to them by our presentation.

### 2. The object of this research

To improve intuitive minus image head for “dictators”.

### 3. Hypothesis and word’s definition

Most of the people have minus images to “dictators”. The positive answers to questionnaire will increase after the presentation by us.

“Dictators” of this research refer to “persons who gain control over all rights of management in their hands”.

### 4. The way of research

#### (1) The provisional research

Take questionnaires to our classmates. The following is the contents.

*Q1. Who comes to mind when you hear “a dictator”?*

*Q2. Write down why they hit.*

#### (2) The main research

① Take questionnaires to eight of our subjects. The following is the contents.

*Q1. Write down your images to the “dictators”.*

*Q2. Why do you think so?*

② Make a presentation about *Adolf Hitler* with the PowerPoint we made.

③ Take questionnaires again.

*Q3. Write your images to the “dictators” if you changed your mind after our presentation.*

### 5. Result- Images to the “dictators”

**Before the presentation:** *People who take control of a people or speech, have greed for gold and power or detestation of people. They are strong, evil and scary.*

Indication of the subjects before our presentation were abstract as a whole.

**After the presentation:** *Hitler may have not been absolute evil since to establish a dictatorship could be the best way for German government at that time. Hitler tried to survive as well as people did. Racism is bad.*

Almost replies turned concrete because of answering just after the presentation. The point of all the subjects were that in addition to their previous answers they had positive images than before.

### 6. Discussion

Therefore, the presentation cannot change all of the negative thought to the “dictators” perfectly. We had better take questionnaires before making a presentation that focus on one dictator, for example, Hitler or Stalin.

# WHAT IS THE MOST EFFICIENT WAY TO MEMORIZE?

## 1. Abstract

It is difficult to remember the historical era. To address this problem, we research an efficient memorization method, which can be used when studying for a university entrance examination and tests. As a result of our research, the most efficient way was play on words.

## 2. Introduction

### 【1】 Objectives

Researching how to learn historical phrases by heart



Use it for tests and a university entrance examination.

### 【2】 Hypotheses

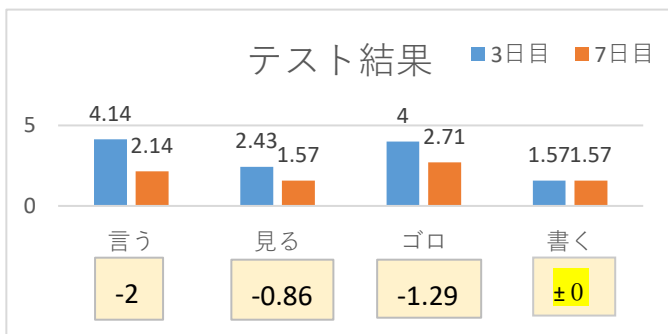
- (1) Play on words is the most efficient way to learn.
- (2) It is easier to memorize phrases with interesting words in play on words.

## 3. Methods

- ①Survey the degree of ease to memorize
- ②Test in 3 and 7 days
- ③Tabulate the results

## 4. Results

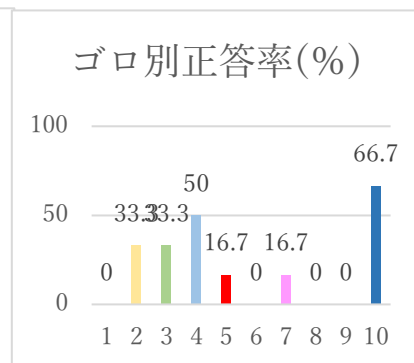
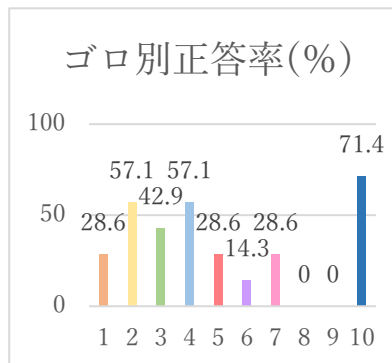
### Hypothesis (1)



- Short-term: saying and play on words
- Long-term : writing
- Saying is easy to forget.
- It is not hard to forget, but play on words is good for memorizing lots of things.

### Hypothesis (2)

年号・出来事	平均順位
1. 1679年 人身保護法	3.61
2. 1639年 日本、鎖国	4.02
3. 1819年 アメリカ、フロリダ獲得	5.07
4. 1875年 フランス、第三共和国憲法	5.98
5. 1767年 マイソール戦争	7.17
6. 1813年 東インド会社の特権廃止	8.61
7. 1796年 白蓮教徒の乱	4.27
8. 1887年 ロシア・ドイツの再保障条約	5.68
9. 1905年 ベンガル分割例	8.24
10. 1592年 豊臣秀吉、朝鮮侵略	2.15



- There is no difference between play on words combined with three-digit words and with four-digit.

## 5. Discussion

- (1) • Play on words is the most efficient way.
- (2) • Regardless of the ranking of the survey, play on words which is relevant to the historical events is easy to remember.
- It is easy to learn play on words which is linked with the historical events or has pun.
- Survey's result shows most students think play on words with four-digit is easy to learn, but it is not true.

**Abstract**

It was interesting for us to find where the teacher was looking during the class. We verified it by taking questionnaires and videos. It was in the middle of the classroom that attracted a lot of attention.

**1. Introduction**

We are interested in teacher's point of view in class, and the seats which students can concentrate on the class. The hypothesis that the rear left seats are seen by teacher the most.

The following points, Cutenberg diagram(sight move upper left, upper right ,lower left, lower right,), law of Z and low of F, considered classroom are plane.

**2. Methods/Research**

- A. ①The classroom was divided into nine groups. (figure1)
- ②The teachers put on glasses with recording function and shoot the video.
- ③The time the seat is shown in the video is measured

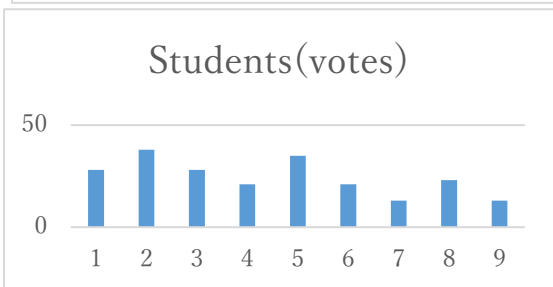
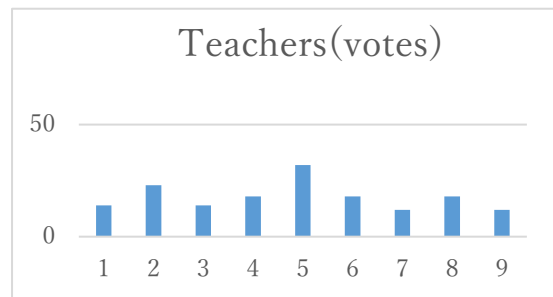
Teacher's desk

3	2	1
6	5	4
9	8	7

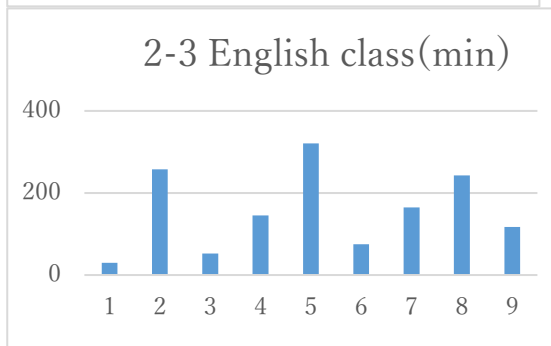
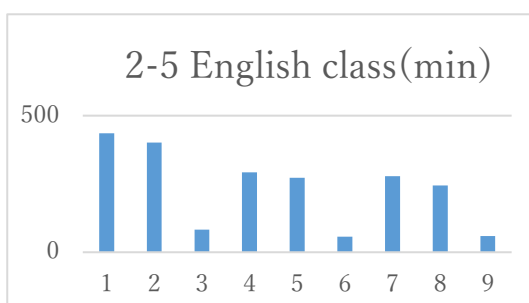
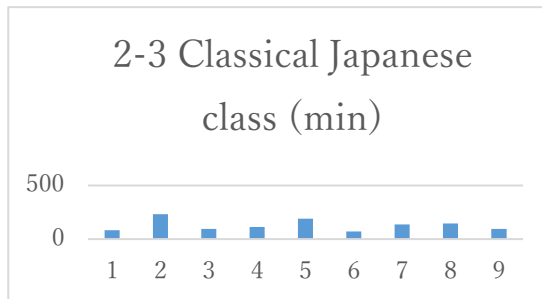
- B. Survey students and teachers ask them a place where one's eyes naturally move.

**3. Result**

◎Survey



◎Video Analysis



**4. Discussion**

1) Conclusion

- The results of the questionnaire and the actual results of the verification overlapped, so we knew that most of the results were from experience.
- In the video, there were individual differences between teachers, but I think that the so-called "2nokawa" attracted a lot of attention.

2) Perspective for the future

- This time, we only examined the perspectives of teachers, but we also want to examine how the perspective of teachers changes depending on the student's perspective.

**5. Reference**

REBCO 不動産とWEBに強くなるコラムサイト  
[https://reblo.jp/media/reblo\\_more/039/](https://reblo.jp/media/reblo_more/039/)

# To reduce your smartphone usage time by 25% or more

~compare the weekly average~

2-3 Group9 Onai Yurika Shinoda Yui Masuda Yuko

## Abstract

We found four methods to reduce wasted smartphone usage time, and examined how each method changes smartphone usage time. The biggest decrease was 27.3% on average when the 30 minutes limit was applied to all apps.

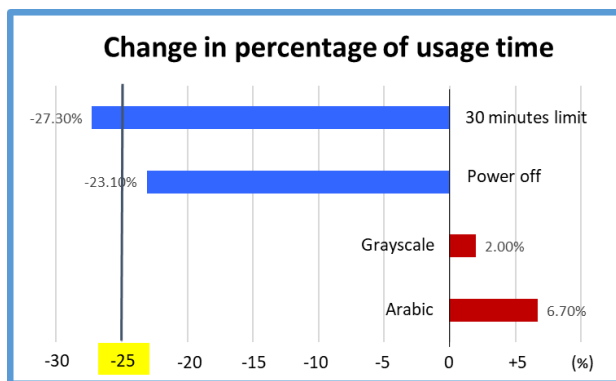
## Introduction

We wanted to find a more practical way to reduce our smartphone usage time in order to reduce the amount of time we spend using our smartphone and spend that time improving our abilities.

## Methods

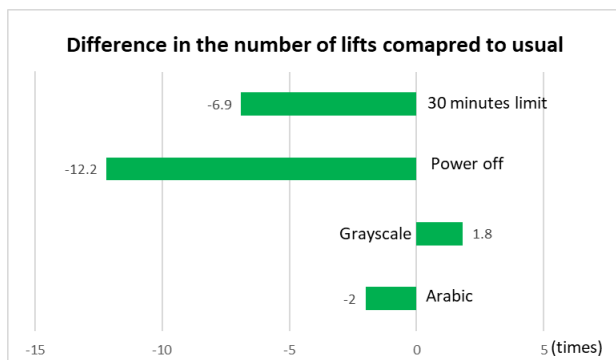
1. Make the screen black and white (hereinafter referred to as Grayscale)
  2. Limit 30 minutes to all apps
  3. Set the language setting to Arabic
  4. Turn off the power every time you use
- Compare the average usage time per week with each method and when nothing is done.
  - Conducted for 13 people in each method

## Result



(graph1)

Most reduced → 30 minutes limit

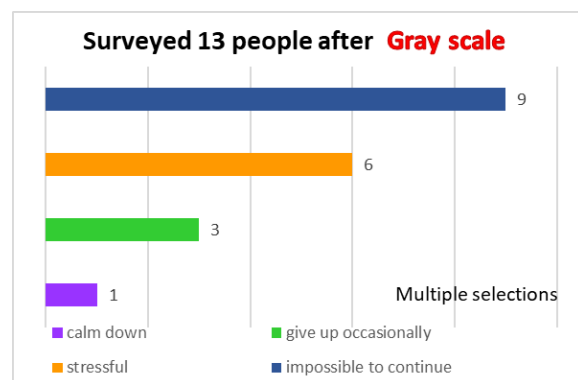


(graph2)

The number of lifts was also reduced by the method in which the usage time was reduced compared to when nothing was done.

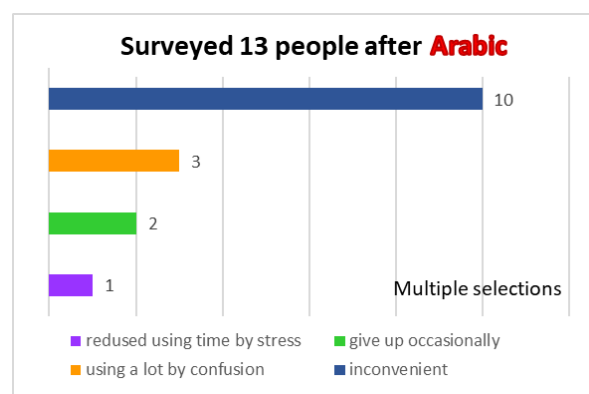
## Consideration

The average usage time of Grayscale has decreased the most in the pre-verification, but has increased in the verification. Moreover, 9 people answered that it was impossible to use Grayscale for a long time



(graph3)

Also, the average usage time of Arabic has increased compared to when nothing was done. It is presumed that Arabic had no effect because the basic display was in Japanese, and many of the subjects viewed photos and videos. Furthermore, Arabic instructions were sometimes displayed, so 10 people said it was inconvenient.



(graph4)

Therefore Grayscale and Arabic are not practical methods.

- 30 minutes limit - Gray scale
- 30 minutes limit - Arabic
- Power off - Arabic

Significant differences were confirmed for each of these three combinations.

We recommend 30 minutes limit to reduce your usage time of smart phone.

# Features common to misused words

2 - 3 Group10 Tomioka Ayumi Hiyama Sumire Hirayama Karin

## Abstract

Words are usually spoken, written and so on, but some words are misused by people. So we investigated misuse of Japanese and thought about why they are misused. To solve this problem, it was important not to capture words with images.

## 1 Introduction

### (1) Research background

Investigate misuse of Japanese and think about why it is misused so that we wanted to be able to use words in the correct sense in the future.

### (2) Hypothesis

Classified into the following 3 to find common features.

- ① *Predicting the wrong meaning from kanji*
- ② *Not knowing its original meaning*
- ③ *Confusion with the meanings of different words*

## 2 Research method

We read books about misuse and suggested using words in our research. We created a questionnaire to support the selection criteria and asked 35 students in the 2nd grade and 3rd group to answer. Classified the words that are used incorrectly among the words that are used frequently by more than 15 out of 35 people. Then, those features were searched.

## 3 Result

From the results of the questionnaire, 26 words were classified into 5 categories and features common and each were searched. Then, we concluded in the following 5. Figure 1 shows the percentage of the number of each words from 1 to 5.

- ① *Predicting the wrong meaning from kanji and image of words*
- ② *Foreign words spread in the wrong sense*
- ③ *Confusion with the meanings of different words*
- ④ *Duplicate meaning*
- ⑤ *Make a mistake in grammar*

### 【Example】

- ① 失笑する(Laughter) 割愛(Omitted) 破天荒(Unprecedented)/ 8 other words
- ② セレブ (Celebrity) ハッカー (Hacker) 王道 (Politics) /1 other words
- ③ にやける(Weak)/ 4 other words
- ④ 違和感を感じる(Feel something is wrong) /2 other words
- ⑤ 上には上がある(above is above) /2 other words

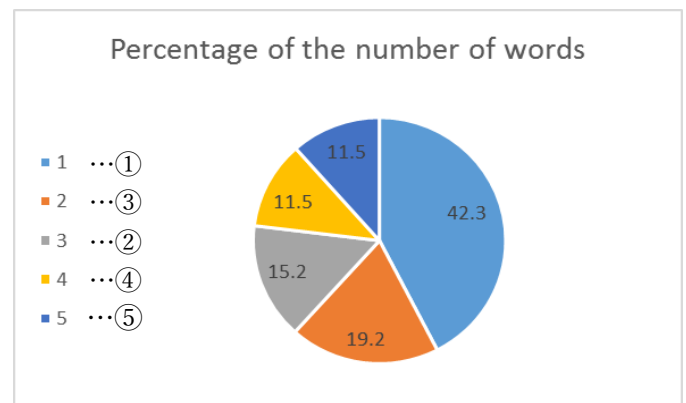


Figure 1

## 4 Discussion

There was no common feature in all the words used in the wrong sense and only after classifying them into 5, we were able to see the common points. From the result that the ratio of ① (Predicting the wrong meaning from kanji and image of words) is high among them, Japanese people tend to capture words with images. As a result, many words are used with the wrong meaning.

## 5 Reference

- 清水由美(2020)『すばらしき日本語』ポプラ社  
橋本治(2005)『ちゃんと話すための敬語の本』筑摩書房

# The change of the Japanese languages with the changing times

～Focusing on the **youth languages** from Heisei to the present～

2-3-13 Inaba Ryo Kubo Ririko

## Abstract

We were interested in swing of words. In order to deepen our understanding a literature survey and a questionnaire survey. As a result, “abbreviated” is still used, and “inverted” and “borrowed” are no longer used.

## 1 Introduction

**Objective** : Investigate the recent buzzing of words by focusing on youth languages.

**Hypothesis** : Some youth languages has been used in the past and is still established, while others have not.

**Question** : What do obsolete and remaining words have in common ?

## 2 Method/Research

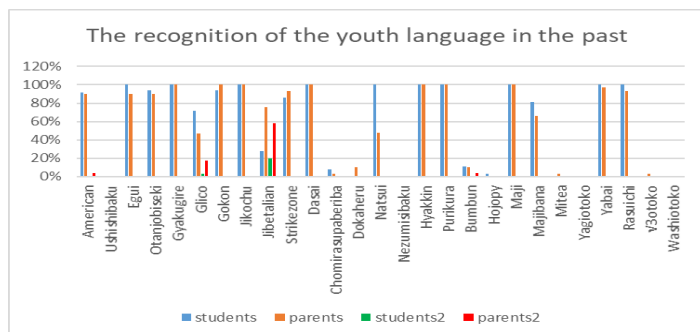
1 Two dictionaries of youth languages published in the early Heisei era were used to investigate the words used at that time.

2 A questionnaire survey of parents and students using 27 words looked up in the literature survey were done to find out the awareness.

3 Doing another survey by presenting the meaning of the words. At the same time, students and parents were asked about the youth languages and the way it is obtained.

4 Looking up the languages of today’s youth languages on the Internet.

## 3 Result



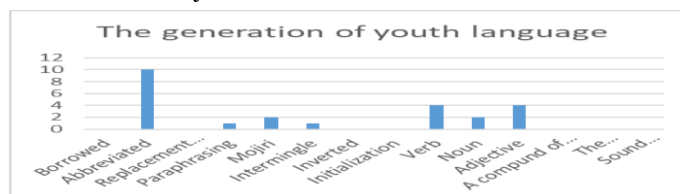
As a result of first survey, there was not much difference in recognition between parents and students overall. But, the words “Natsui” and “Majibana” had higher recognition

among students than parents who were young people in the early Heisei era. In the second survey, “American” “Glico” and so on almost all respondents answered that they did not know much about the difference from the first survey.

The results of today’s youth languages collection show that students get them from television, social networks and friends, and parents get that from children and TV.

## 4 Discussion

Based on the results of the first survey, the hypothesis was proved by finding that some were used in the past and are still established, while others are not established. The results of the second survey show that the words of young people who used to be spoken in the past are now perceived in a different way.



Based on the literature, the generation of youth languages was categorized. Then, we found out that “abbreviated” is common to both the past and the present. This is **easier to spread** than the original words because “abbreviated” is **faster** and **easier** to say. That is why it is still firmly established. Also, it was discovered that “borrowed” “inverted” have gone out of fashion. This is less widespread than the original words because the meaning is difficult to convey and express.

## 5 Reference

米川明彦『若者ことば辞典』『日本俗語大辞典』東京堂出版

「いもけんブログ」(sigotonokatati.com)

# What color is the easiest to memorize?

2-3 Group14 Ebara Saki Otsuka Miharuru Nakazato Momoka

## Abstract

We wanted to know the right color for memorizing, so we conducted an experiment on my classmates and found that orange is the best color for memorizing.

## 1. Introduction

### (1) Background

I wanted to learn as many words and phrases as possible efficiently.

### (2) Hypothesis

Blue is the most suitable for memorizing because it has the psychological effect of increasing concentration.

## 2. Methods

In a preliminary study, we conducted a questionnaire asking “What color do you usually use when memorizing” and examined the four colors that many people use.  
⇒result...orange, blue, black, red

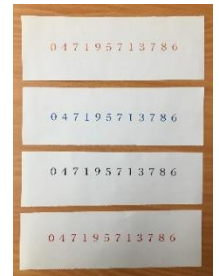
### <Experiment 1>

- ①Four kinds of 10-digit numbers are prepared and colors are assigned as shown in Fig.1.
- ②Validation is conducted over a period of three days. (On the first and second days, check the sequence of numbers determined in ① for 30 seconds, and test on the third day.)

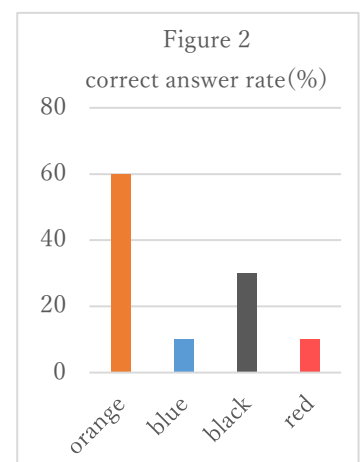
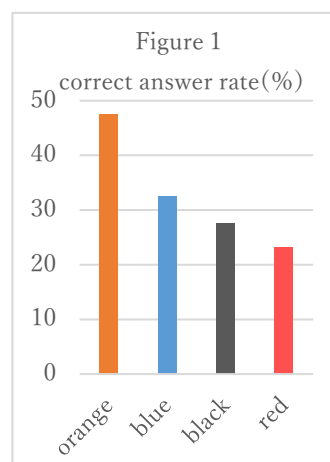


### <Experiment 2>

- ①Prepare one kind of 10-digit number.
- ②Conduct verification for three days as in Experiment 1.



## 3. Results



- From the figure1, the correct answer rate of orange was the most common at 47.5%.
- From the figure2, the correct answer rate of orange was the most common at 60.0%.

## 4. Discussion

From the results of Experiments 1 and 2, it was found that orange is the most suitable for memorization because the correct answer rate of orange is the highest.

## 5. Reference

『色彩心理学(色の効果と心身への影響)』

<https://www.i-iro.com/psychology>

『色が人にもたらす影響、心理効果を理解して、ビジネスシーンに活かそう!』<https://www.l-m.co.jp/blog/?p=618>

# How teachers turn their eyes during the class

2-3 Group16 Noguchi Yoshiha Okuno Waka

## Abstract

This is how teachers turn their eyes during the class.

The result shows where they tend to look.

## 1 Introduction

### (1)Background

Students sometimes fall asleep during the class. However, that is a serious problem.

Students must concentrate on their class. It was thought that students keep awake when they have seriousness.

This is why our group researched how teachers eyes move during the class.

### (2)Hypothesis

Students sitting in the front row of a classroom are hard to be looked.

## 2 Methods

Instrument.....six video cameras, rest made from cardboard

① Get permission from students and teachers.

Figure 1 Front

② Put cameras on the rest.

③ Divide the classroom into six parts like figure 1.

Back

④ Put the cameras like figure 2.

Figure 2 Front

⑤ Take the movie for 10 minutes.

Back

## 3 Result

Two teachers cooperate in this research. Twice researches were done per a teacher. And then take the average measured value.

These numbers are the number of times teachers looked in one class.

Teacher1

Teacher 2

5	4	6
4	6	6

8	8	7
8	6	7

## 4 Discussion

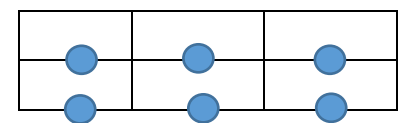
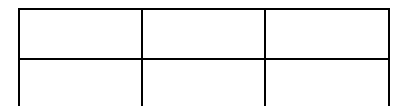
It was showed that students were looked equally.

So it was found that the hypothesis was wrong.

Students must concentrate on the class without regard for the seat.

## 5 Resources

Questionnaire to 43 students in the class





# Let's memorize efficiently !

## ~How to remember 80% by puns~

2-3 Group17 M.Murakami N.Horikawa M.Yamabe

### 1. Abstract

Many words needed for the exams make us troubled, so we decided to use puns in a week and studied how to remember 80% of that range. In order to obtain an easy-to-understand results, short-term memory and long-term memory were divided into two tests for each experiment. This study showed that if you read aloud more than 2 laps a day  $\times$  3 times a week, you can remember 80%.

### 2. Introduction

#### (1) Purpose

We became humanities students from the second grade, and since we have more subjects to memorize, so we wanted to find an efficient way to remember.

#### (2) Hypothesis

You will remember it if you say two laps three or more times a day. According to the book, it is desirable to remember say seven times a day.

### 3. Method/Research

#### i) Divided students into 4 groups

- Group1 is 2 rounds  $\times$  1time/day, group2 is 2 rounds  $\times$  2 times/day, group3 is 2 rounds  $\times$  3times/day, group4 is 2 rounds  $\times$  4 times/day.

#### ii) Hand out the prints for memorization

- Have each group remember at a fixed number of times for 5 days.

#### iii) Take the first test

... Spend two days without looking at the prints after the test

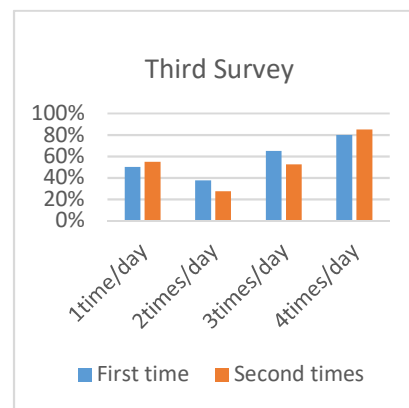
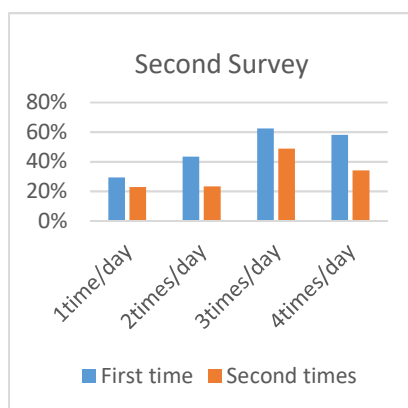
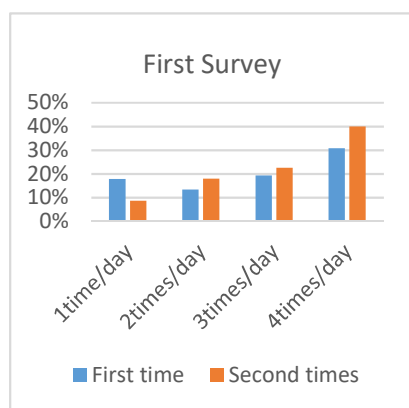
#### iv) Take the second test that is different from the first one

#### v) Grade two tests and get the average score

- If the score of the first test is 90% or more, it is considered as short-term memories.
- If the score of the second one is 80% or more, it is regarded as long-term memories.

### 4. Result

The survey was conducted three times.



### 5. Discussion

- No hypothesis was demonstrated in any of the surveys, but the score rate tends to increase as the number of times repeats.
- In some of the surveys, the results of the second test were higher than those of the first test, probably because they memorized the answer to the wrong question in the first test.
- There were individual differences in memorization, which affected the test results.

### 6. Reference

“STUDY HACKER” <https://studyhacker.net/columns/kurikaeshi-study>

# HOW TO WRITE THE MOST READABLE TEXTS FOR TEENS

## ~FOCUS ON FONT, FONT SIZE, LINE SPACING~

2-3-18 Oka Utano, Moro Minori

### 1. Abstract

Most teens must read and make materials. It can be described that making readable materials will be necessary. However, it can be difficult to find what fonts, font size, and line spacing is best. To address these problems, we send questionnaires to students, and get them to choose the most readable writing from some writings written in different forms.

### 2. Introduction

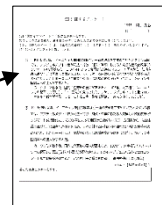
#### •Hypothesis

The most readable text was made in Meiryō, the default line spacing, and 11 points in size.  
※"Readable" means something that you feel is easy to read "when you read" "when you get it as material" and "as a sentence".

### 3. Method

- ① In the preliminary verification, when we conducted a questionnaire with MS Gothic, Yu Mincho, MS Mincho, and Meiryō, the number of votes collected in MS Gothic and Meiryō was almost the same. So, we conducted the questionnaire again with only these two.
- ② Of the two, MS Gothic collected more votes, so create sentences written in MS Gothic with different sizes and line spacing.
- ③ Distribute them to students, and ask them to select the sentence that they think is the easiest to read, and get them to fill in the reason.

Questionnaire form used for the experiment



### 4. Result

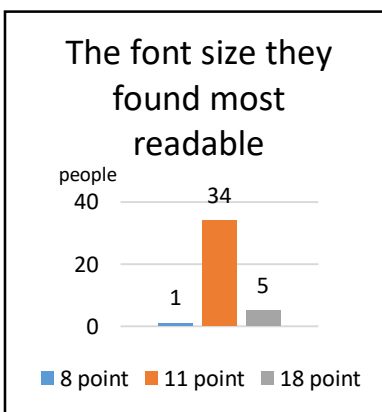
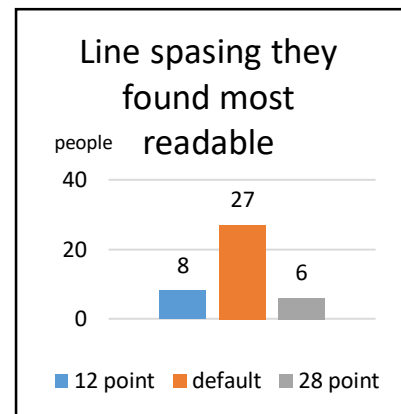


Figure 1→

According to the graph, the text written by the default lines got the most votes.

←Figure 2

According to the graph, sentences written with 11 points received the most votes.



### 5. Discussion

With the highest number of votes, we found that the most readable text was made in MS Gothic, the default line spacing, and 11 points in size.

(References: UD 書体 | モリサワのフォント | 株式会社モリサワ

<https://www.morisawa.co.jp/fonts/udfont/>)

# How to keep beautiful of our hair? ~Pay attention to a way to haircare~

Science research grade 2-4 Nagisa SINNDUO Saho IGUCHI

## 1, Abstract

It is no exaggeration to say that hair is life for high school girls. But hair become damaged. So, we want to know the best way to haircare. In this study, we searched what should be used to heal our hair. As a result, we find out conditioner keeps beautiful of our hair.

## 2, Hypothesis

Both shampoo and conditioner keep our hair beautiful.

⇒It's because conditioner protects surface of hair.

## 3, Method

1, Soak three strands of hair in artificial seawater, chlorine water and bleach for 1 hour. Then wash in three ways: water only, shampoo only, shampoo and conditioner. When washing hair, wash gently as if stroking it and leave for five minutes. In addition, the hair is dried 20 cm apart from the dryer.

2, Spread the liquid glue on the prepared slide glass and gently place the dry hair on it. When the liquid adhesive dries, it is observed under a microscope.

## 4, Result

### <Before doing trial.>

We want to return to this state.



### <Before washing>

The surface of the hair called the cuticle was damaged. In particular, hair soaked in bleach has a large amount of dirt and severe scratches.



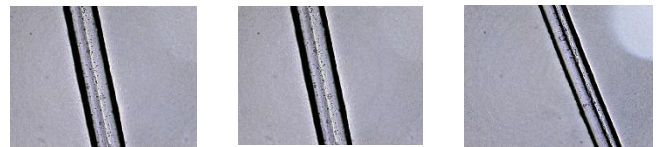
chlorine water

Seawater

bleach

### <When use shampoo and conditioner>

Saltwater-soaked hair and bleach-soaked hair, while still dirty, are healing. The cuticle was almost healed.



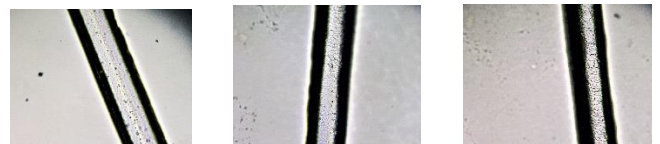
chlorine water

Seawater

bleach

### <When use only shampoo>

There's dirt left, and the cuticle was standing upside down.



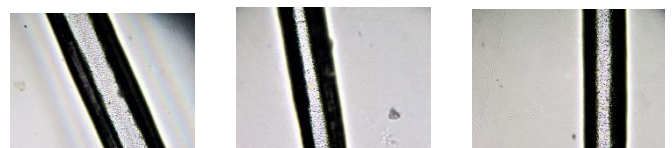
chlorine water

Seawater

bleach

### <Washing by water>

The cuticle was standing upside down and the dirt has hardly removed.



chlorine water

Seawater

bleach

## 5, Conclusion

Hair was healed well by washing with shampoo and conditioner. Therefore, we consider that both shampoo and conditioner will heal the hair. However, the hair was too damaged to be completely healed through the process of soaking the hair in an aqueous solution or bleach.

※Resources

<https://www.mirai->

[kougaku.jp/laboratory/pages/160829.php](https://www.mirai-kougaku.jp/laboratory/pages/160829.php)

# Is the nature of hair related to thickness?

2-4 Group7 Aki Sekine Yui Totsuka Saki Fukunaga

**Abstract:** We conducted an experiment to improve hair quality, and as a result, we thought that people with thin hair tend to be straight and thick hair tends to spread.

## 1. introduction

### purpose

In order to know the properties of your hair and find that the right hair care for you.

## 2. Research methods

We asked two questions :People who think there is pretty in this grade. And if you want to get hair down at school, (i)comb it, (ii) straighten it with an iron, (iii)I cannot +Why? Also, we collected 10 hairs from each of 5 people (A~E) who chose (iii) and 5 people (F~J) who thought their hair are pretty were examined under a microscope. The way to look at hair under a microscope is to first apply a little thick liquid glue on the slide glass and place the hair on it before it dries. Then, dry it for a few days and observe it under a microscope.

## 3. Result

\*Eyepiece (×10)

Objective lens (×40)

\*E could not be measured

Difference is  
0.4cm!!!

	Thickness(cm)		Thickness(cm)
A	3	F	1.9
B	2.2	G	2.1
C	2.9	H	2
D	2.1	I	2.4
E	-----	J	2.2
Average	2.55	Average	2.12

## 4.Consideration

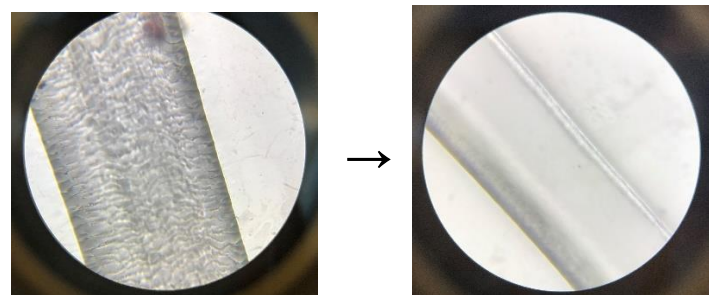
As you can see from the results, people with beautiful hair are thinner than people without it.

## 5.Additional experiment

After that, as an additional experiment, we decided to try the care for a week that people with beautiful hair are doing to see if the hair really gets thinner.

### ●The care details

- ①Leave the rinse on their hair for 5 minutes .
- ②Dry a towel before drying it.
- ③Apply the dryer diagonally from the top.



\*Eyepiece (×10) Objective lens (×40)

As you can see from the picture above. A's case has become about **1cm** thinner!! In the case of B, it became **0.3cm** thinner.

## 6. Reference

「毛髪の表面を解析しよう」

<https://www.mirai-kougaku.jp/laboratory/pages/160829.php>

# How to focus more on studying in the morning

2-4 group 8 Tanaka Yuzuho Tatsuishi Kanon

## ~ Abstract ~

Find a way to focus more in the morning by changing your lifestyle.

## ~ Introduction ~

The experience of sleeping without a cell phone created a smart state the next day. If you do not use your cell phone from 30minutes before bedtime to the end of verification, your concentration will be highest.

## ~ Methods ~

This time, concentrating is defined as a short calculation time.

1. Create 20-single digit four arithmetic operations using the Internet.
2. Set conditions

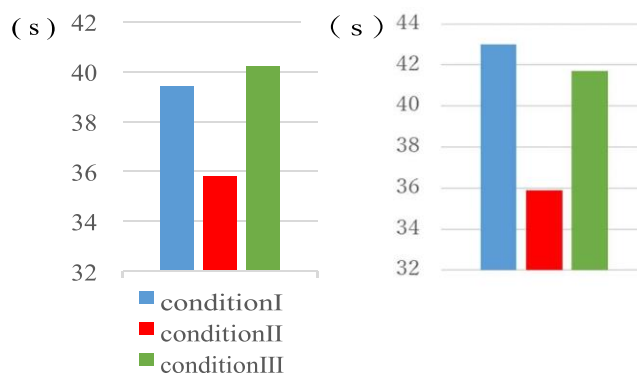
Use your cell phone before bedtime and after waking up and do not listen to music.

	Cell phone	Music
Condition I	○	×
Condition II	×	×
Condition III	○	○

※using or listening...○

no using or no listening...×

3. Living for two weeks each under the conditions of I, II, and III, and solving the 20 arithmetic operations created while measuring the time with a timer every day.
4. Summarize the results, average the times, graph them, and compare them.



## ~ Discussion ~

Since the average time under condition II is the smallest, if you want to concentrate in the morning, you should avoid using your cell phone before going to bed and after waking up and not listening to music. It is probable that the values in condition and condition were reversed between the two because the same song was heard in different places.

# CHARACTER COLORS AND FONTS THAT ARE MOST ACCURATELY REMEMBERED FOR 3 DAYS AFTER LOOKED JUST 2 MINUTES

2-4 Chigira Sakura Kubo Machi

## Abstract

We surveyed 35 student to find easy-to-memorize character colors and fonts. Bluish colors and easy-to-read fonts turned out to be suitable for memorization.

## 1 Introduction

### (1) Research background

We found it difficult to remember the EG words and thought that it might have a draft in the color and font of the letters.

### (2) Hypothesis

Blue letters and hard-to-read fonts are the easiest to remember.

## 2 Methods/Research

**A**① Randomly arrange 6 lower-case alphabets from “a” to

“f” in the font called Times New Roman without duplication. Prepare such strings in 4 ways: red, blue, yellow and green. Have 8 or 9 students remember them for each color in 2 minutes.

② Test the students after 3 days.

③ Do ①② again.

④ Calculate the deviation value for each color from the Results from ① to ③ and compare them.

**B**⑤ Now experiment in the same way, changing the font

instead of the color. The font types are Times New Roman, Helvetica and *Eriji*, and each font is surveyed by 11 to 12 students.



↑ Paper distributed to students (Red/Times New Roman)

## 3 Result

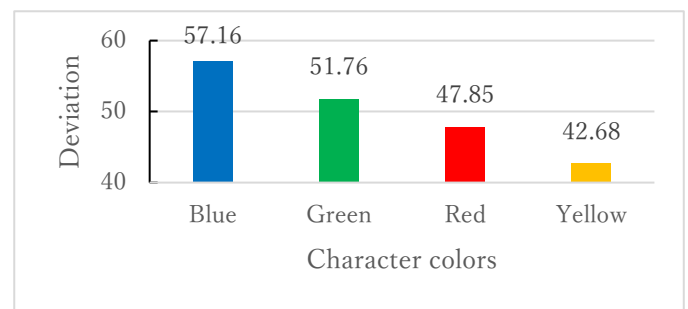


Figure 1: Data obtained from **A**

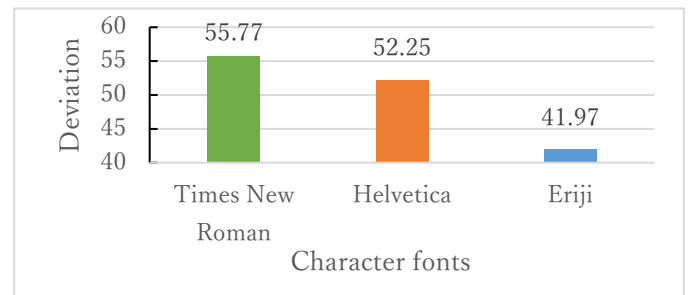


Figure 2: Data obtained from **B**

## 4 Discussion

**A** It turns out that bluish-colored letters are easy to memorize. Therefore, it is considered that when writing the words to remember them, we should write them with a blue pen. Also, it may be effective for memorization to write words on blue paper or to use a blue pen to mark the words.

**B** The score of Times New Roman, the most readable font, is the highest. From this, it is considered that the easier it is to read characters, the easier it is to memorize them. Therefore, we consider that we can memorize words easily to write them neatly.

# What is the most effective way for short-term memory?

Crade-2 class-4 team-10 Ayaka Miyazaki, Non Nakabayashi

## Abstract

We researched about the color which is the most effective way for short-term memory. As the result of our experiment, the best color for short-term memory was red, and yellow was not suitable to memorize. We estimated we could get such result because red had an effect that attract our attention.

## 1. Introduction

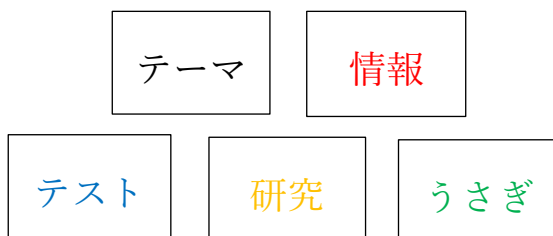
We wanted to know best way to improve the ability of short-term memory because we read an article that smart people have good short-term memory.

## 2. Hypothesis

We thought blue is the most effective color for short-term memory because blue is generally considered a good color to remember.

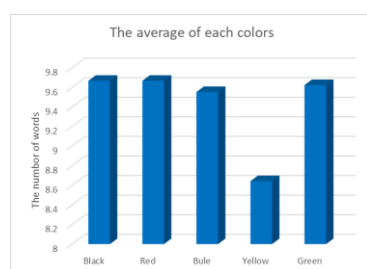
## 3. Methods

- ①We prepare big papers printed 15 words per color. The color we used is red, blue, yellow, green, and black. (hiragana×5, katakana×5,kanji×5)
- ②We show papers rapidly turning over one by one in front of 35 subjects. We do this 5 colors×2times.
- ③The subjects write down words that they memorized.
- ④We record results and examine which color has the highest percentage of connect answer.



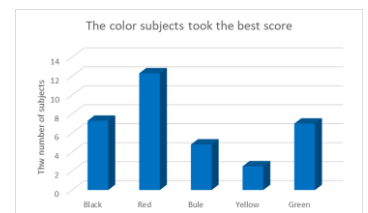
## 4. Result

We took the average of scores in each colors. The color which took the lowest score was yellow. Other colors



were almost the same score. Black, red, blue and green took 9.5 score respectively. Yellow took the lowest score, and the score was 8.6.

We also examined the maximum score that 35 subjects took each of them, and we searched what was the color on that occasion. Red took the best score.



## 5. Discussion

Taking the average value of each color, yellow was the lowest, and the other colors were flat. From this, it can be considered that colors that are light in color and difficult to see are not suitable for short-term memory. In addition, when the maximum value of each subject was examined, the number of people who gave the maximum value in red was the highest, suggesting that red is suitable for relatively short-term memory among the five colors.

## 6. Conclusion

The results of this experiment show that color affects human memory. For example, the colors of letters on posters and signboards that we often see are mostly red and less yellow. In this way, attracting people by using the nature of colors widely used in our daily lives. If I have the opportunity, I hope I can do research that will be useful in our lives.

# How to remove shirts lines without using an iron.



2-4 Miku Kubota Manatsu Murayama

## 1 Introduction

### (1) Abstract

We would like to research the differences between the lines by an iron and the other way.

### (2) Hypothesis

The best way to remove lines is to give heat to the cloths. It's because fibers given heat get lose and return to the former shape.

When ironing wrinkled clothes, the heat generated by the iron is transmitted to the molecules, and the molecules move more actively. Then, by applying iron pressure, the molecules line up cleanly, and the temperature drops, they are bound again by intermolecular force.

## 2 Methods

①To count the lines of the shirt after washing.

②We try to do the methods named A~G.

A. To reduce dehydration time.

B. To use a spray.

C. To dry by using a dryer.

D. To put a hot towel.

E. To hang the shirt in bathroom.

F. To expose the steam of a humidifier.

G. To soak in water and dry.

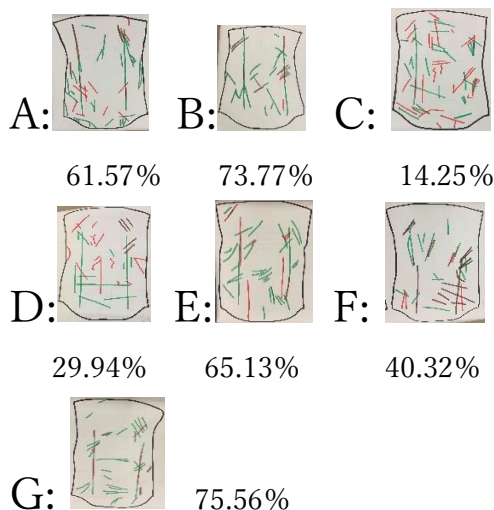
③We count the number of the lines left on the shirt.

④Calculation <Wrinkles reduction rate>

The number of  $(① - ②) \times 100$

The number of ①

## 3 Result



## 4 Discussion

The method of removing wrinkles by soaking in water had the highest reduction rate. Therefore, it is considered that wrinkles straighten the fibers of clothing when moisturized. Also, hanging clothes is the best way to remove side wrinkles. Putting a hot towel makes wrinkles more, so it is not suitable.

## 5 Reference

<https://lamire.jp/61797>

<http://kaden.pcinformation.info/iron-steam.htm>



# THE RELATIONSHIP BETWEEN A SHORT-TERM MEMORY AND BGM

2-4 Group14 Saki Hosoya Mikako Baba

Abstract

We often study listening to music. There are many opinion whether it is good for studying. So, to reach a conclusion about it, we researched **which is better for our memory, studying listening to music or without music.**

## 1. Introduction

(1) Purpose

To research how the music affect memory.

(2) Hypothesis

It is better to study without music than to study listening to music.

## 2. Methods/Research

- ① Writing 1 to 13 digit random numbers.
- ② Making students of 2-4 remember these numbers on different situations, without music, listening to music that each of them like, classical music and intense music for 30 minutes.
- ③ Writing the numbers which they can remember.
- ④ Searching their correct answer.

3 43 744 6814 57934 639567  
 7345575 64967748  
 657465575 8564947698  
 85758436585 875846759265  
 7465092843828

## 3. Result

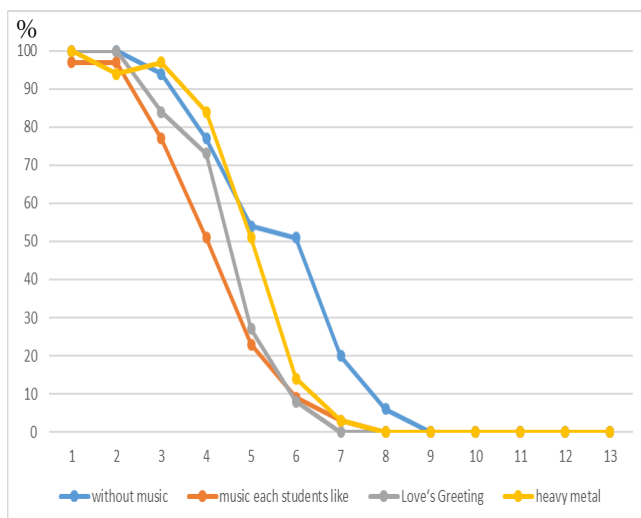


Figure 1. Correct answer rate by BGM

The student who sets the best record answer the numbers from 1 to 8 digit, but the best record when listening to music each likes is only numbers 1 to 5. **The research showed it is bad for studying listening your favorite music.**

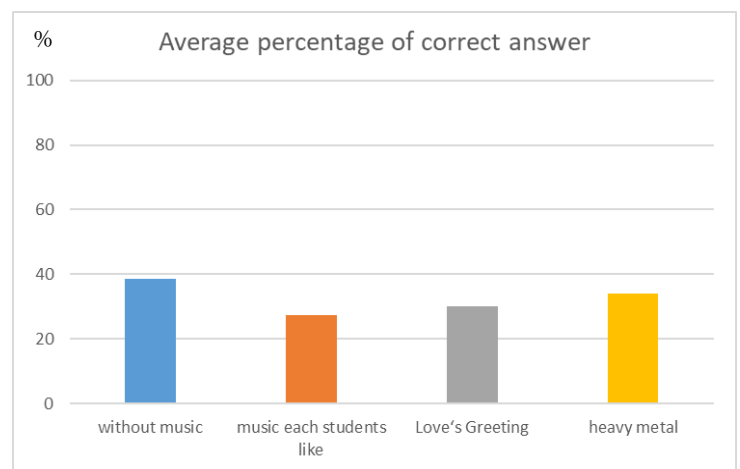


Figure 2. Average percentage of correct answer rate **The highest is the correct answer rate when they don't listen to music.** The worst is the correct answer rate listening to music each students like. The rate when listening to heavy metal is better than that when listening to Love's greeting. We got the information that classic music is good for studying, but the result is different from that.

## 4. Discussion

The result show that it is the best for memory to study without any music. If you study listening to music, you should not listening to music you like, because we get distracted to take in many information from the eyes and the ears.

In addition, the reason why the correct answer rate when listening to heavy metal is higher than that when listening to Love's Greeting may be getting used to remembering numbers.

# How to put up an umbrella not to get wet our body or rucksack

2-5 group 8 Arai Yu Watanabe Riko



## [Abstract]

Even with an umbrella, it is common to get rainwater on your body and rucksack. So, using a model and a doll, we investigated the best way to hold an umbrella without getting rainwater on the body and rucksack when the person is stationary and there is no wind. In this experiment, it was found that if the umbrella is tilted 30 degrees to the back side of the body when the vertical direction is 0 degrees, rainwater will not splash on the body.

## [Introduction]

### (1)Objective

Since our bodies and rucksacks often get wet on rainy days, we conducted an experiment with the goal of finding the best inclination that would keep us dry.

### (2)Hypothesis

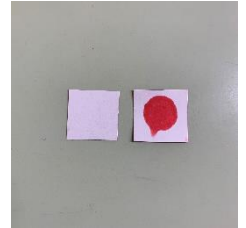
Based on the fact that I always tilt my umbrella and get wet, I hypothesized that the umbrella would not get wet the most when the axis of the umbrella was at 0 degrees, with the vertical upward direction being 0 degrees.

## [Methods]

1. Fix an umbrella and a rectangular object that looks like a rucksack to the doll.
2. Make 16 holes at equal intervals in the bottom of the container and mark the water level at 2cm and 1.5cm.
3. Put water detection sheets on both ankles, knees, hips, shoulders, elbows, and hands of the doll. A rectangular sized sheet should also be attached to the rear, right, and left sides.
4. Fill the container with water to the level drops to 2cm, place it 10cm above the doll, and when the water level drops to 1.5cm, remove the container.
5. Remove the water detection sheet.
6. Repeat the process from 3 to 5 by changing the angle of the umbrella shaft to 0, 30, 45, and 60 degrees, and compare the results.
7. No discoloration at all is indicated by a shaded line, 10% by a cross, 20% to 40% by a triangle, 50% to 80% by a circle, and 90% to 100% by a double circle.



8. A diagonal line is worth 0 points, a cross is worth 1 point, a triangle is worth 2 points, a circle is worth 3 points, and a double circle is worth 4 points. Add them up for each angle to get the total of the rectangle, the total of the body, and the total of the whole.



## [Result]

	rear	left	right	top	ankle L	ankle R	knee L	knee R	hip	shoulder	hand L	hand R
0°	○	△	△	○	○	◎	/	/	/	/	/	/
30°	×	×	×	/	○	△	/	△	/	/	/	/
45°	×	×	/	/	○	◎	/	△	/	/	/	△
60°	△	△	△	×	○	△	×	/	/	/	△	/

The rectangles did not get wet the most when they were at 45 degrees, and the bodies at 0 and 30 degrees. Overall, the body did not get wet the most when it was at 30 degrees.

	rucksack	body	total
0°	10	7	17
30°	3	7	10
45°	2	11	13
60°	6	8	14

## [Discussion]

The reason why 30 degrees was the least wet is thought to be because the umbrella did not directly hit rectangle and the body was well inside the umbrella.

From this experiment, we learned that in order to keep the body and rucksack dry from the rain, it is best to tilt the umbrella at 30 degrees. However, due to time constraints, we were not able to conduct the experiment this time, taking wind and movement into consideration. We thought that if we changed these conditions, we could get different results.

# The rate of people who follow suit different opinion by majority.

2-5 10班 Chinatsu Kitagawa Yui Tanaka Asuka Nasa

## 【Abstract】

We were interested in the rate of people who follow suit different opinion by majority. The rate of people who sympathize is 75% in the experiment of sympathies by Solomon Asch but our verification showed 25%. So the rate of people who sympathize is changed by the subject's potential.

## 【Introduction】

### (1) The background

When we make the majority in various times, we sometimes sympathize with other opinions. So we were interested in it and looked for similar phenomenon.

### (2) The hypothesis

And we discovered "The experiment of sympathies by Solomon Asch". It shows that 75% people sympathize with the mass opinion.

- ① Subject's personality is affecting. For example, aggressive, influence, and confidence.
- ② 75% people sympathize with the mass opinion.

## 【Method & Result & Consideration】

### ① Method

First, 34 classmates were taken the questionnaire asked if you are positive. Second, subjects and fake subjects were picked up and based on their personality. Third, they answered three problems. But fake subjects said the wrong answer of this problem before. We examined the subject's reaction when fake subjects answered a mistake.

### Result

The subject that is positive answered the same mistake as fake subjects. While, the subjects that they are not positive answered correct. There was no change in the results depending on the subject's activeness and influence.

### Consideration

Since there was no relevance to the activeness and influence of subjects themselves, it is considered that they are not included in the conditions to tune into others.

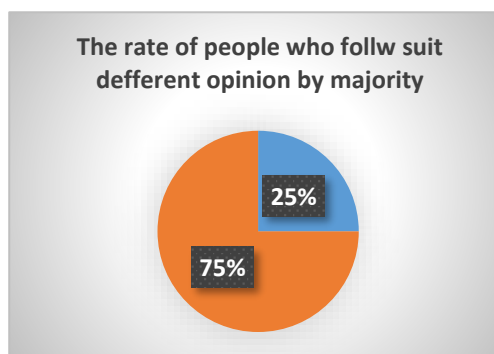
### ② Method

First, we picked up one subject and nine fake subjects randomly. Second, we told fake subjects correct answers of this problem before. We examined the subject's reaction when fake subjects answered a mistake.

### Result

75% Maebashi High Girls students did not sympathize with the opinion. In second grade, 1 out of students sympathized with the majority. While, in first grade, 4 out of students sympathize with the majority. The rate of subjects who picked up randomly follow suit different opinion was 25%

grade	1 <sup>st</sup>	2 <sup>ed</sup>
sympathize	grade	grade
yes	4	1
no	6	9



Blue: yes Orange: no

### Consideration

The result that the entrainment rate was lower than the experiment by Asch even when subjects were picked up randomly is considered that it is because the mean deviation of the subjects was higher than the national deviation. Therefore the deviation range of the subject and the confidence that comes from it are also considered to be related to the conditions to tune into others.

## 【Reference】

<https://studyhacker.net/vocabulary/asch-conformity-experiments>

# The Amount of Persuasion needed for a Maejo Student

2-5⑪ Hikari Yokobori Haruho Kindo Miyako Uchiyama

## Abstract

Peer pressure sometimes makes us feel hard. When we have a majority rule we are sometimes overwhelmed and change our opinion against our will. It's not good things for us. So, we conducted an experiments about the amount of persuasion needed for a Maejo student. But we can't find the connection between the number of people and the rate of following the opinion.

## 1 Introduction

### (1) BACKGROUND

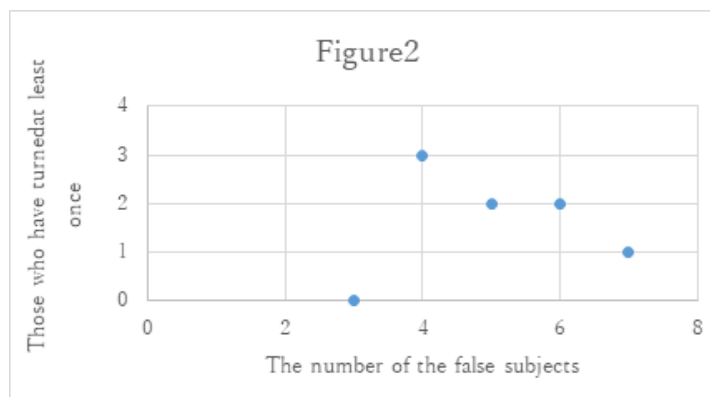
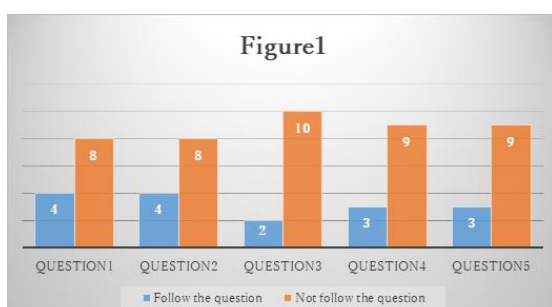
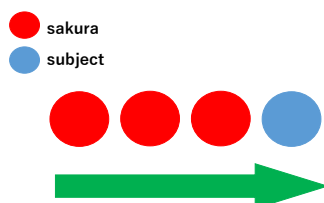
We often agree with opinions of the majority. So, we get interested in the relation between the number of those who oppose and peer pressure. By proving this, we aim to figure out the situation objectively.

### (2) HYPOTHESIS

We need 7 people to follow the majority. (from Solomon Eliot Asch's experiment)

## 2. Methods/Research

- ①Collect one subject and fake subjects(hereafter referred to as Sakura)in one classroom.
  - ②Ask the subject 5 questions.
  - ③Ask them to answer one by one after taking enough time to consider.
  - ④At that time, let Sakura deliberately select the wrong answer and set the subject to answer last when answering.
  - ⑤At first, set 2 Sakura for 1 subject, gradually increase the number of Sakura one by one, and repeat the experiment until finally 6 Sakura for 1 subject.
- ※The question we used is with a correct answer rate of 85% or more.



## 3.Result

Figure1 The number of subjects who did not follow the question

There were many people who were sync is the second and third question.

Figure 2 Distribution of synchronized people with respect to the number of false subjects,

There is a lot of variation.

## 4.Discussion

No trend in sympathize is found among the number of people.

“The reason why they follow the majority”

- Worried whether they were under a visual illusion.
- Thought that they themselves were wrong because Maejo students are clever.
- Just worried

“The reason why they didn't follow the majority”

- Found this experiment SSH
- Absolutely sure that they are right

## 5.Referance

ジョアンヌ・R・スミス, S・アレクサンダー・ハスラム, 樋口匡貴, 藤島喜嗣作品ほか『社会心理学・再入門-ブレイクスルーを生んだ12の研究』新曜社

# The relationship between Emotion and Sounds

~Focus on the sound of the Earthquake Early Warning (EEW)~

2-6 group1 Rin Abe Kirari Uranaka

## Abstract

It is an EEW that we almost always hear in the event of an earthquake. But we think many people feel discomfort when they hear the sounds. So we decided to look into which factor makes it so.

## Introduction

«Preliminary experiment»

Five sounds were heard by 37 classmates. (Changed tempo, repetition, and tension note.)

From this, raising 2 semitone is the most unpleasant. Slow tempo causes variations in results. Changing the tension note, but there was no significant change in the result.

«Hypotheses»

- The slower the tempo of the sound, the greater the discomfort.
- Tension notes are not relevant.
- Change the degree of uneasiness or discomfort that one feels depending on the tone.

## Methods

Sound① is the same pitch, speed, and tone as the actual EEW.

All 17 subjects.

«Experiment 1 ~focus on tempo~»

- Sound① ♩ = 240  
Sound⑤ ♩ = 120  
Sound⑥ ♩ = 90  
Sound⑦ ♩ = 60

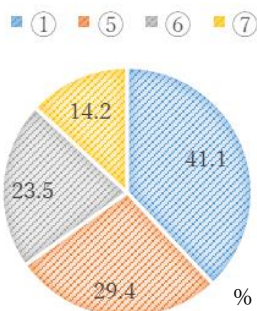
«Experiment 2 ~focus on D#»

- Sound①´ (extended ① by 4 beats)  
Sound②´ (erased D# from ①´)

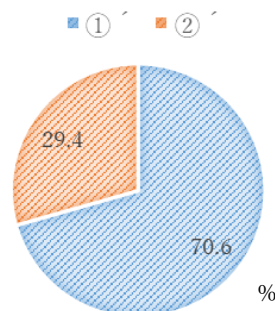
«Experiment 3 ~focus tone~»

- a (Fl. Ob. Cl.)    b (Tp. Hr. Tb.)  
c (Glo. Vib. T.Bell.)    d (Xyl. Mar.)  
e (Vn. Vla. Vc.)    f (E.Gt. E.Ba.)

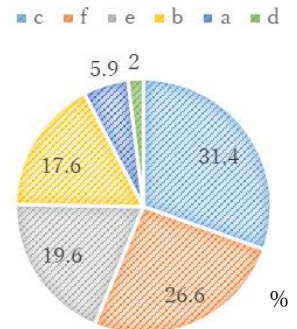
### RESULT 1



### RESULT 2



### RESULT 3



## Conclusion

- From Experiment 1, The faster the tempo of the sound, the higher the rate of discomfort.
- From Experiment 2, Dissonance makes people uncomfortable.
- From Experiment 3, A sound like that of metal scrapping against metal has something to do with human discomfort.

## Reference

• 伊福部 達 「緊急地震速報チャイムの誕生秘話」 [www.jas-audio.or.jp](http://www.jas-audio.or.jp)

• Muse score



# To alert to a person ~Focus on the sound~

2-6 Group 2 Manami Tomioka, Hikari Matsumoto, Saori Hoshino

## Abstract

Many disasters are occurring now. Therefore, we thought it would be useful to guard ourselves in an emergency and conducted a survey to find out what sounds could make people feel dangerous. As a result, D# was found to scare people.

## Introduction

### (1) Purpose

To protect oneself in an emergency

### (2) Hypothesis

- We feel more afraid of adding D#
- We feel more afraid of raising a note by a half

## Methods/Research

In the tentative research, we first took the following question.

- Do you think the Earthquake Early warning is scary?
- What kind of sound do you think you are scared of?

As a result, 97.1% said they were afraid of the sound of Earthquake Early Warning. It was found that D# was used in the E.E.W and that the sound was intentionally raised by a semitone.

Therefore, in the present study, we investigated whether that apply to all sounds.

In the first experiment, the familiar sound was changed as follows :①Normal ②Semitone up

The subjects chose which sound was the scariest.

In the second experiment, four chords were prepared and D and D# were added to each. The subjects chose which of the two sounds they felt scared.

The chords that the subjects listened to are as follows.

①	②	③	④
E E	G G	B B	D D#
D D#	E E	G# G#	C C
C C	D D#	E E	A A
A A	C C	D D#	F F

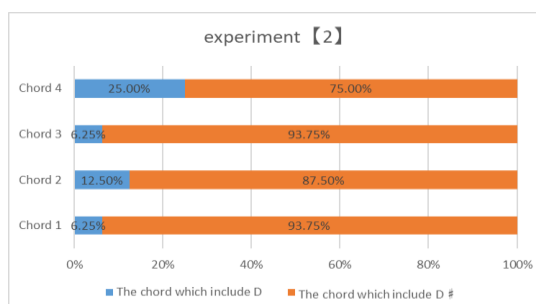
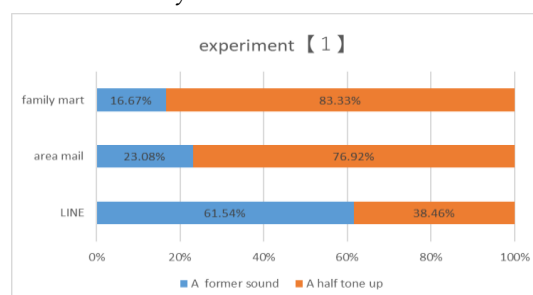
## Result

Figure1 : The result of the question as to which of the original sound and the semitone raised sound is scarier .

Figure2 : The result of the questions which chord with D or chord D# feels scarier.

Regarding the dial tone of LINE, many people felt that the original sound was scarier than the sound raised by a

semitone. However, many people felt that Area Mail and Family Mart music were scary when then raised a semitone. Many people felt that it was scarier to incorporate D# in any chord.



## Discussion

From the results of the question in [1], it was found that some sounds that have been heard in daily life do not feel scary even if they are raised by a semitone. From the results of the question in [2], it was found that D# can be said to be common to all relatively all chords that make you feel nerves. It is thought that sounds with the image of being scared tend to feel scarier when raised by a semitone, and music with the image that is not scary tends not to feel scared even when raised by a semitone. Sounds have a strong connection with human memory, therefore, it is better to use sounds that have the image of being scared of humans. Also, it is better to incorporate D#.

## Reference

<https://www.jas-audio.or.jp/jas-cms/wp-content/uploads/2013/03/004-010.pdf>  
<http://open.shonan.bunkyo.ac.jp/~hatakama/zemi/zakiyama.pdf>

# Effects of frequency of sounds and volume on human heart rate

2-6 Group 3 Mizuki Ariga, Mei Kogure, Ayaha Toyoda

## ABSTRACT

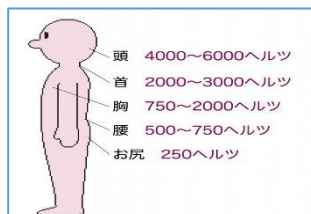
Can sounds manage our physical condition? To research this, two experiments which focused on the relationship between sounds and heart rate were done. The survey results show the following: Frequency influences human heart rate. The higher frequency's sound you listen to, the more your heart rate increases.

## INTRODUCTION

(1) **Purpose** : This research was held to help us control your tension by hearing some kinds of sounds.

(2) **Hypotheses**

① It is said that a frequency of 440Hz displeases people while it is said that Solfeggio frequency make people relax. Especially, the frequency of 528Hz is the sound which echoes people's lumber vertebrae.



② Usually, big sounds make people unpleasant. When people feel unpleasant, their heart rate increase.

◀Frequency which echos

From these facts we made two hypotheses

1. Sounds of 528Hz decrease heart rate the most of these sounds : 440Hz, 528Hz, 852Hz.
2. Big sounds which make people unpleasant increase heart rate.

## METHOD

### 1. Change frequencies

Oscillator for sound wave experiment was used to give out sounds. 10 students listened to three kinds of sounds (440Hz, 528Hz, and 852Hz). Volume was unified to 85 dB. After listening the sound for 1 minutes, their heart rate were measured while they kept listening to the sound. The change in heart rate before and after listening to the sound



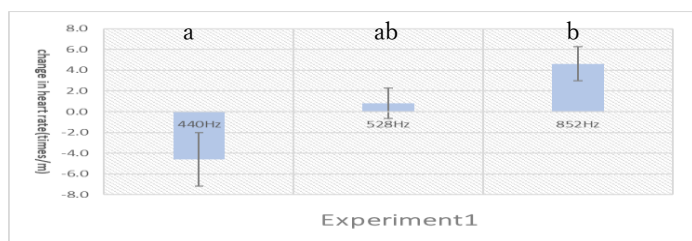
examined.

### 2. Change volume

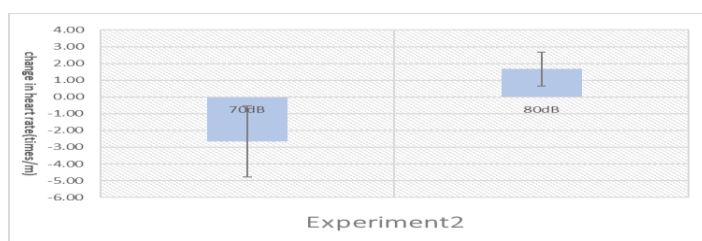
12 students heard the sound, turning up the volume on the Oscillator for sound wave experiment. Average volume the found unpleasant was 78dB. After that, 6 students heard the 70dB sound and 80dB sound. Their heart rate was measured as Method 1. [\* 70dB…Target of comparison / 80dB…Close to the average]

◀Oscillator for sound wave experiment

## RESULT



It shows that there is no significant difference between the same letters by Tukey(5%) (n=12)



The statistical difference was not detected in experiment 2. (n=6)

## DISCUSSION

- Frequency influences human heart rate.
- The higher frequency's sound you listen to, the more your heart rate increases.

## REFERENCE

- 順天堂大学 (2018) Effect of 528 Hz Music on the Endocrine System and Autonomic Nervous System 2020.8.21  
 ロータス・エリー (2018) 【心身を整える】話題のソルフェジオ周波数とは？期待できる効果は？ <https://healingplaza.jp/archive/12068/> 2020.8.21  
 カラダネ編集部 (2017) 【音声あり】自律神経を「音」で整える。前医大教授が実証した 528 ヘルツの心癒やす音 <https://www.karadane.jp/articles/entry/news/006388/> 2020.8.21

# How to pedal a bicycle with a headwind faster

2-6 ④ Kano Aoi Nagaoka Narumi

## Abstract

In Gunma, people sometimes must pedal a bicycle against the wind. We want to pedal a bicycle with a headwind faster. Then, two experiments were carried out step by step. Ultimately, two ways to pedal a bicycle with a headwind faster were found. One of the way is that strengthening the trunk of the body and pedaling a bicycle standing up and the other of the way is that pedaling a bicycle in a forward leaning posture.

## Introduction

In Gunma, people sometimes must pedal a bicycle against the wind. We want to pedal a bicycle with a headwind faster.

A hypothesis was construct. It was that pedaling a bicycle standing up is the fastest of other ways.

## Methods 1

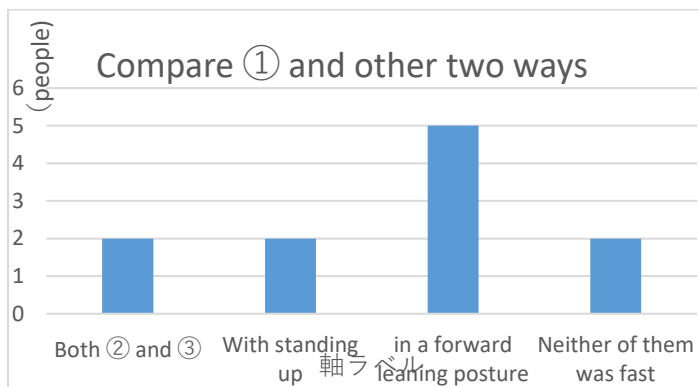
11 subjects pedaled a bicycle in the three ways. The distance was 400m.

Ways : ① Normally

② With standing up

③ In a forward leaning posture

## Result 1



## Discussion 1

③ way was the fastest of all but there were variations from person to person.

② is not always faster.

## Conclusion

Two ways to pedal a bicycle with a headwind faster were found. When people pedal a bicycle standing up, they should not be able to keep the trunk of the body still. So, one of the way is that strengthen the trunk of the body and pedaling a standing up. And the other of the way is that pedaling a bicycle in a forward leaning posture. It makes people move forward easily. Which do you like?

## Can the bicycles move forward faster if people put them weight on the pedals easily?

A new hypothesis was construct; what moving distance of center of gravity is short makes people hard to be tired easily.

## Methods 2

30 subjects went up the stairs in the two ways and replied to the questionnaires.

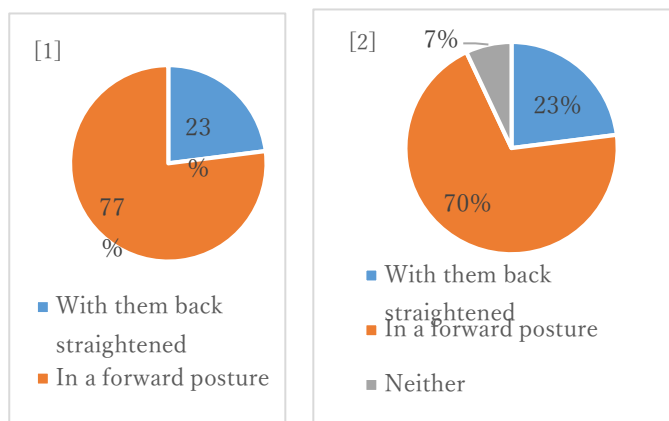
Ways : ① With them back straightened

② In a forward leaning posture

Questions: [1] Which ways did you go up faster?

[2] Which ways did you go up more easily?

## Result 2



② did not let people feel tired.

② let people move forward faster.

## Discussion 2

People do not have to put them much weight with the way of ② This is why ③ was fastest of all in Methods 1.



# Which color is the best to memorize by seeing red, blue, or green?

2-6 Okuno Haruka Miyakawa Hina

## Abstract

We searched for which of the colors red, blue, and green would be the most memorable to see and remember. We asked about ten people to learn the 7-letter alphabet written in each color of red, blue, and green just by looking at them. As a result of conducting tests and comparing their correct answer rates, green had the highest correct answer rate

## 1 Introduction

By discovering the color which is the most memorable for us, we want to use it to studying for a test.

Hypothesis: Blue remains in our memory best.

Reason1. Stimulus the parasympathetic nerve.

Reason2. Leave a strong impression.

## 2 Methods/Research

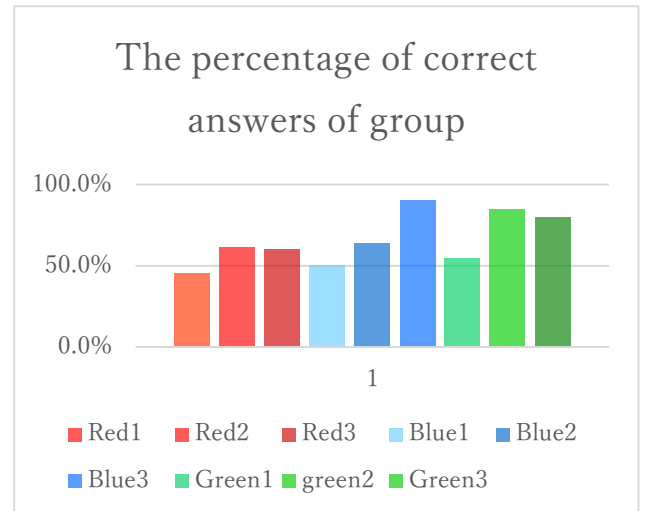
In questionnaire in advance, we decided to do experiments with red, blue and green.

1. Prepare some piece of paper written in random the number of alphabet to seven. (Figure below)



2. Target is classmate of 2-6.
3. Get into groups of about ten and inspect difference paper each group.
4. Get eligible person to memorize the letters by a minute or two minutes before going to bed. Excluding memorizing by writing or reading in voices.
5. The next day, get eligible person to write the letters.

## 3 Result



<b>Red1</b>	45.5%	<b>Blue1</b>	50.0%	<b>Green1</b>	54.5%
<b>Red2</b>	61.5%	<b>Blue2</b>	63.6%	<b>Green2</b>	84.6%
<b>Red3</b>	60.0%	<b>Blue3</b>	90.0%	<b>Green3</b>	80.0%
<b>Average</b>	55.9%	<b>Average</b>	66.7%	<b>Average</b>	73.5%

## 4 Discussion

From the graph, green had the highest percentage of correct answers, blue was the second, and red was the lowest. From this, it can be said that the hypothesis was incorrect. However, looking at the table, green is the highest on average, but when looking at each group, the percentage of correct answers for Blue3 is the highest. Therefore, as a reflection, we should have verified blue and green again and compared the difference.

## 5 Reference

色と自律神経の関係とは…?

(<http://kioku-tamatebako.com/?p=1759>)

# Personal Space

~Testing the suitable distance while having a conversation~

2-6 12 Mai Kaseda, Ayane Namekawa, Sakurako Nishi

## Abstract

The word "Personal Space" is defined as "the distance from another person at which one feels comfortable when talking to or being next to that other person." So how far is exactly the suitable distance for us female high scholars to have a comfortable conversation? We tested the personal space of the front and sides of the body by verifying the relationship levels of each group of subject.

## Introduction

The year of the 2020 is mostly about the COVID-19 and experts have been keeping saying that people should stay 2m away from each other which is now called the "social distance." But when it comes to communication, most people think that 2m is too far and feels uncomfortable. By doing two types of experiments, the suitable distance of communication will be clarified.

## Methods/Research

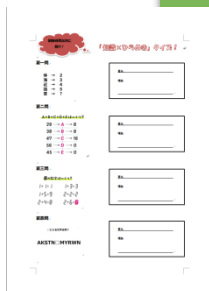
Subjects: High school girls aged 15~17

[Subjects DO NOT know the goal of the research]

### 1. The side of the body



① Let the two of the subjects take a seat side by side and ask them to sit back in the chair



② Have them work on a quiz together for 7 minutes and let them move closer or farther

③ Observe the distance of the closest point to each other

### 2. The front of the body

① Ask one of the subject to come get the question sheet from the researcher

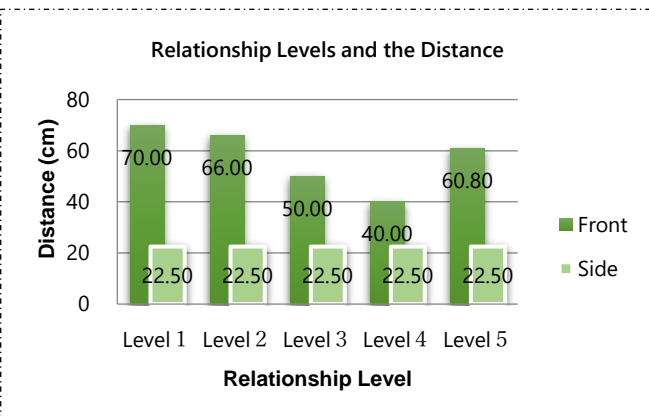
[At this point, researcher should not move]



② Measure the distance of where they have stopped [The distance of toe to toe]

## Results

Relationship level 5: Closest ~ 1: Not familiar at all



References: [jjisp\\_16\\_001.pdf](http://jjisp_16_001.pdf) (osaka-u.ac.jp)

<https://sangyouilabo.com/stress/personal-space/>

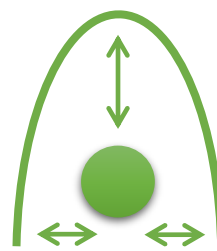
## Conclusion

### 1. The side of the body

The comfortable conversation is mostly held in the distance called "intimate distance" which is 0~45cm and it doesn't matter how much you know about or trust each other.

### 2. The front of the body

The less people know about each other, the farther the distance will be needed to have a comfortable conversation.



# Definitions of Beautiful Legs and How to be like that

## Abstract

2-6 Nene Tanaka Wakana Miwa Nanaoka Wada

Many people wear clothes to hide their body line because they have no confidence in their physical appearance. The aim of our study is to be able to feel much more confident about their body and to have the beautiful legs. So, we asked some questionnaires to define which aspect of the beautiful legs. And we tried to identify how to exercise for getting the beautiful legs. Through these experiments, we concluded that circumference of thigh, calf, and ankle at 9 : 7 : 4 ratio, length of heel to knee, knee to crotch at 14 : 13 ratio are the golden ratio of legs. Our study showed that squat exercise was the most efficient way to acquire the beautiful legs.

## Hypotheses

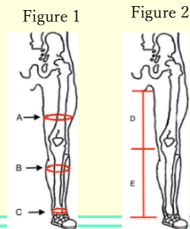
In general, legs have a golden ratio.

Circumference thigh(A) : calf (B) : ankle(C) = 5 : 3 : 2

Length heel to knee(E) : knee to crotch(D) = 5 : 3

Human find the golden ratio the most beautiful.

Thus, legs with golden ratio are the most beautiful.



## Preliminary survey

As a preliminary survey, questionnaire about our theme was carried out to 34 students in class 6. (We quoted preceding study "Relationship between aesthetic and shape of legs" by Nara Woman's University and so on.)

Q1. Do you want to have beautiful legs?

→ 33 out of 34 students answered yes

Q2. Why did you answer so in Q1?

→ Yes	<ul style="list-style-type: none"> <li>various kinds of clothes look good on me</li> <li>I look beautiful when I show my legs</li> </ul>
No	<ul style="list-style-type: none"> <li>want to have great functions rather than appearance</li> </ul>

Q3. Please tell us adjectives which is associated

with beautiful legs.

→ thin : 76.7% kirei : 60.0% long : 60.0% utsukushii : 56.7%

Q4. Please choose the most beautiful picture of legs. (Figure 3)

43.7% of students chose ⑦

33.3% chose ①

20.0% chose ③

3.33% chose ②

→ thin, long and proportioned legs are beautiful.

Definition of the beautiful legs are thin, long, kirei, and utsukushii

## Problem

- There being no mentions, we could not know exact number or color.
- Having very close meanings, we could not make a clear distinguish between the words "kirei" and "utsukushii."

## Main experiment's method

(1) Questionnaires

Q1. Do you think there are differences between the words "kirei" and "utsukushii" ?

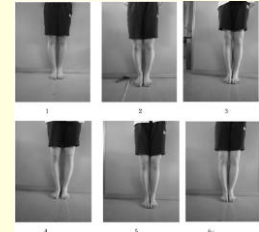
Q2. Tell us the reasons of Q1.

Q3. Please choose the most beautiful picture of legs. (Figure 4) This time we used the picture of our friends' legs to improve previous issues. Pictures were taken under these conditions.

- Subjects put their legs on the wall and looked to the front.
- The distance between subjects and cameraman was 1.0 m.
- To take pictures of whole part of legs.e

Figure 4

These were taken anonymously because substance of physical appearance is very sensitive.



(2) Stretching exercises and weight trainings

- ① leg exercise called Ashipaka ② lymphatic massage ③ the split  
④ squat exercise ⑤ exercise that stretch the thighs

Experiment was conducted in 3 different patterns; ① ② ③ , ① ② ④ , ① ② ⑤ and for a month from October 1 to 31.

## Result

(1) Q1. Yes : 19/ 34 students No : 13/ 33students

Q2. Image of utsukushii → gorgeous, matter of appearance → utsukushii and kirei  
kirei → cleanliness, spoken language → have different meanings

Q3. Picture 5 was chosen the most (22/34). 3 got the second highest vote (10/34). Others did not get any votes.

		(A)		(B)		(C)		(D)		(E)	
		STANDARD		STANDARD		STANDARD		STANDARD		STANDARD	
1	ideal	48cm	29cm	19cm	40cm	24cm					
	reality	48	34	21	40	33	+5	+2	+9	+16	
2	ideal	47	28	19	43	26					
	reality	47	35	20	43	41	+7	+1	+15	+23	
3	ideal	44	26	18	41	25					
	reality	44	32	20	41	37	+6	+2	+12	+20	
4	ideal	46	28	18	41	25					
	reality	46	32	21	41	37	+4	+3	+12	+19	
5	ideal	48	29	19	42	25					
	reality	48	35	22	42	40	+6	+3	+15	+24	
6	ideal	49	29	20	40	24					
	reality	49	37	22	40	35	+8	+2	+11	+21	

(2) Exercise ① ② ③ → Posture improved though height did not increased.

Exercise ① ② ④ → The circumference of thigh became 1 cm short.

Exercise ① ② ⑤ → Nothing had changed though maintained her figure.

## Conclusion

(1) Definition of beautiful legs

Thin, long, kirei, and utsukushii legs are beautiful.

The true golden ratio is  $\left\{ \begin{array}{l} \text{Circumference thigh : calf : ankle} = 9 : 7 : 4 \\ \text{Length heel to knee : knee to crotch} = 14 : 13 \end{array} \right.$

(These were led by taking average of figure 3 and 5.)

(2) Training whole part of legs' muscle, squat exercise could tighten up legs. Therefore it is the most effective way.

## Reference

Nara woman's university RELATIONSHIP BETWEEN AESTHETIC AND SHAPE OF LEGS, (2002)

# The impact of music on study

~From the number of correct answers and the number of answers in the math test~

2-7 1 Oshima Yuka Saheki Mika

## Abstract

Two groups of 18 people took the math test to find out which one had more correct answers and more answers, with or without music when solving the math test. As a result, it was found that the average number of correct answers and the number of answers were larger when the test was solved while listening to music.

## 1. Introduction

### (1) Background

Some people like to listen to music when studying. Listening to music brings us many benefits in studying, for example, it enables us to cut off outside noise and to keep awake. However, on the other hand, some people have the opinion that listening to music while studying is not good because they sing and cannot concentrate on their studies.

### (2) Premise

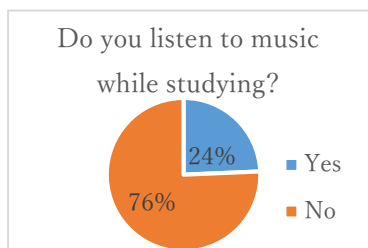
In investigating which is better for studying, listening to music or not, it is clear that listening to music is not suitable for learning memorization subjects because of the lyrics. That is why the math tests were used in the research to maximize the benefits of listening to music.

### (3) Purpose

To find out which of the two, listening to music and without music, has more correct answers and more answers when solving math tests.

### (4) Hypothesis

There are more correct answers and more answers when not listening to music than when listening to music. The rationale for this is that when we surveyed 37 people, more than half said they would not listen to music while studying, many of which were due to lack of concentration.



## 2. Method

- ① Prepare two math tests, and name one A and the other B.
- ② As shown in Table I, solve tests A and B in groups 1 and 2 consisting of 18 people, respectively.
- ③ Wait for a month.
- ④ As shown in Table II, do the same as ②.
- ⑤ Round and give the total score of the number of correct answers and answers, and compare only the conditions with and without music.

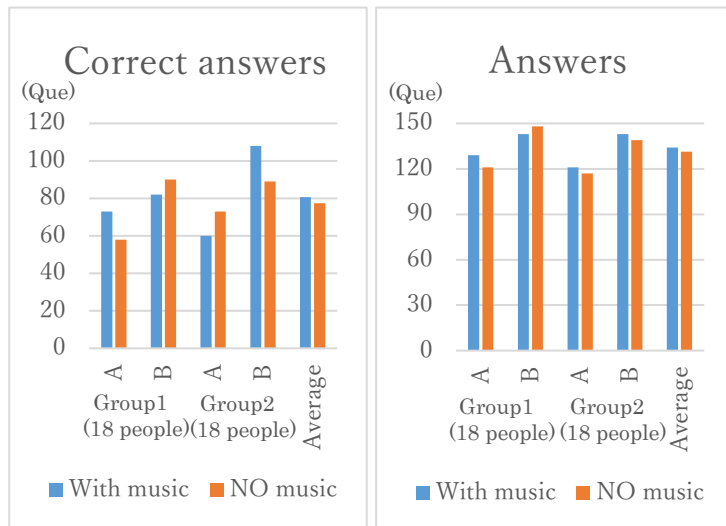
Table I →

	Group1	Group2
With music	B	A
No music	A	B

Table II →

	Group1	Group2
With music	A	B
No music	B	A

## 3. Result



### • Correct answers

When solving a math test, there were more correct answers when listening to music than when not listening. However, since the number of correct answers per person was only about 0.18, it could be said that the result was almost the same with or without music.

### • Answers

When solving a math test, there were more answers when listening to music than when not listening. However, since the number of answers per person was only about 0.15, it could be said that the result was almost the same with or without music.

### • Other

The number of correct answers and the number of answers was overwhelmingly larger when the same test was solved a second time after a month.

## 4. Discussion

• From the result that the number of correct answers is large when listening to music than when not listening to music, it can be seen that music does not lack concentration when solving math tests.

• From the result that the number of answers is larger when listening to music than when not listening to music, it can be seen that listening to music while studying math can study more efficiently.

• From the result that the total score is overwhelmingly higher when solved the second time, the above two considerations are not always correct.

# Effect on work efficiency by grasp of time

2-7-15 Aika Iguchi Miu Hagimori

## Abstract

The test which has time limit was hold twice. The one is that subjects grasped remaining time, and the other is that subjects did not. As a result, the former's work efficiency is higher than the latter's that.

## 1 Introduction

### (i) Purpose

The result of this experiment can be used in tests and daily learning.

### (ii) Hypothesis

Work efficiency is higher in the case that subjects grasp remaining time than in the case that subjects do not. It is because there are preceding studies that subjects are hard to be tired if they understand remaining time.

## 2 Methods

Four cases were set.

Experiment		Contents	Grasp of time
A	(1)	English words	○
	(2)	dictation	×
B	(1)	four fundamental	○
	(2)	rules of calculation	×

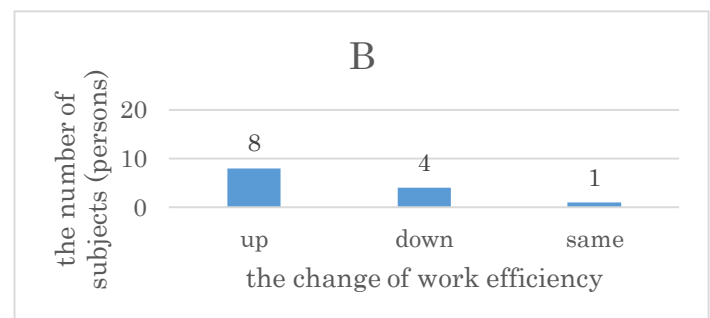
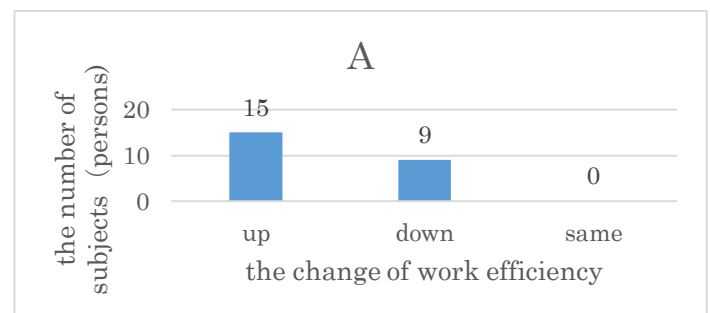
- English words were excerpted from DUO which is an English words book.
- Four fundamental rules of calculation was made up of single or double-digit irregular figure.
- ※There was not difference of difficulty between (1) and (2).
- Time limit was three minutes. Subjects were understood time left every thirty seconds to grasp time.
- It is said that the higher test score is, the better work efficiency is.

## 3 Result

Both A and B, there are more subjects who work

efficiency increased in (1) than in (2).

The median of gap between (1) and (2) is 1.1 in A, and 4.6 in B.



## 4 Discussion

Firstly, comparing (1) and (2) in A or B, the number of correct answers on (1) is higher than that on (2) in both cases. As a result of this, it is thought that work efficiency is higher when subjects grasp remaining time than when they do.

Secondly, the gap between (1) and (2) in A is larger than that in B. It is thought that the efficiency of work needing thought such as B raise easier than of simple work such as A.

## 5 Reference

[https://www.jstage.jst.go.jp/pub/pdfpreview/jergo/42spl/0\\_42spl\\_0\\_92.jpg](https://www.jstage.jst.go.jp/pub/pdfpreview/jergo/42spl/0_42spl_0_92.jpg) and DUO

# The Influence of Not Looking at a Clock in the Test Having Time Limit

2-7 16st team Ogino Hikaru Fudo Rina

Abstract :This study shows the connection between exam score and a clock.

## 1 Introduction

• Back ground Purpose

The subject is immediate problem because high school students take a lot of exams. The result actually can help us take exams.

• Hypothesis

According to previous studies the faster a clock ticks, the better efficiency subject work. This data is interpreted a clock as pacemaker. The situation where there is not a clock is the same as where there is. That is shaken the pace so the point decline.

## 2 Method/Research

• Subject: 2-7 36 persons (Half of subject looks at a clock and the others do not look at a clock. The group changes each time.)

• Time limit: 10 minutes

• Question paper: 18 calculation questions (The perfect score is 18 point.)

The score is compared one group with the other group of the average and median.

## 3 Result

	GroupA	GroupB
First	10.9	9.1
Second	12.1	12.4
Third	11.0	9.7
Forth	11.5	10.4
Fifth	9.2	9.9

Table1 the mean value

	GroupA	GroupB
First	11.0	9.5
Second	13.0	12.5
Third	11.0	10.0
Forth	11.5	11.0
Fifth	9.5	10.5

Table2 median

GroupA: looked a clock  
GroupB: did not look a clock

## 4 Discussion

- ① The number of times the mean value of GroupA was larger than that of GroupB was three times in five times. In short, the probability of it was 60%.
- ② The number of times median of GroupA was larger than that of GroupB was four times in five times. In short, the probability of it was 80%.
- ③ The number of times the mean value of GroupA was over 1point larger than that of GroupB was three times.
- ④ The number of times the mean value of GroupB was over 1point larger than that of GroupA was no times.
- ⑤ Discussion③,④ means there was narrow margin when the mean value of GroupB was larger than that of GroupA. (The margin of median is considered that it means nothing because it is certainly multiple of 0.5 point.)

From①,②,⑤

In conclusion, the score of not looking a clock in the test having time limit is smaller than that of looking a clock.

## 5 Reference

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