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What is needed to promote effective traffic safety education for school children?

-Study on the Establishment of Educational Promotion Scheme-



Project Leader
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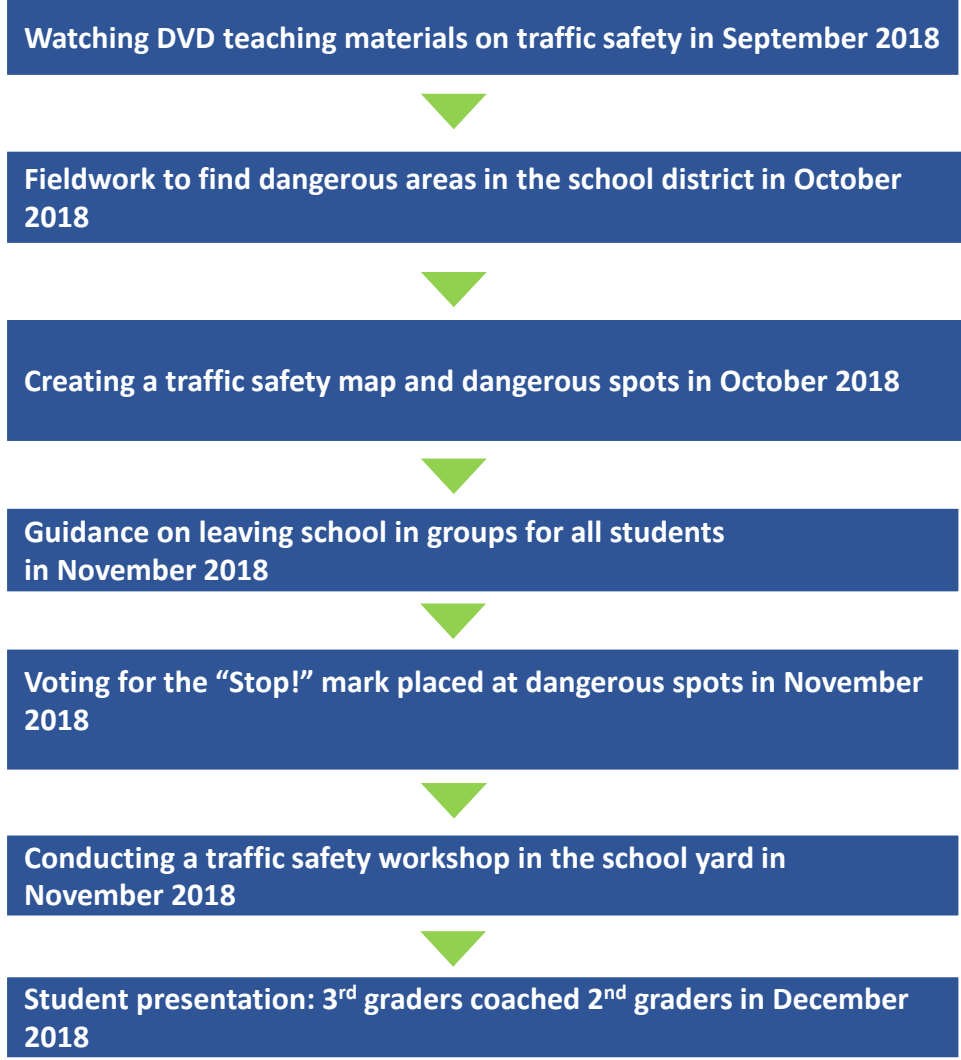
Purpose of the Study

- Clarify the requirements for promoting effective road safety education for students and establish a scheme for promoting education.
- Components of the Promotion Scheme
 1. Development of attractive educational programs (emphasizing students' initiative)
 2. Accumulation of evidence (empirical data for measuring effectiveness)
 3. Development of teaching materials and evaluation tools
 4. Educational support (e.g., training of instructors)

Research Content (FY2018)

- Implementation of traffic safety education according to the developmental stage and analysis of the learning process
 - (1) Educational activities for elementary school students: **Making a traffic safety map**
 - (2) Educational activities for junior high school students: **Making a traffic safety map**
 - (3) Educational activities for junior high school students: : **Making a high school student vision zero activity plan**
- Survey of teachers' awareness of educational dissemination
- Possibility of collaboration with an overseas country (Germany)

- A series of educational activities by third-grade students: 46 third-grade students (18 boys, 28 girls)



- Judgment criteria for dangerous areas by students



Danger level 50%

Danger level 100%



Both are 100% dangerous.



- Change in right and left checking rate when crossing intersections

A) Verbal instructions before leaving school on October 10, 2018
 e.g.) Stop and look left and right. It's a rainy day, so be careful not to slip.
 Watch out for cars turning right.

1st Observation:
 on Oct. 10, 2018 when leaving school

Validation rate: **23.2%** (by group)

On Oct. 11, 2018 when coming to school

Validation rate: **38.5%** (by group)

On Oct. 11, 2018 when leaving school

Validation rate: **23.2%** (by group)



B) Teaching specific actions for avoiding danger by using photos in a school assembly on November 5, 2018

2nd Observation:
 on November 6, 2018 when coming to school

Validation rate: **77.8%** (by group), **70.1%** (Individually)

3rd Observation:
 on December 14, 2018 when leaving school

Validation rate: **87.3%** (by group), **69.8%** (Individually)

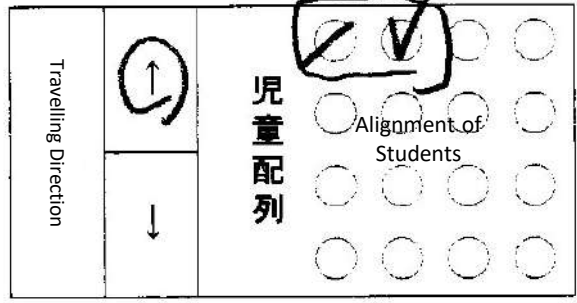
年	月	日	曜	天候	その他	登校	登下校	時	分	観察場所	評価者	
30	12	14	金	晴	雨	その他	登校	始	15	50	小学校B	
										観察児童数計	人	
学年層	総	中	高	性別	男	女	位置	右	左	中央	車道寄り	
横断時の安全確認及び位置	進行方向	↑	↓	○	○	○	○	○	○	○	○	
	安全確認	○	○	○	○	○	○	○	○	○	○	
	安全確認	○	○	○	○	○	○	○	○	○	○	
	安全確認	○	○	○	○	○	○	○	○	○	○	
横断位置	○	○	○	○	○	○	○	○	○	○		
状態	感じながら	遊びながら	走っている	下を見ながら	ふらふら	横に広がる						
横断	手前で止まる	手を挙げる	走って渡る	つられて渡る								
車両接近	やり過ぎて通行する(渡る)	接近を気にせず通行する(渡る)	動きを確認して通行する(渡る)									
特記事項												

➤ Oral instruction does not change behavior.
 ➤ Teaching children to think about specific behaviors **from their own perspective** to avoid danger by showing them photos of intersections they actually use is effective.

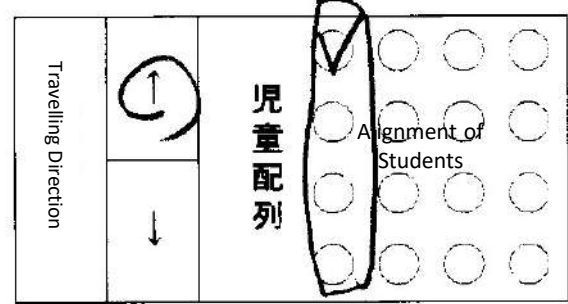
● Developing a simple behavioral assessment tool

年	月	日	曜	天候			登下校		時	分	観察場所	評価者			
30	12	14	金	晴	曇	雨	その他	登校	下校	その他	始 15 50		終 17 00	おれがーい B	観察児童数計
学年層	低	中	高	性別	男	女	位置	右	左	中央	車道寄り				
横断時の安全確認及び位置	進行方向		↑	児童配列											
	安全確認記号		/	右確認											
			\	左確認											
		V	左右確認												
		?	不明(判断つかず)												
横断位置		起点	○	方向	→										
状態	話しながら / 遊びながら / 走っている / 下を見ながら / ふらふら / 横に広がる														
横断	手前で止まる / 手を挙げる / 走って渡る / つられて渡る														
車両接近	やり過ぎて通行する(渡る) / 接近を気にせず通行する(渡る) / 動きを確認して通行する(渡る)														
特記事項															

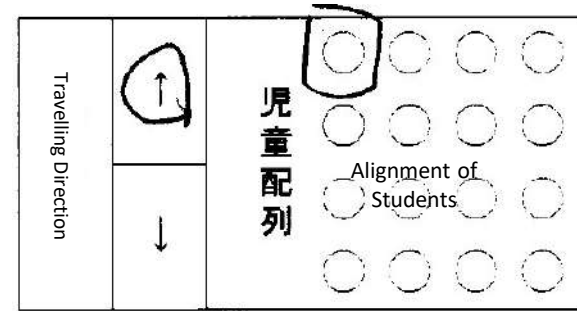
Alignment when crossing, with or without left/right confirmation, crossing route, special notes, etc.



Crossing in two horizontal line
Student on left checks right. Student on right checks left and right.



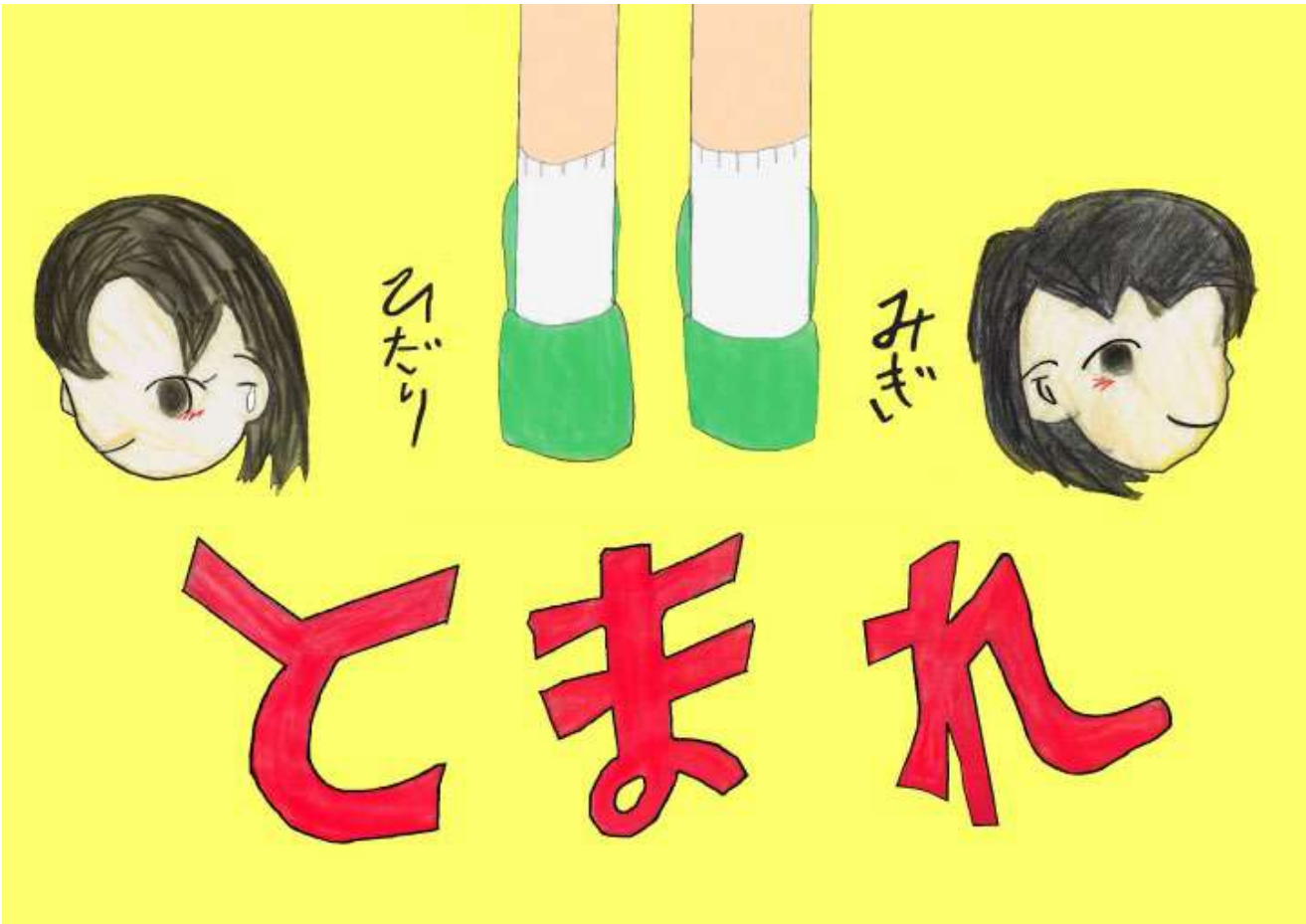
Crossing in a single vertical line
Only the first student checks left and right



Crossing alone, no confirmation.

- What is the design that motivates the children to stop?

Voting for the “Stop!” mark in November 2018



Post these symbols at several dangerous places in the school district and use them to guide new first graders.

Not a frog!
 Not even a panda!

Schoolwide Orientation on April 17, 2018

- Sharing their bicycling problems
- Sharing of the overall goal "Watari Junior High School Vision Zero
- Presentation of issues for each grade



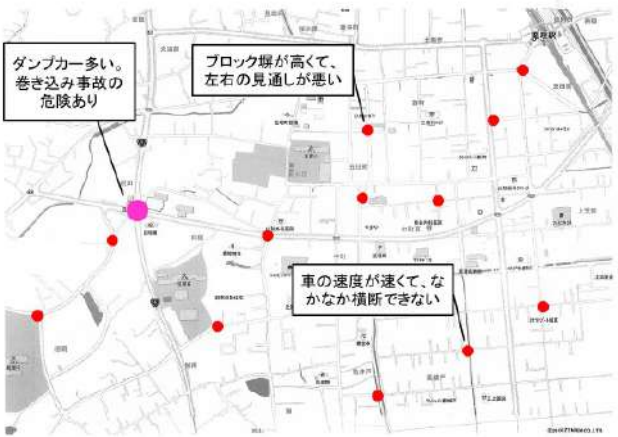
Workshop (2nd Year students) on April 24, 2019

- Predicting risk when crossing signalized intersections
- Reviewing our own bicycling
(**Mirroring**: footage of actual bicycling)
- Reviewing decision making when crossing a signalized intersection
(**Devil vs. Angel**: Self-test and comparison with others)



Workshop (2nd and 3rd year students) on April 24 and May 1, 2018

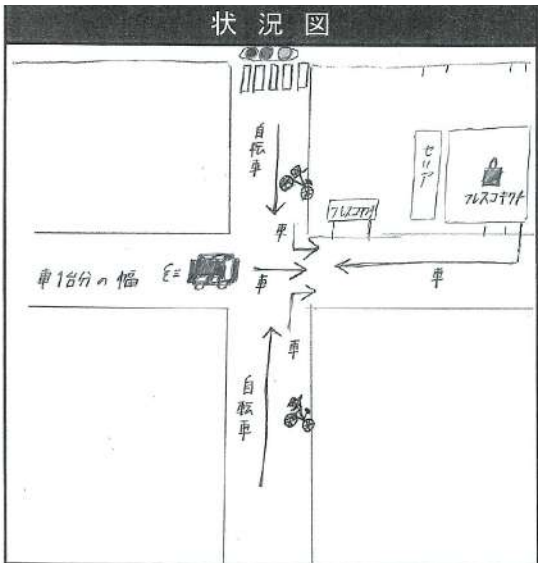
- Sharing information on dangerous spots in the school district
- Making a traffic safety map (identification of dangerous spots)
- Specific dangerous situations and risk prediction
- Individual goal "My Vision Zero Declaration"



- Workshop "Making a traffic safety map" 281 of 2nd and 3rd year students (144 boys and 137 girls)

A) Identification of dangerous spots

- 1 Objective: Let's share information in the school.
- 2 Mark dangerous spots on the map.
- 3 Create a situation drawing.
- 4 Group presentation and opinion exchange

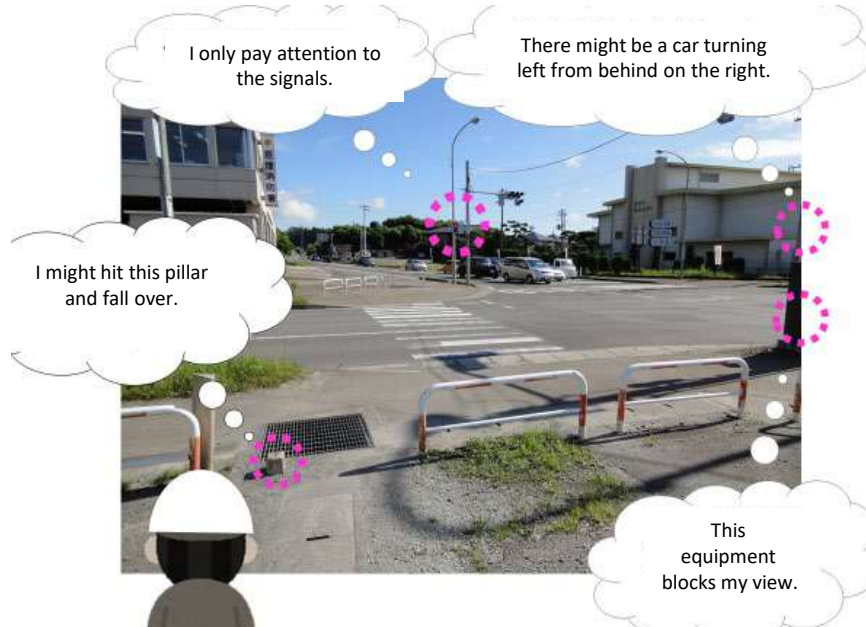


説明

- ・横断歩道が存続に見通しが悪い。
- ・スーパーがあるため、交通量が多い。
- ・道路がせまいので、車の流れ遅い時にぶつかりそうに標を。
- ・夜は、電灯が少なく、周りが見えにくい。

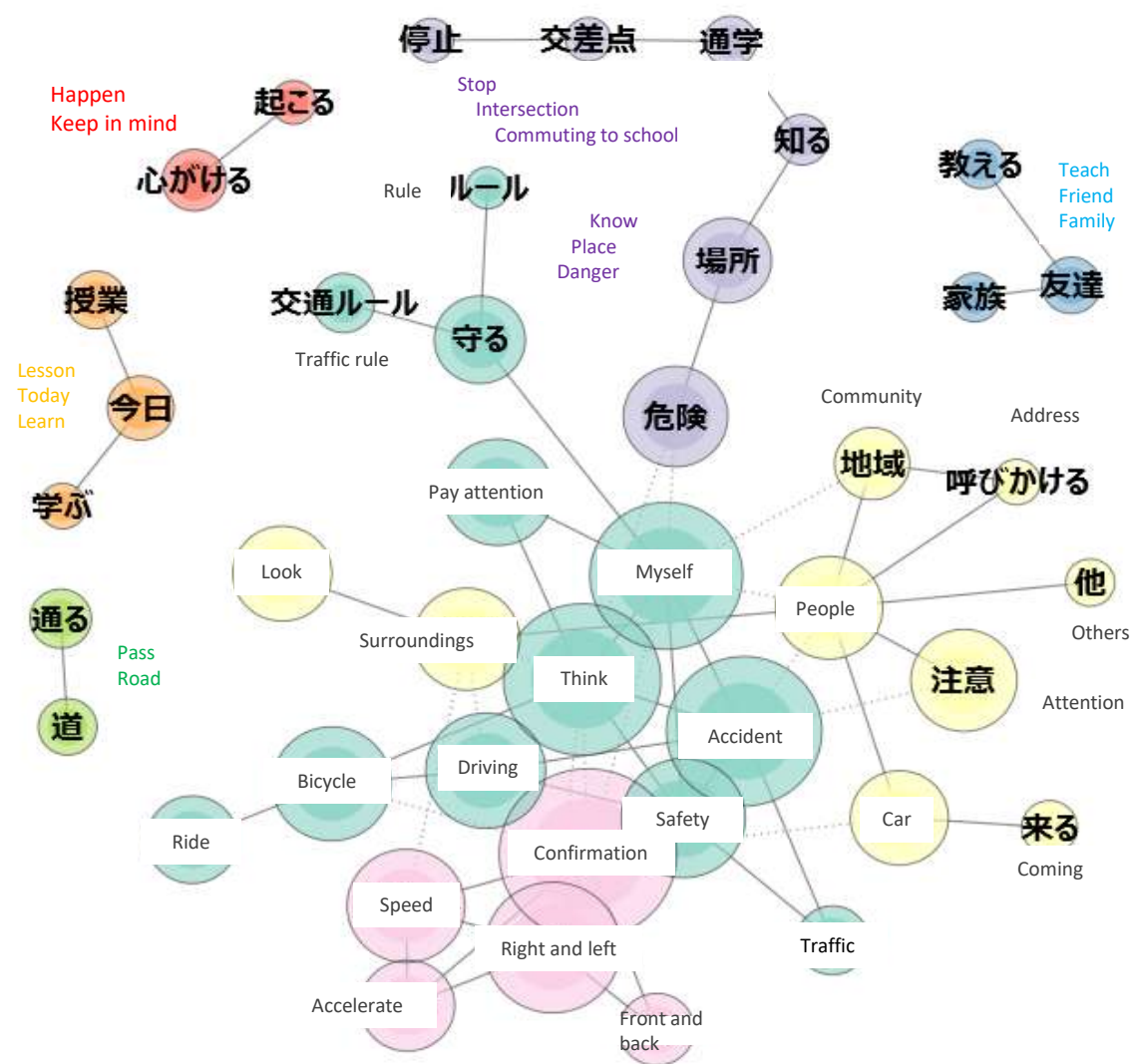
B) Predicting and avoiding danger in specific situations

- 5 Writing risk predictions on photos from student subjectivity
- 6 Consider specific actions to avoid danger.
- 7 My "Vision Zero" Declaration



★To reduce the number of accidents involving ourselves, others, and the community to zero

● A Qualitative Analysis of the Learning Process of Traffic Safety Map Making Education



Text analysis of "My Vision Zero Declaration" written by students

Rank	Co-occurrence Words	Words Similarity Measure
1	Speed-Accelerate	0.620
2	Confirmation-Right and left	0.607
3	Bicycle-Ride	0.432
4	Follow-Traffic rule	0.426
5	Surroundings-Look	0.310
6	Danger-Place	0.293
7	Right and left-Front and back	0.292
8	Friend-Family	0.292
9	Car-Come	0.291
10	Accident-Think	0.284

Jaccard Index

Analysis: Ryohei Kobayashi (4th year student at Tohoku Institute of Technology, Faculty of Engineering)

- Comparison between elementary and junior high school students on the content of risk prediction



No one could see the car coming.

This car will turn.

あぶないところ
まっしきは長いけど、
わたるときは短いし号き

あぶないところ
ひん車がよこにおる

Potential Danger
Subject is not in the image.
OR
Assume secondary damage from the object in the image.

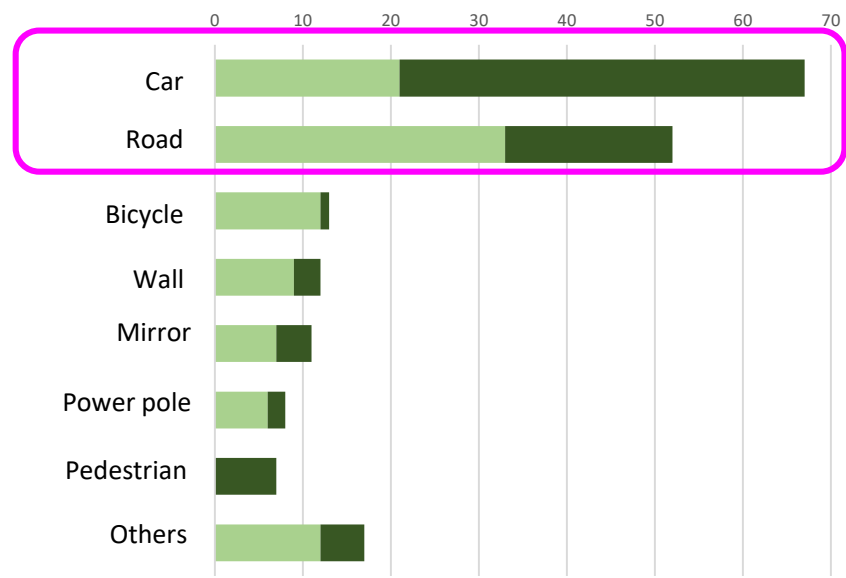
Potential Danger
The object is visible in the image.

An example of risk prediction classification

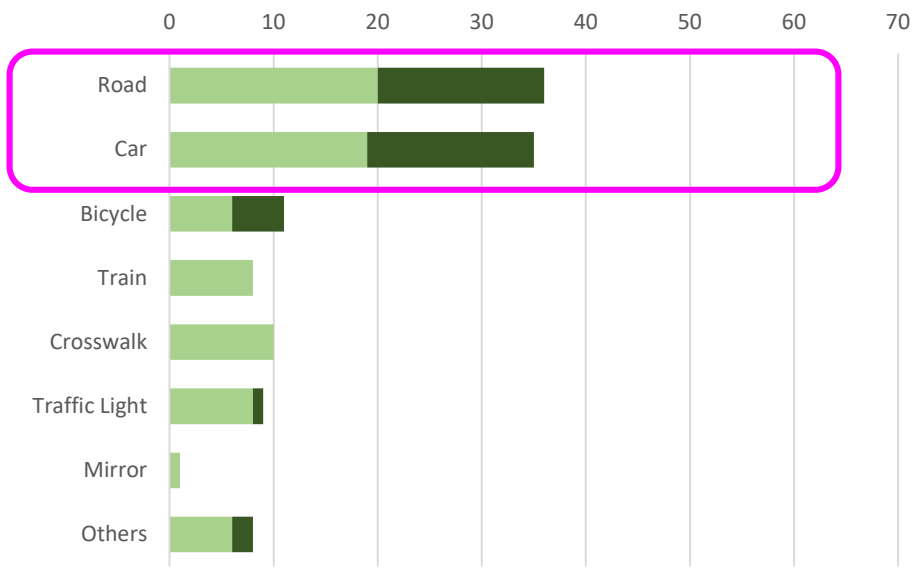
- Comparison between elementary and junior high school students on the content of risk prediction

Classification of Targets for Risk Prediction

Junior high school students
Risk prediction target N=162



Elementary school students
Risk prediction target N=120

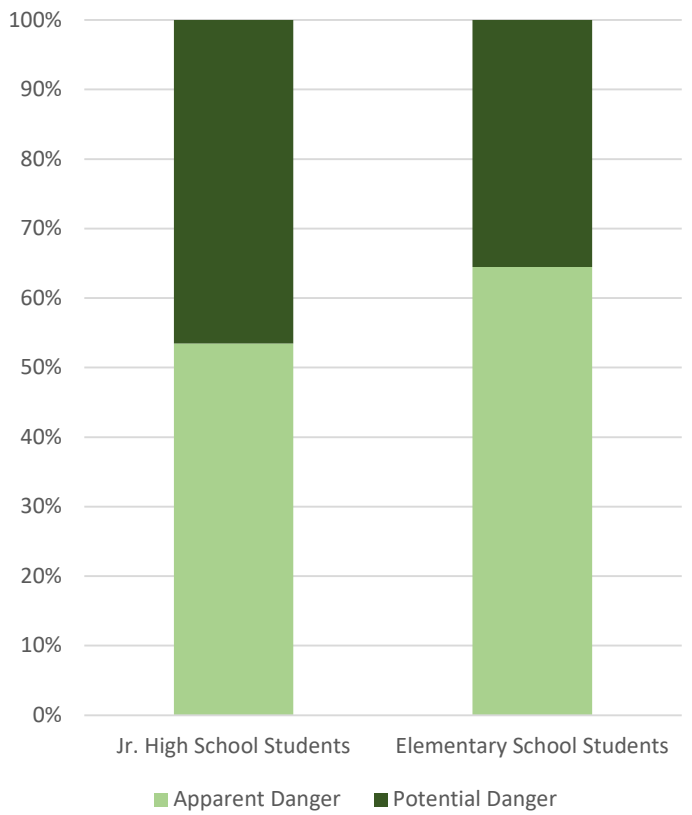


Apparent Danger
Potential Danger

Analysis: Ryohei Kobayashi (4th year student at Tohoku Institute of Technology, Faculty of Engineering)

- Comparison between elementary and junior high school students on the content of risk prediction

All Targets Classification



There is no significant difference between developmental stages in the targets and classification for risk prediction.



With proper guidance, the ability to predict danger can be fully developed from the third grade.

Group Discussion "Miyagi High School Students Vision Zero" Activity Plan on August 3, 2018

1. Information sharing on issues faced by each school
2. Miyagi High School Students Vision Zero Activity Plan
 - Select a theme
 - Create an annual activity plan to achieve Vision Zero.
 - Exchange opinions with other groups and teachers
 - Presentation and general sharing

Conditions for the proposed activities

- (1) Aiming to ensure the safety of **ourselves, others, and the community**
- (2) The **activity must be conducted independently** by high school students.
- (3) Each individual should be aware of **their own issues**.
- (4) Include **creative** activities other than conventional activities.
- (5) Make activities enjoyable to everyone.

議題 **みやぎ高校生ビジョン・ゼロ**

各校の課題を解決するとともに、宮城県内の高校生の事故をゼロにするための活動計画を提案してほしい。



ビジョン・ゼロ
VISION ZERO

- ・交通事故による死者・重傷者を“0”にする取り組み
- ・スウェーデンで始まった交通安全施策

Theme: Miyagi High School Students Vision Zero

Propose an activity plan to solve the problems of each school and to reduce the number of accidents to zero among high school students in Miyagi Prefecture.

VISION ZERO

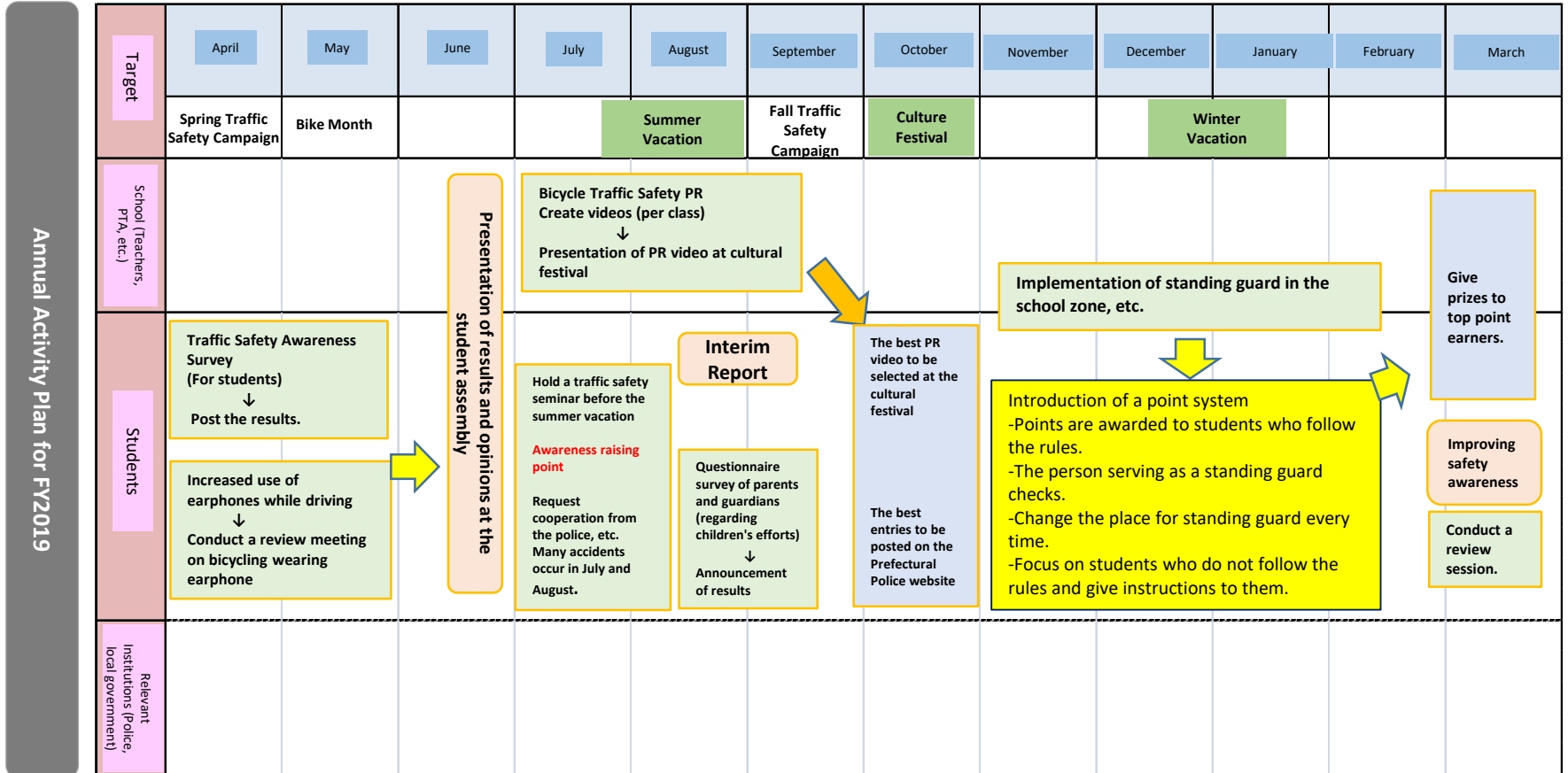
Efforts to reduce the number of people killed or seriously injured in traffic accidents to zero
Traffic safety measures started in Sweden



- Example of the activity plan developed by high school students

Activity Goal

To achieve "Vision Zero for Miyagi High School Students", we will change the mindset of students!



★Future issues: How can we provide a place to put the plan into practice?

Sponsored by the Miyagi Prefectural Board of Education and the International Research Institute of Disaster Science, Tohoku University
Survey was conducted at the [Forum on School and Community Safety for the Future](#) on November 22, 2018.

- **Targets:** Elementary, junior high and high school teachers, mainly in Miyagi Prefecture
- **Procedure:** Distributed to 532 participants
Number of valid responses: 317 (Collection rate: 59.6%)
- **Question**

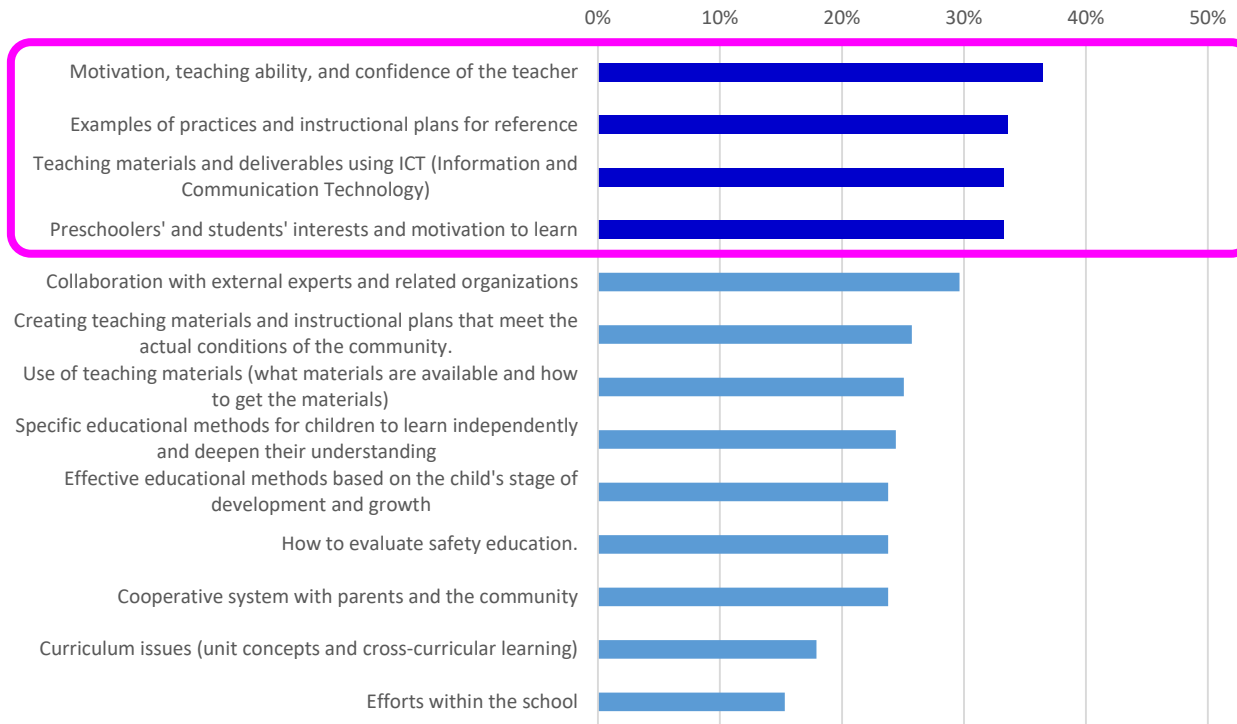
"Do you have any issues for further promoting safety education, such as difficulties, having trouble, lack of information, concerns or worries?"

- **Item Example**

Specific educational methods for children to learn independently and deepen their understanding

Yes (Transportation/ Life /Disaster) No

- Teachers' perceptions of the challenges in promoting safety education



Many teachers are struggling at the [entry point of educational practice](#), such as motivation to teach, teaching ability, confidence, teaching materials, children's interest and motivation to learn, and reference cases.

- Accompanied the Cabinet Office's "Survey on Overseas Traffic Safety Measures
- Country visited: [Germany](#) January 28 to 31, 2019
- Survey Objectives:
 - (1) Process of planning and implementation of traffic safety measures
 - (2) Collaboration and cooperation with related organizations and stakeholders
 - (3) [Report on the current status and issues of traffic safety education in Japan](#)
- Organizations visited
 - (1) [ADAC \(German Automobile Club\)](#)
Providing hands-on traffic safety education for preschoolers, elementary school students, and youth
Distributing 750,000 reflective jackets, and providing information to school teachers, etc.
 - (2) [Bavarian State Government and Ministry of the Interior](#)
Bicycle education for elementary school students and implementation of the state's own traffic safety campaign
 - (3) [DVR \(German Road Safety Council\)](#)
Developed many traffic safety education programs. Moderators provide educational support.
Helping federal and state governments develop traffic safety plans
 - (4) [BMVI \(German Federal Ministry of Transport and Digital Infrastructure\)](#)
Funding the activities of DVR and DVW (German Traffic Watch)
Planning traffic safety plans and promoting traffic safety campaigns and educational activities



- Key Points on Traffic Safety Education for Children in Germany

- To be involved in educational support


- Citizen-based initiatives support traffic safety education activities.



- The government, private organizations, volunteers, and other related groups are working together to promote the planning and implementation of countermeasures.
- Bavaria recruits about 30,000 volunteers a year to watch over school zones.
- Private organizations (ADAC, DVR, etc.) develop educational programs and provide educational materials and methods to families and school teachers.
- Staff and volunteers from private organizations teach the children.
- Interest in Traffic Safety Education in Japan
- They showed great interest in the educational activities of "Traffic Safety Map Making" and "Bicycle Education by Mirroring Method".

→We would like to deepen our partnership and cooperation and pursue the possibility of joint development of education.

Correspondence with dissemination
scheme components



-
- a. When the content and the method of education are interesting and useful, children will naturally show a desire to learn independently. (1) (3)
-
- b. Education in which students and others are motivated to learn can be a driving force for promoting the spread of education, as school teachers and others concerned will also be interested in it. Same is in Germany. (1) (4)
-
- c. Presenting images and videos of intersections where students are passing by from the child's subjective angle (visualization of behavior in relation to specific scenes) encourages checking behavior when crossing. (2) (3)
-
- d. Many school teachers have concerns at the initial stage of educational practice. However, experiencing effective educational practice and realizing educational results may improve their motivation to teach. (2) (4)
-
- e. It is possible to develop overseas collaboration on educational development with other countries that have the same problems. (1) (3)
-

(1) Attractive educational programs, (2) Evidence, (3) Teaching materials and evaluation tools, (4) Educational support



公益財団法人 国際交通安全学会
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