

Effectiveness of Universal Design Education at Japanese Schools

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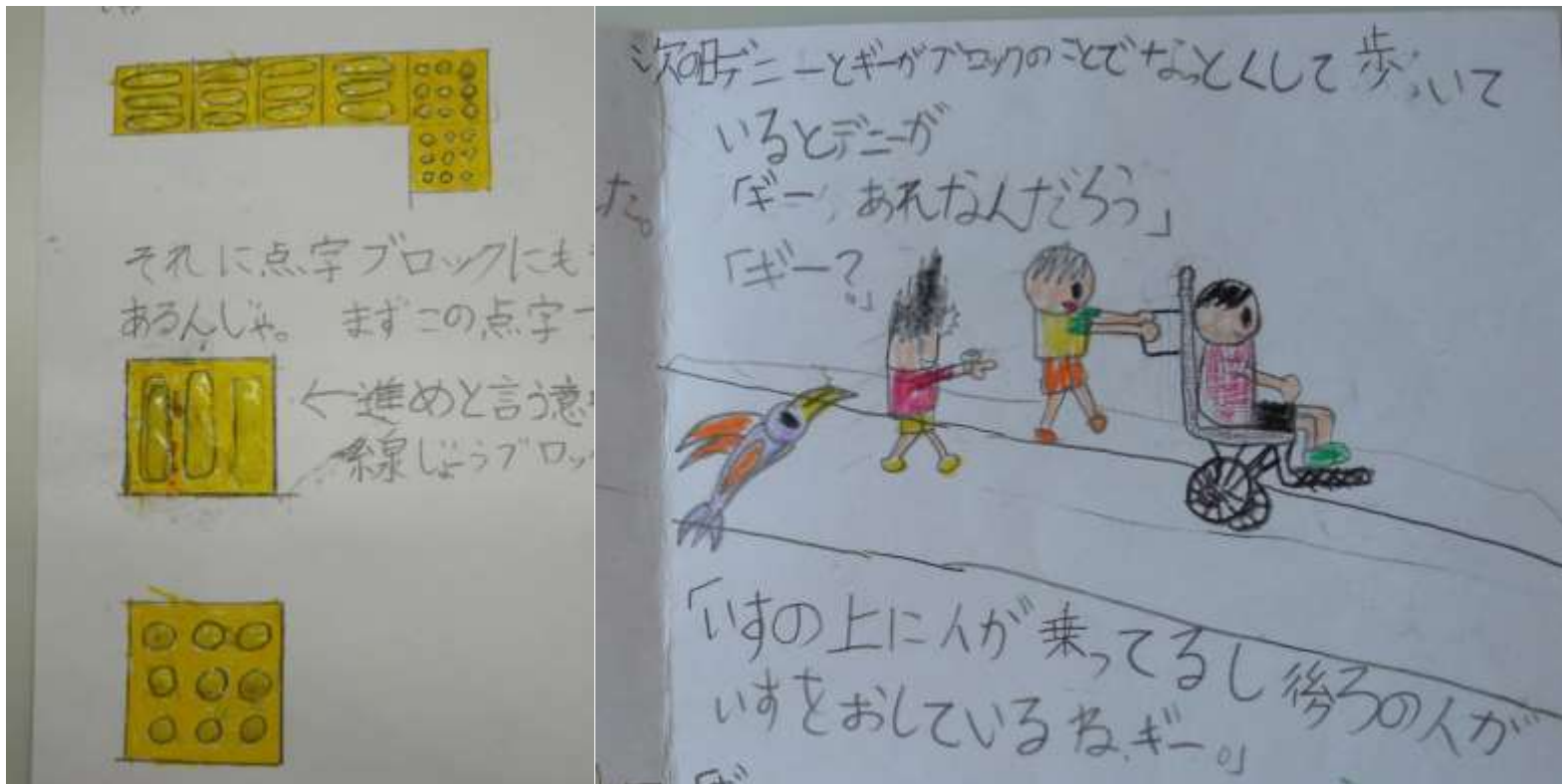
Shizuoka, Saga and Tokushima prefectures

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Universal Design Picture Book Contest entries

- Emphasis on tactile blocks and wheelchairs, i.e., more of barrier-free design than UD.



Barrier-free or Universal design?

- Barrier-free design became a major issue in the 1990s
- Rapid ageing of Japanese society
- Accessible Building Law 1994
- Accessible Transportation Law 2000
- Universal design was assumed to be a natural extension of barrier-free design (Kawauchi, 2007)

Education of UD

- How to avoid misinterpretation?
- Japanese language textbook for six graders on Universal Design (Kose, 2005)
- The article as a starting point for children to continue their own surveys and experiences within their environment, to truly understand the concept of UD.

Hypotheses

- Children taught with Mitsumura textbook had deeper understanding of UD compared to others.
- Examining difference of UD understanding will lead to identify problems of UD education.
- Possible proposals to better UD education planning.

Questions asked

Q1. Do you know “barrier-free design (BF)?” Y/ N.

Q2. If yes, how did you know the word? Local government
publication/ Mass media/ School education (which subject:)/
Other (Specify:)

Q3. Please choose five keywords you will recall with BF. Please
write these five in their order, choosing from the list below. (The
keywords are in Japanese phonetic order.)

Q4. Do you know “universal design (UD)?” Y/ N.

Q5. If yes, how did you know the word? Local government
publication/ Mass media/ School education (which subject:)/
Other (Specify:)

Q6. Please choose five keywords you will recall with UD. Please
write these five in their order, choosing from the list below. (The
keywords are in Japanese phonetic order.)

Questions asked (cont.)

Q7. Please tell us when you graduated from your high school (month/ year:)

Q8. Please tell us which city you are from.

Q9. Which primary school did you attend as a six grader? (Name of school and address)

Q10. How many family members do you live with?

Q11. Please let us know your family composition and age: Great grandfather/mother; Grandfather/mother; Father/mother; Elder brother/sister; Younger brother/sister; other.

Q12. Date answer was filled:

Q13: Name of school, department:

Previous survey and results

- Newly enrolled university students as freshman in 2012 were surveyed.
- SUAC, Shizuoka Prefecture
- TOTECH, Miyagi Prefecture, and
- S-NCT, Miyagi Prefecture

Previous survey and **results**

- No noticeable difference was detected.
- The reason might be that full six years' gap was too long to keep the difference.

New survey

- Survey was conducted to high school students in three prefectures:
Shizuoka, Saga, and Tokushima
- The students had full three year gap after they learned the material.
- Students at Shizuoka University of Art and Culture (SUAC) was included for comparison to previous year.

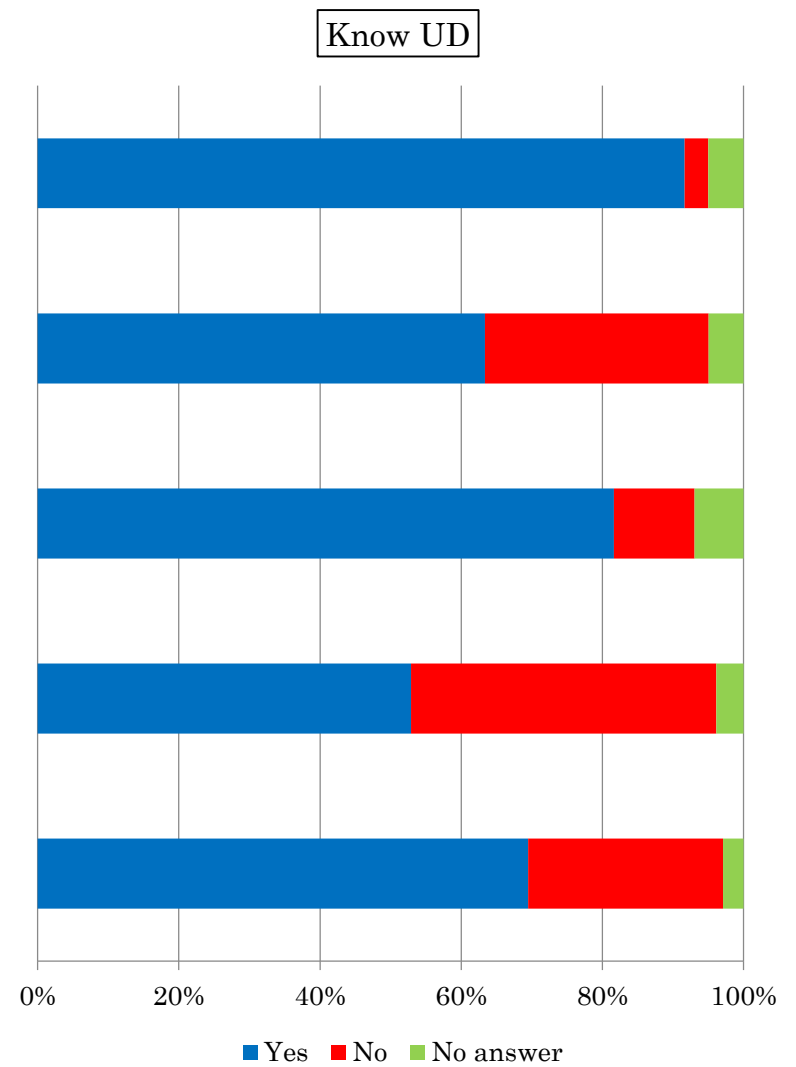
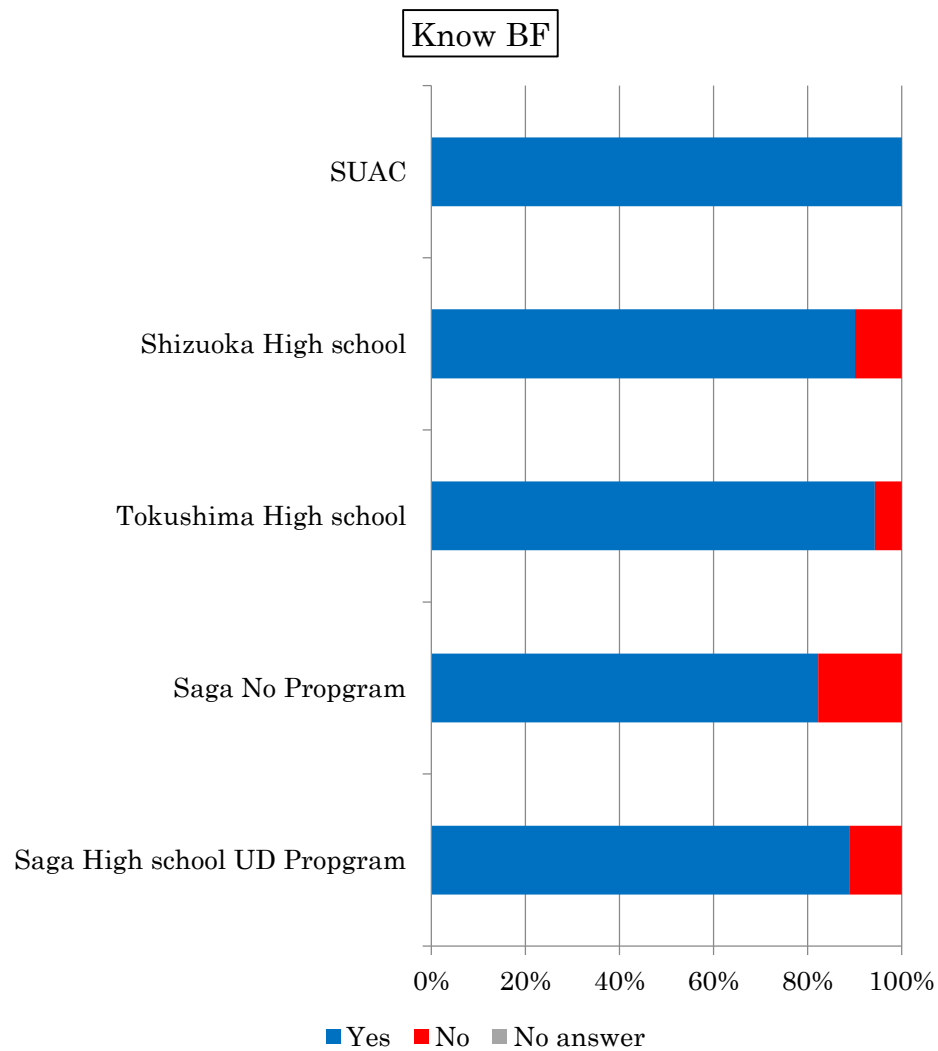
Three prefectures

- Both Shizuoka and Saga have adopted universal design as their policy initiative.
- Tokushima has not.
- The next table gives number of responses from schools surveyed.

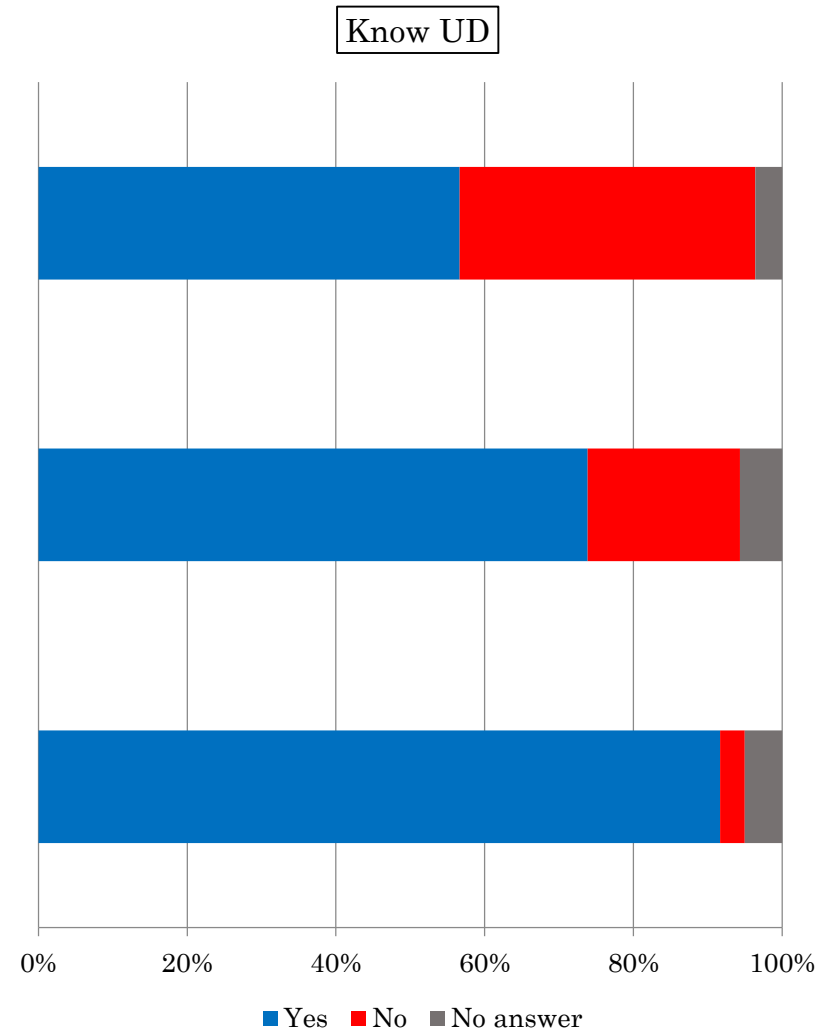
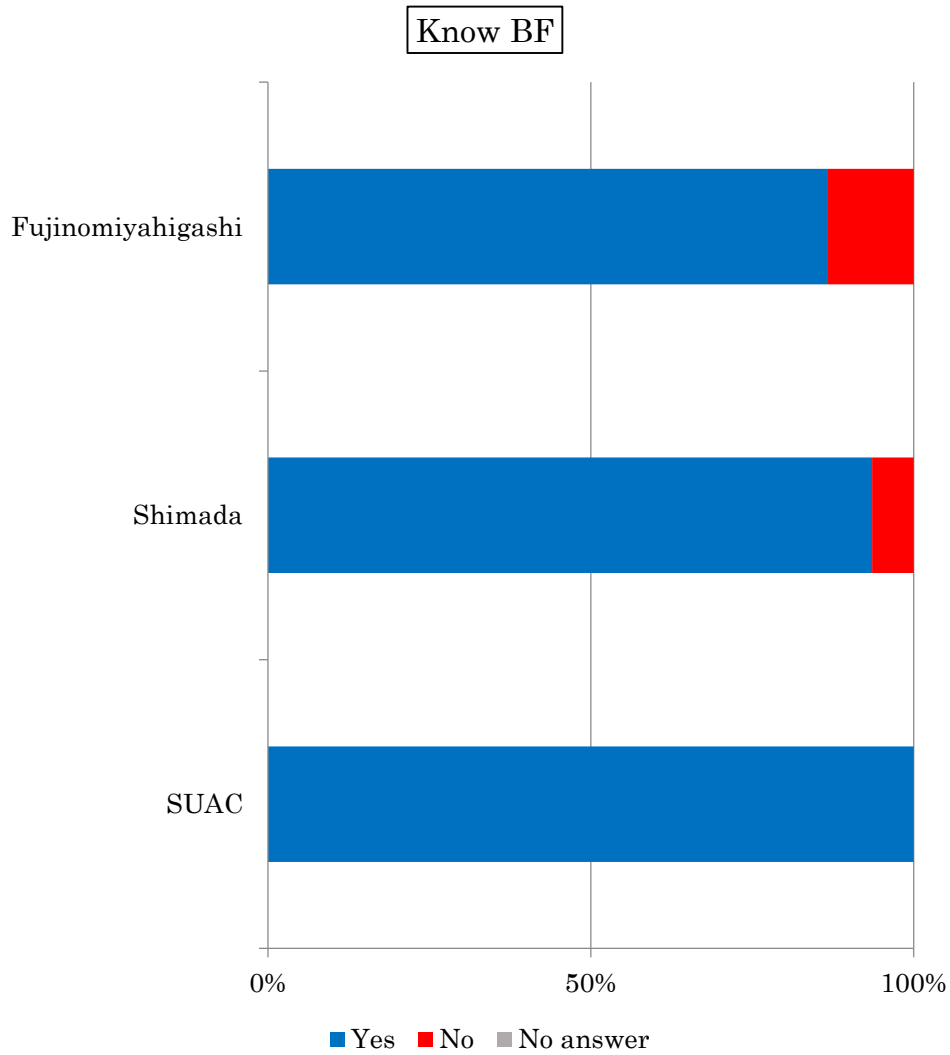
Prefecture	School name	Used Mitsumura	Did not use Mitsumura	No answer	Total
Shizuoka	SUAC*	85	95	0	180
	Shimada	2	76	0	78
	Fujinomiya-higashi	3	80	0	83
Tokushima	Johnouchi	73	6	0	79
	Johoku	75	4	0	79
Saga	Ushizu**	11	141	6	158
	Taku**	1	147	2	150
	Kashima Vocational	2	155	0	157
	Karatsu Seisho			102	102

Remarks to surveyed schools

- Two high schools in Saga, i.e., Ushizu and Taku were designated as UD education promotion program schools.
- As with Taku and Kashima, both first grader and second grader were surveyed.
- Problem: Neither Shizuoka or Saga high school students in general learned with Mitsumura.

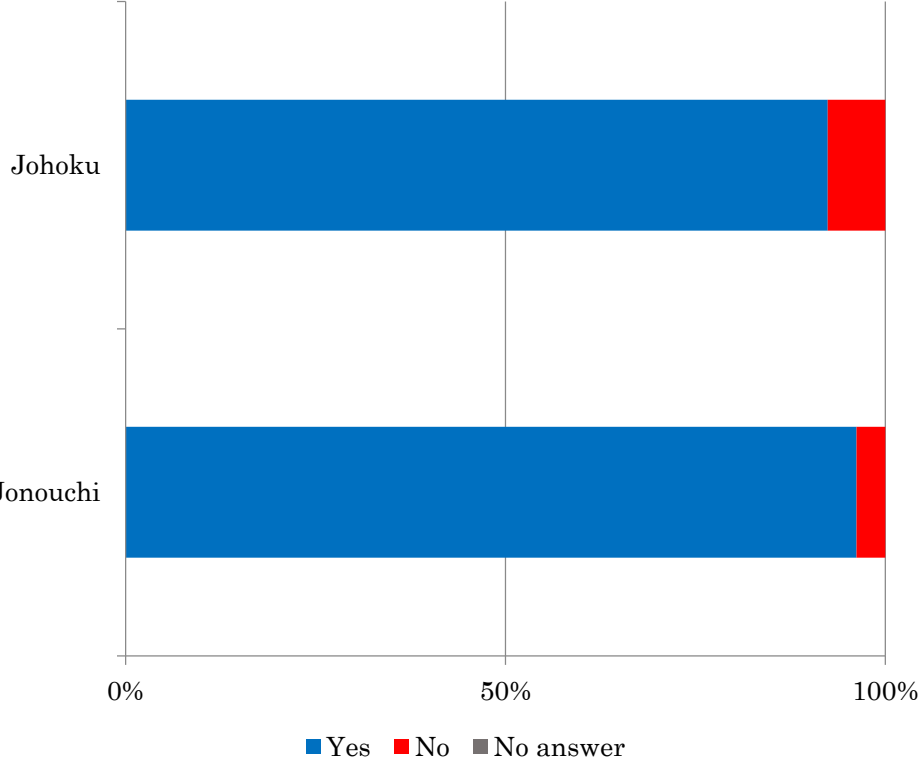


Knowledge of the words: BF and UD

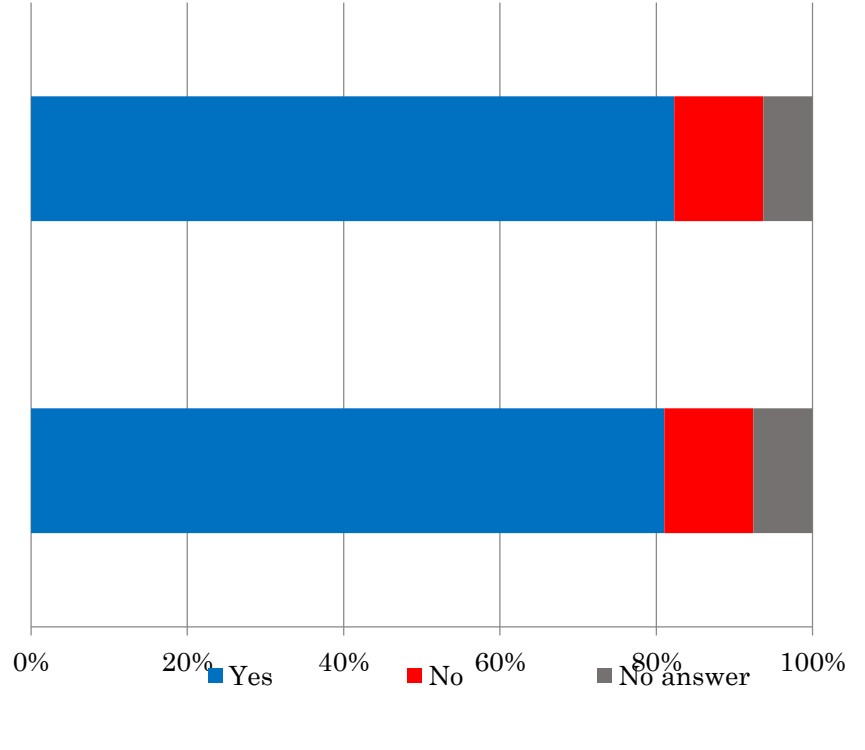


Knowledge of the words: BF and UD in Shizuoka

Know BF



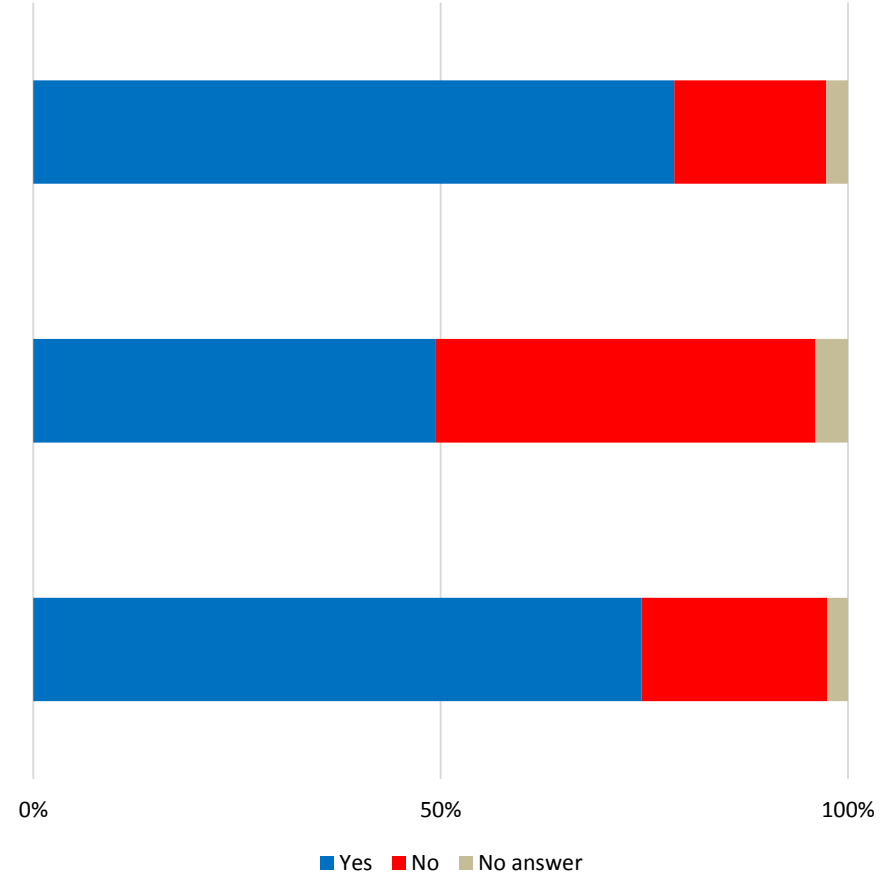
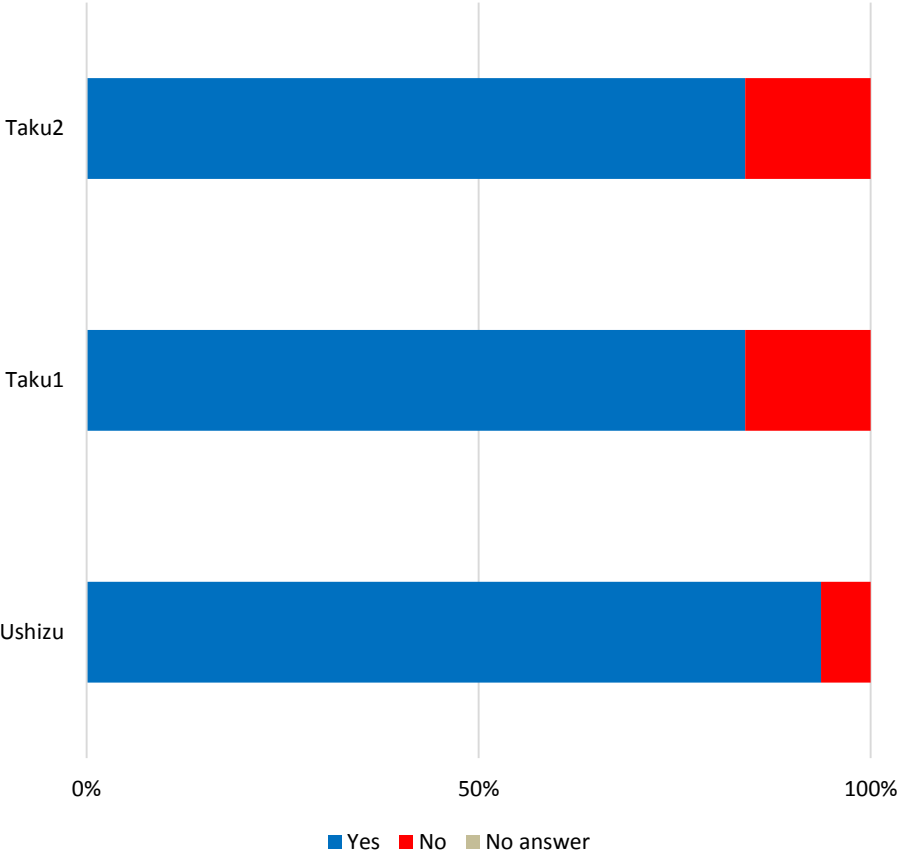
Know UD



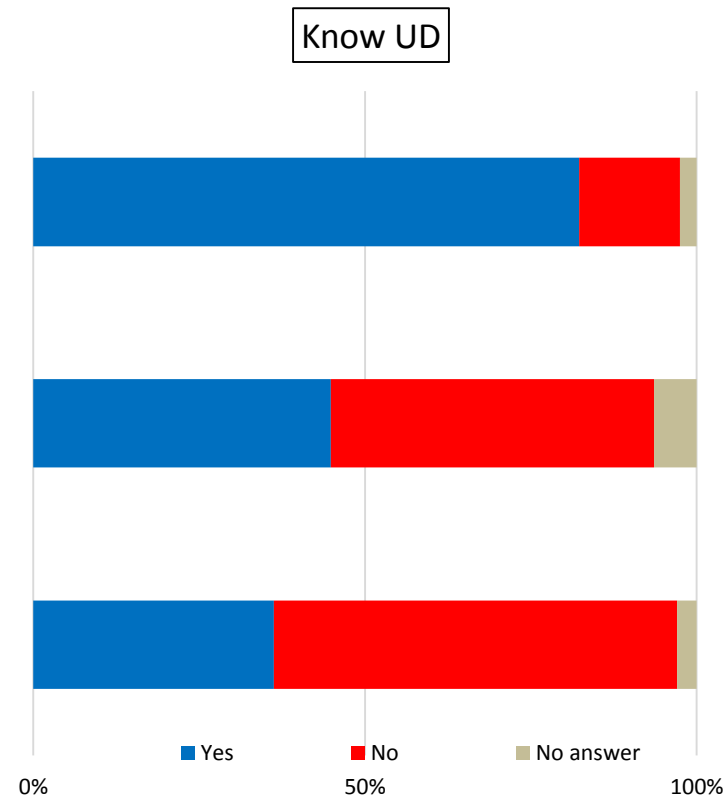
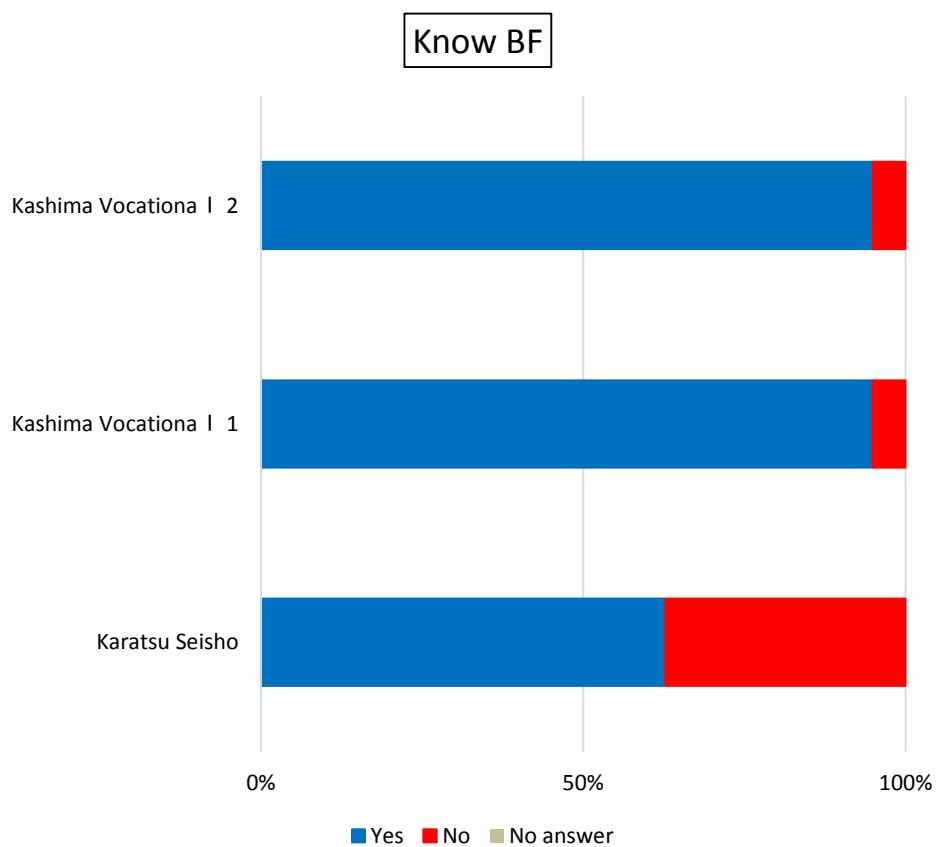
Knowledge of the words: BF and UD in Tokushima

Know BF

Know UD



Knowledge of the words: BF and UD in Saga with UD education program

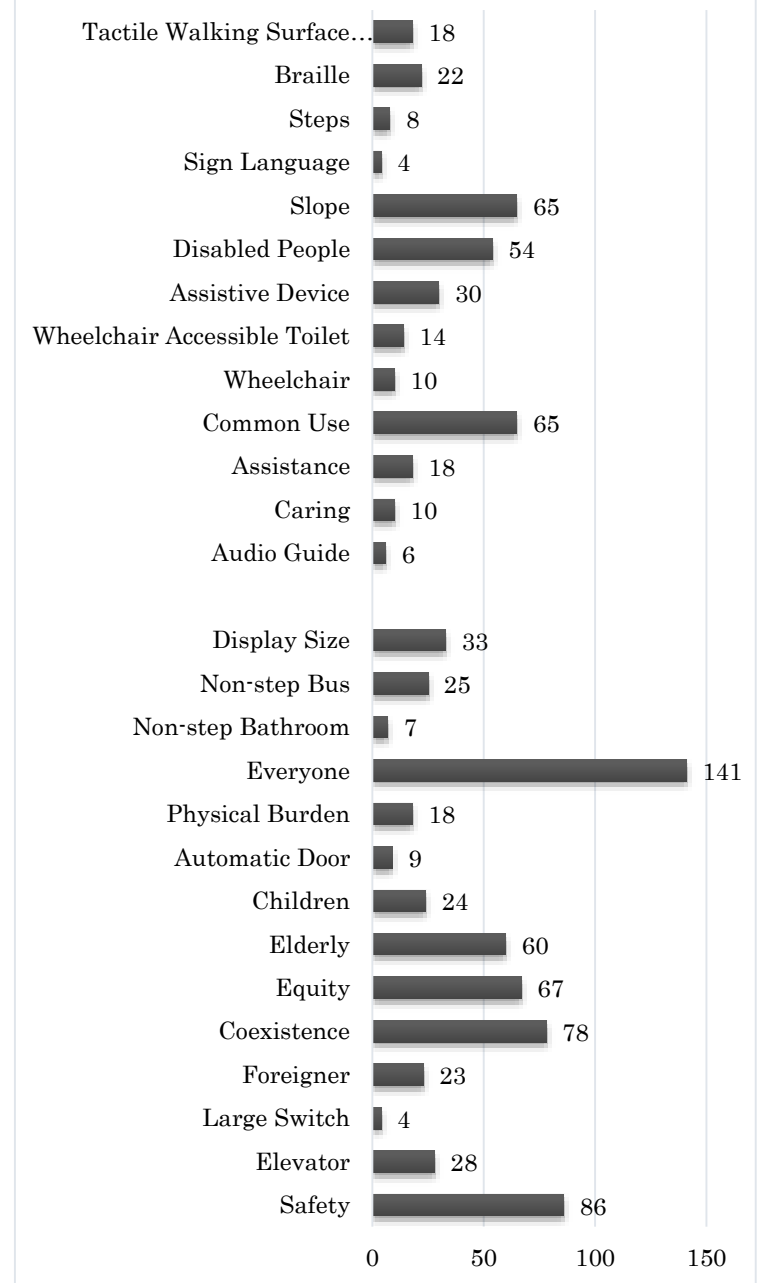
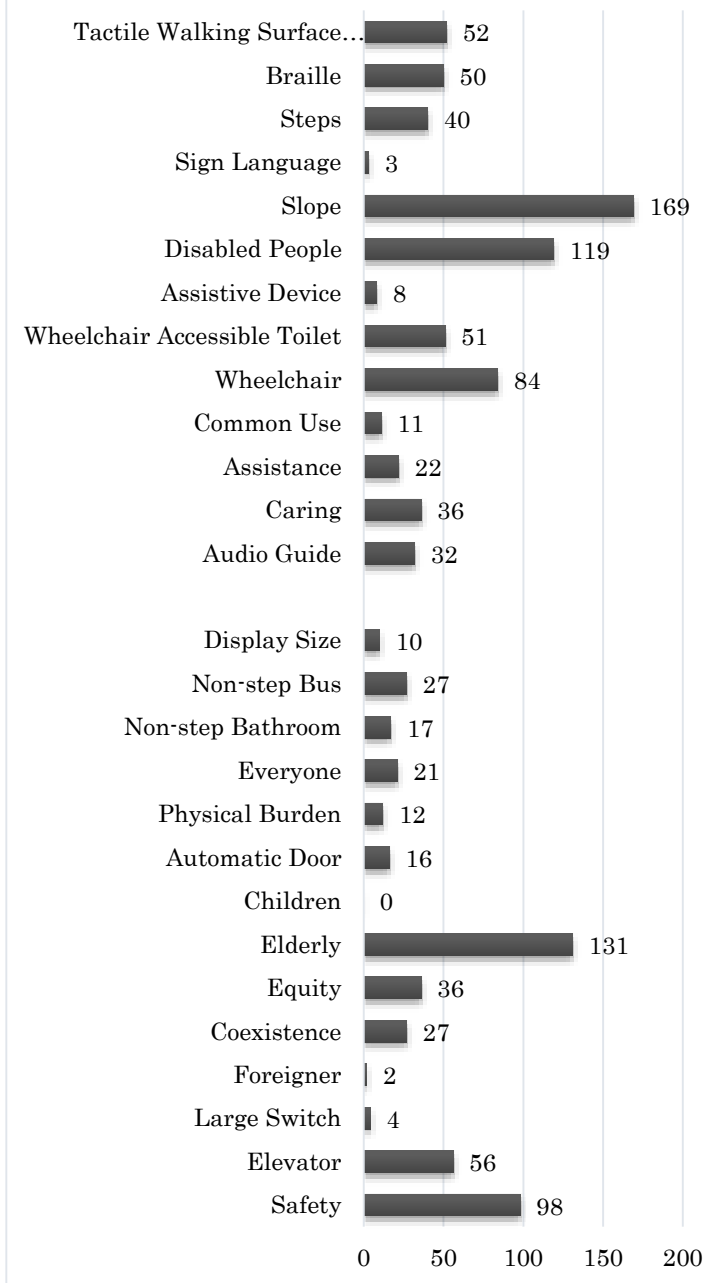


Knowledge of the words: BF and UD in Saga without UD education program

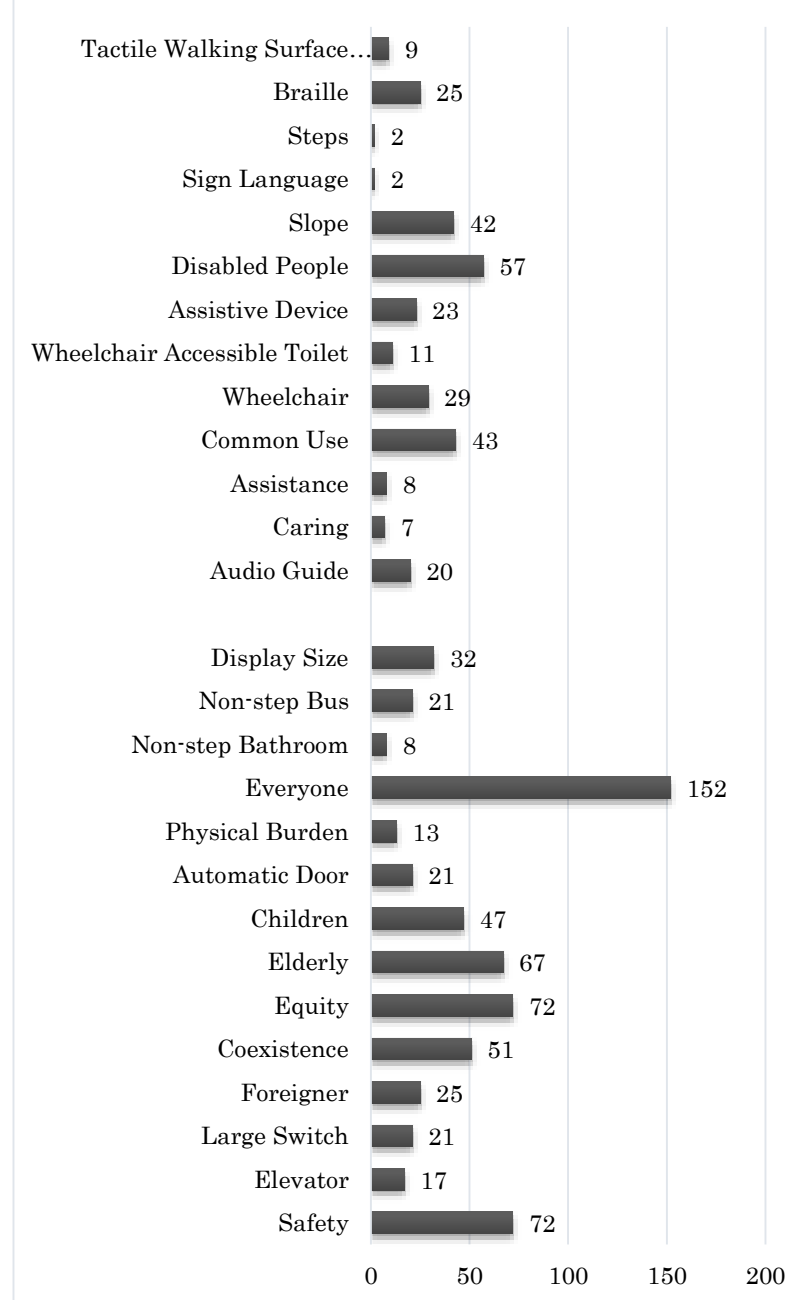
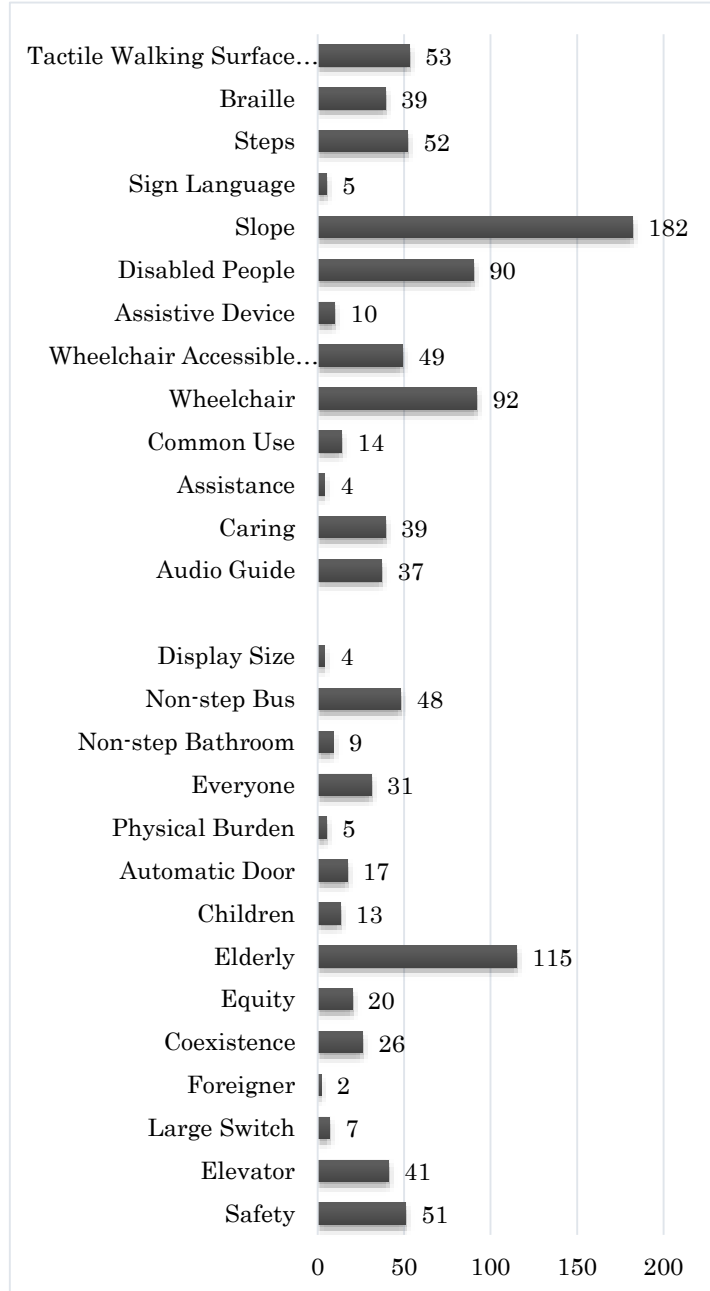
Major Keywords

BF: Tactile Walking Surface Indicator; Braille; Steps; Sign Language; Screen Reader; Condensed Transcription; Communication by Writing; Lip Reading; Cane; Slope; Disabled People; Vulnerable; Caption; Assistive Device; Wheelchair Accessible Toilet; Wheelchair; Common Use; Magnification; Assistance; Caring; Audio Guide; Ostomate; Accessibility.

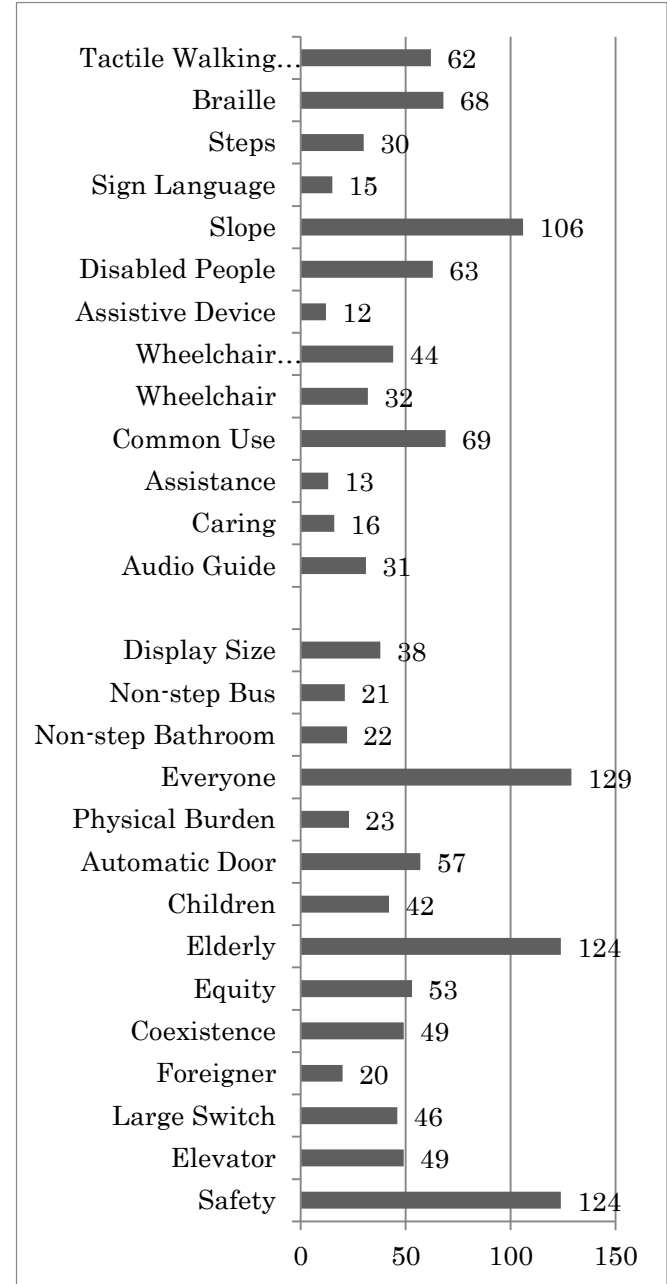
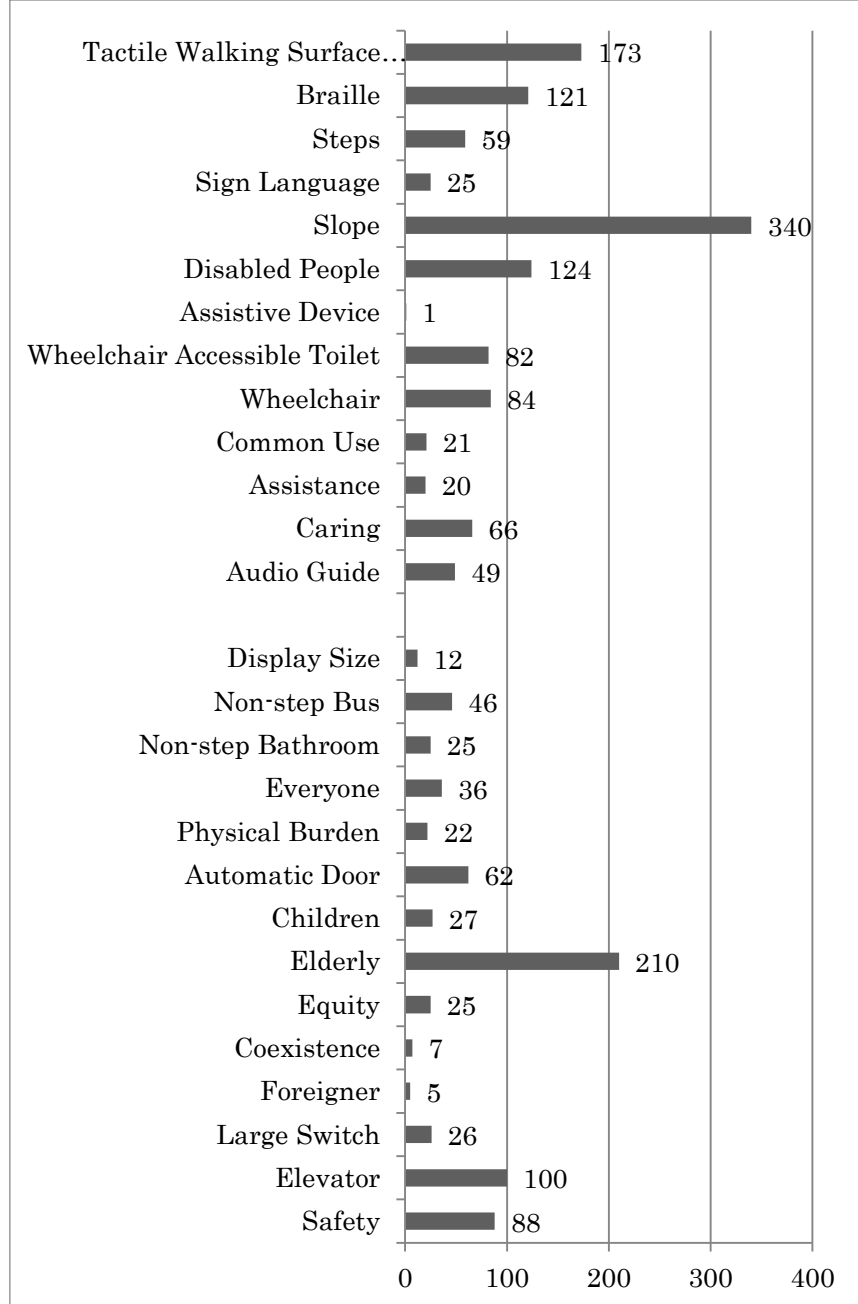
UD: Lever; Display Size; Non-step Bus; Non-step Bathroom; Everyone; Physical Burden; Automatic Door; Children; Elderly; Equity; Securing Space; Coexistence; Foreigner; Bidet Toilet; Large Switch; Elevator; Safety; IC Chip Card.



Chosen keywords from SUAC students who did not use Mitsumura: related to BF (left), and related to UD (right)



Chosen keywords related to BF, from SUAC students who used Mitsumura. related to BF (left), and related to UD (right)



Chosen keywords from Tokushima students: related to BF (left) and UD (right)

Conclusions

- High school students remembered what they learned from Mitsumura textbook (in Tokushima).
- UD program at high schools will work effectively to some extent.
- Students of two prefectures with UD policy agenda are more knowledgeable of UD was not verified.

Conclusions, cont.

- UD policy implementation by the local governments is not effectively communicated to high school students. If it was done better, the students should know more about UD, even if they did not learn with Mitsumura textbook.
- Some rigorous strategy such as learning by experience in the field needs to be implemented to develop deeper understanding of UD.

An additional note

- A further examination of materials in Japanese language textbooks at secondary schools revealed that barrier-free design topics, i.e., both wheelchair use and vision impairment, were included in textbooks edited by other companies. They definitely reinforce the conception that those specific BF problems are important, negating the idea that design issues are for everyone, particularly in Japan.

Population 65+: 1950-2050

