

Group 3

NATIONAL INSTITUTE OF TECHNOLOGY, WAKAYAMA COLLEGE

Theme 2:

Changes in how industrial robots are used

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WHAT IS AN INDUSTRIAL ROBOT ?



ISO definition
-more than 2 axes
-automatic control
-programmable

KUKA KR QUANTEC
(<https://www.kuka.com>)

QUESTIONNAIRE ABOUT INDUSTRIAL ROBOTS

How old are you? ()

Q1. Do you know that there are some factories where robots work?
(e.g. car factory, food factory)

-YES -NO

Q2. Do you know what kinds of tasks the robots do?
(Multiple answers allowed)

-Lifting something heavy -Assembling -Painting -Arranging
-Filling up food etc. -Carrying luggage -Other ()

Q3. Do you like robots ?

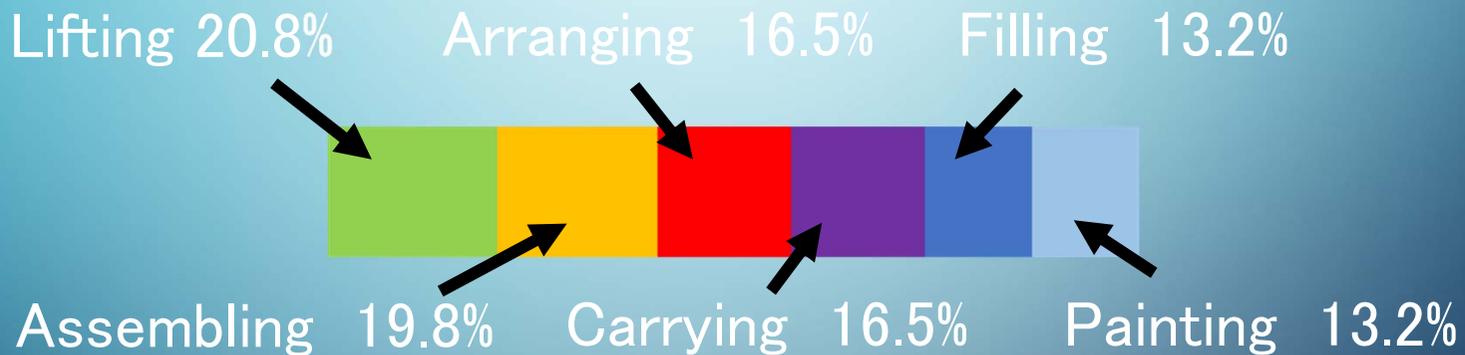
-Strongly like -Very like -Slightly like -Dislike -Strongly dislike

RESULTS

Q1 Do you know some factories where robots work ?



Q2 What kinds of tasks the robots do?



Q3 Do you like robots ?

All children answered Strongly like, Very like or Slightly like.

TRADITIONAL INDUSTRIAL ROBOTS

Vertical articulated robot



Kawasaki BX

Horizontal articulated robot



NACHI EC

Parallel link robot



FANUC Robot
M-1iA

(<https://fanuc.co.jp/>)

LATEST INDUSTRIAL ROBOTS

Collaborative robots



ABB YuMi

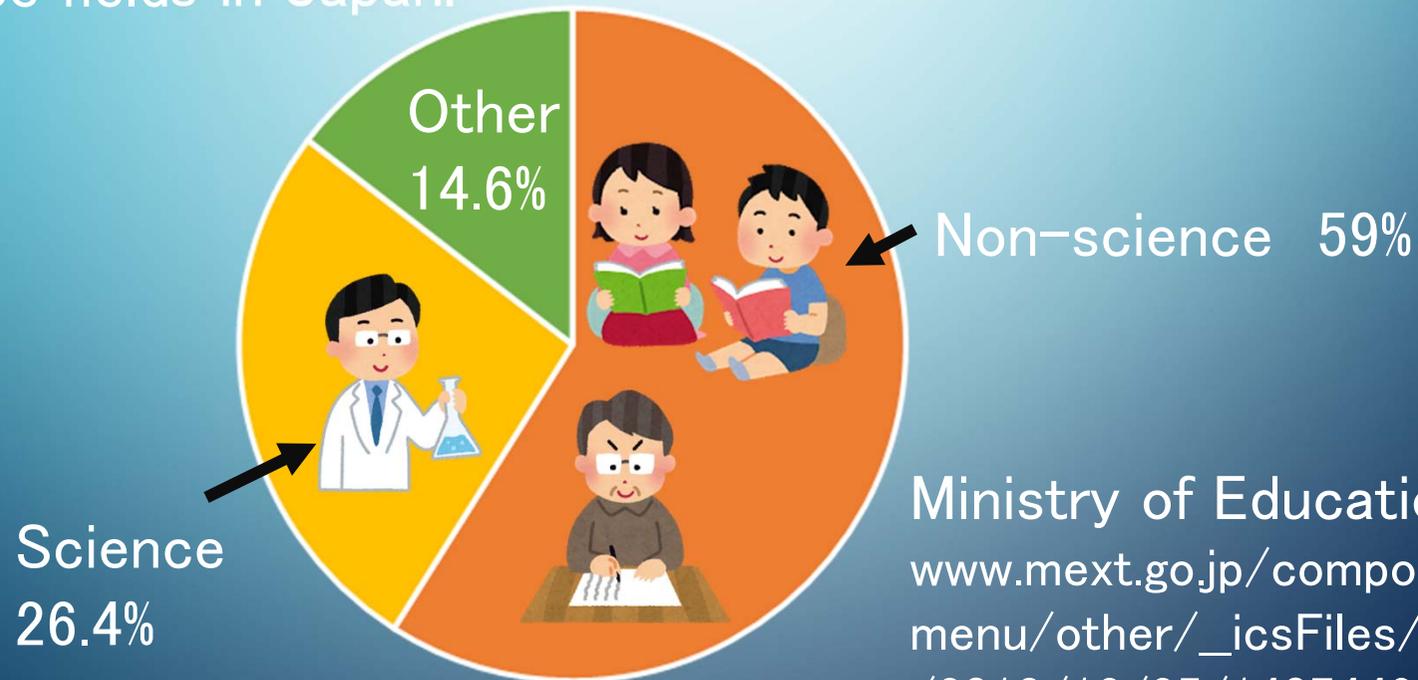
Direct teachings



ABB Single-arm YuMi

RATIO OF UNIVERSITY STUDENTS AFFILIATION

However, more students study non-science fields rather than science fields in Japan.

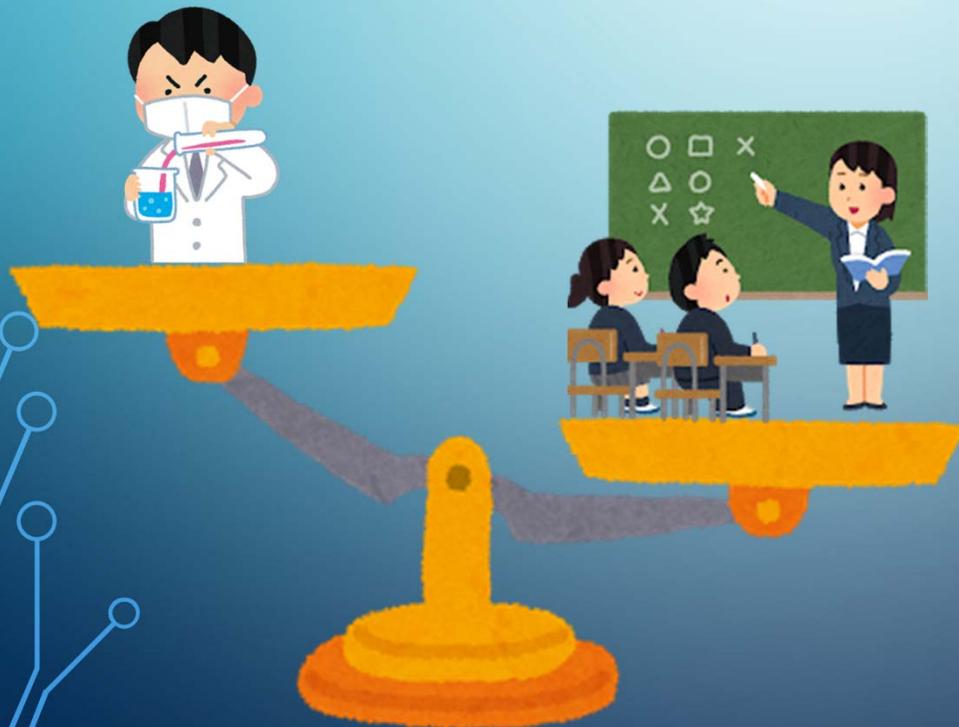


Ministry of Education

www.mext.go.jp/component/b_menu/other/_icsFiles/afieldfile/2018/12/25/1407449_3.pdf

WHY NON-SCIENCE ?

Experiment courses are decreasing



Students usually study science by only text.

WITH MORE EXPERIMENTS ?

Some students don't understand well in the class.

Some students have questions.



Experiments



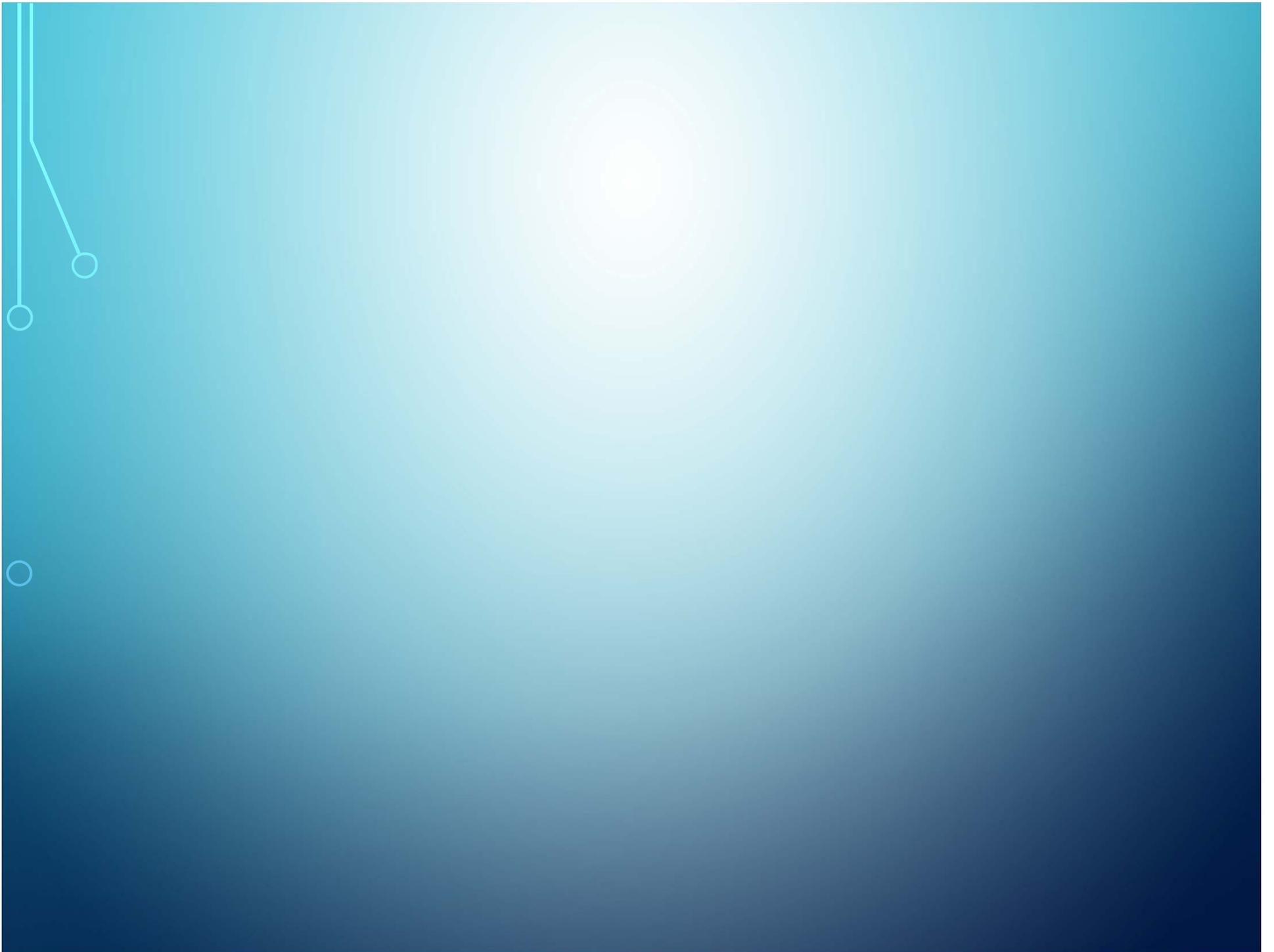
Students will understand very well.



Students will acquire an ability of solving problems.



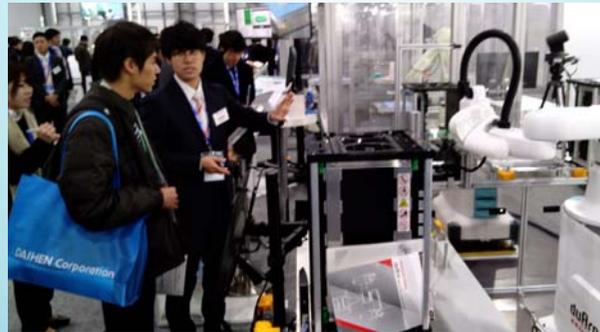
Students enjoy science.



OUR DREAM

We have studied a lot of things in

IREX[®]
2019
INTERNATIONAL ROBOT EXHIBITION



We have decided to continue teaching robotics to children.

We hope lots of children will contribute to robotics advancement.

Thank you for your listening, and we appreciate all of you.