

Takeshi IIMOTO
The Univ. of Tokyo

International Open Seminar Improvement of **Risk Literacy** Based on **STEM** Education Focusing on **Radiation**

Day and Time

March 29 (2017), 200pm – 530pm

Place

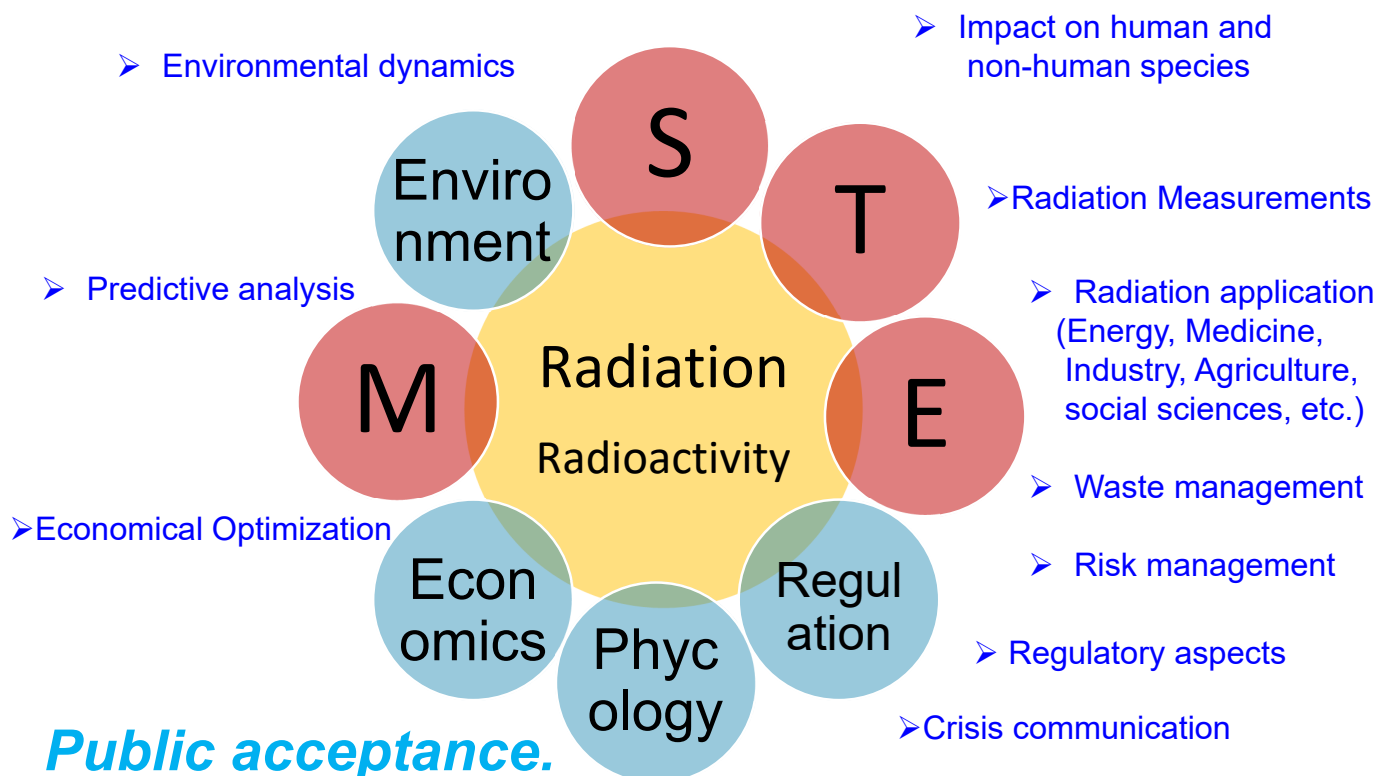
The University of Tokyo

Lecture room in Faculty of Engineering, Bld No.11

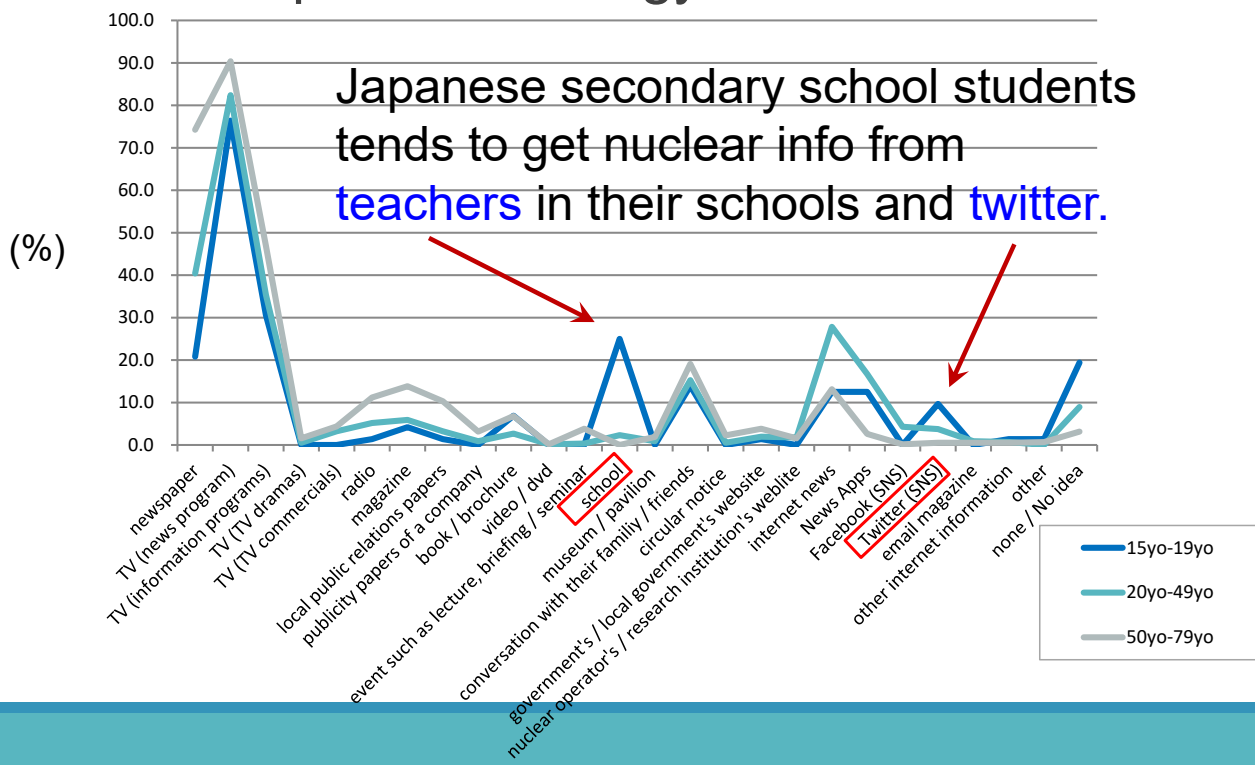
(7-3-1 Hongo Bunkyo-ku, Tokyo, Japan)



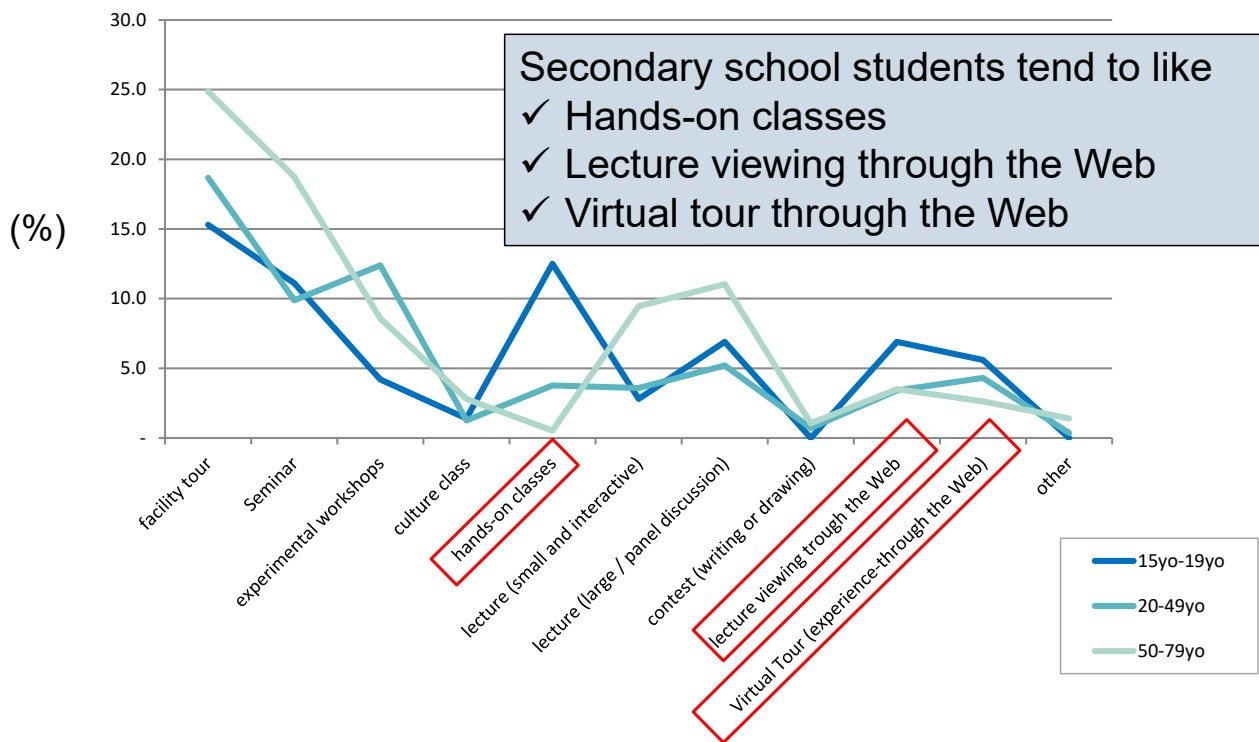
Keywords of **Radiation** Relating to “**STEM**”



How do students usually get the information on nuclear power or energy?



Which activities in nuclear science interests you?



The WOW factor

- We are trying to insert “WOW factors” into our education modules and have been sharing our experiences with the pilot countries in the TC activities.
 - ▢ hands-on classes, including assembling cloud chamber, and environmental radiation survey (to understand risk level)
 - ▢ movies of lectures and virtual tours on Website to motivate and support teachers as well as students...

RADI; <http://www.radi-edu.jp/en>

Motivate!



Fun!!



Enjoy!!!

Two-hour radiation education programme for secondary school students an example

Part I Lecture (60 min)

- 5 min - Program explanation
- 45 min - Basic radiation lecture
 - + Radiation and dose surrounding us
 - + Radiation application
 - + Radiation and Radioactivity
 - + Radiation type
 - + Half life
 - + Unit of Bq and Sv
 - + Human effect
 - + Radiation protection
- 10 min - Break time



Part II Two Experiments (60 min)

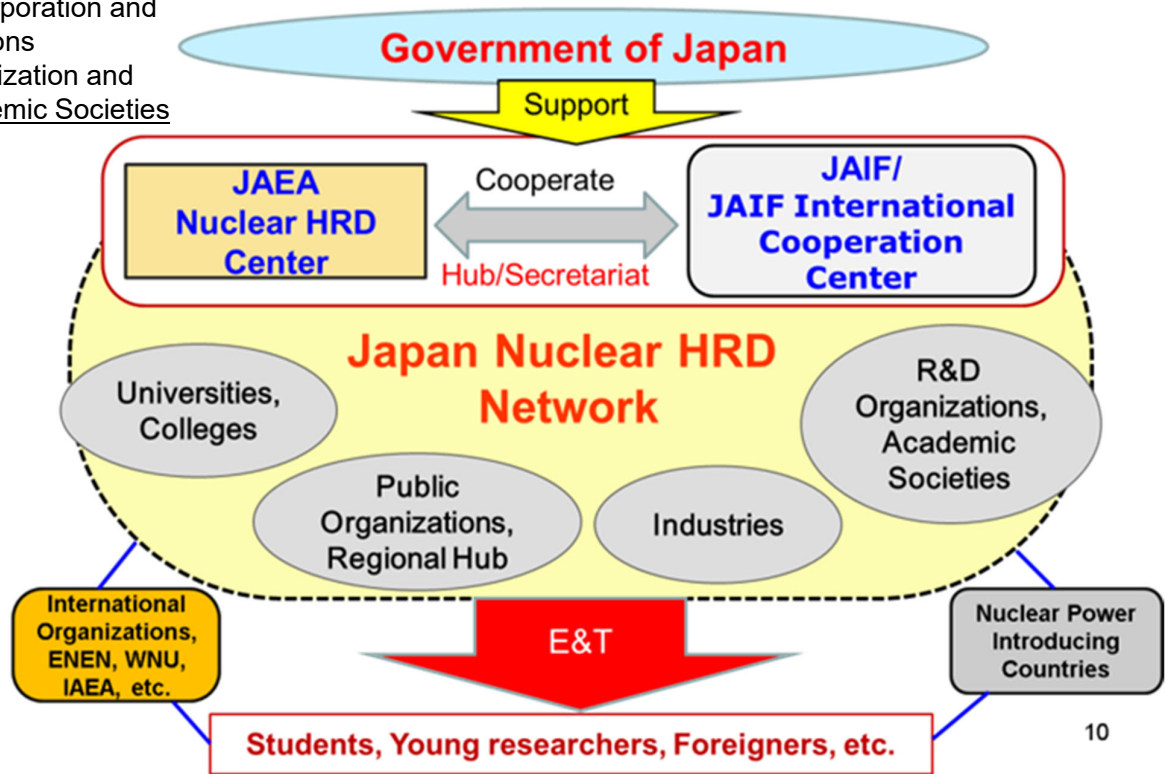
- 20 min - Cloud chamber observation
 - + Pouring ethanol; 5 min
 - + Cooling time by dry ice; 5 min
 - + Observation; 10 min
- 30 min - Environmental survey by a radiation detector
 - + Instruction to use survey-meter; 5min
 - + Surveying activity; 25 min
- 10 min - Conclusion



- Organizations of JN-HRD Net**
- 5 Governmental Ministries
 - 25 Universities and colleagues
 - 18 Manufacturers and Power utilities
 - 18 Related corporation and associations
 - 4 R&D-organization and academic Societies
- Total 70

Japan Nuclear HRD Network

- JN-HRD.net.-



10

Team JAPAN for the IAEA-TCP

Takeshi IIMOTO Dr The Philippines, Indonesia, Malaysia, Thailand, Sri Lanka	IAEA expert / Associate Professor	Div. for EHS, The Univ. of Tokyo
Tomohisa KAKEFU Mr, Malaysia	Instructor	RADI, Japan Science Foundation (JSF)
Takehiro TODA Mr Sri Lanka	Engineer / Instructor	Development Division, RADO co.,ltd.
Itaru TAKAHASHI Mr The Philippines	Instructor	Japan Atomic Energy Relation Organization (JAERO)
Rieko TAKAKI Ms Indonesia, Thailand	Instructor	Energy Communication Planning (ECP)

International Workshop (Mar. 27-30, 2017) for the **Preparation of Standard Education Programmes and Modules** on Nuclear Energy and Radiation Application for Secondary Schools

- ✓ To discuss and prepare standard education programmes and modules for secondary schools, which will be used in the next stage of **IAEA-TC Project from 2018**
- ✓ Brain storming the commonalities in the curriculum of the participants for the input to the preparation for **Regional NST Curriculum Framework**
- ✓ To discuss the tools for **Assessments** of the proposed Regional project of TC Programme
- ✓ To discuss the inclusion of contents having the “**WOW factors**” as well as **risk information** in the programmes/modules

Host and Cooperation for WS

- ✓ Hosted by **The University of Tokyo**, financially supported by JSPS Grants in Aid for Scientific Research (**KAKENHI** KIBAN(A)) ID:JP16H01813 “**Development of Systematic Improvement Method of Risk Literacy Based on Global Communication**”
- ✓ In Cooperation with the International Atomic Energy Agency (**IAEA**) under the **TC project RAS0065** “**Supporting Sustainability and Networking of National Nuclear Institutions in Asia and the Pacific Region**”
 - Text books, education movies, and experimental tools for IAEA-TCP
 - RADI project, operated by Japan Science Foundation (**JSF**)
 - Japan Atomic Energy Agency (**JAEA**)
 - **Kashiwa City** local government office and **Clear-pulse** co.