

# ASEA 2011:Asia Science Educator Academy

*November 29 – 02 December 2011 in Seoul, Korea*

## Japan ACTION PLAN



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**Part 1:**

# **Intro & e-Scan**

Team and Education Environment

# 1. Introducing **Japan** Team: Delegates/Speakers

## Dr. Nobuo UENO

- Professor of Department of Nanomaterial Science, Graduate School of Advanced Integration Science, Chiba University
- Chairman of JSEC Judging Committee

Speaker? (Y)

Hobby:

Star Watching

Email:

uenon@faculty.chiba-u.jp



## Mr. Hiroshi OKUDA

- Chair, Super Science Committee, Shibaura Institute of Technology Kashiwa Senior High School
- JSEC Judging Committee Member

Speaker? (N)

Hobby:

Photography

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## II. Japan Educational Environment

What is the status of STEM or STEAM in your country?

a) Is there a STEM or STEAM policy? If yes – Please mention top 2 prominent features

■ Basic policy on Science and Technology

- (i) Developing human resource in science and technology
- (ii) Strengthening society-wide joint efforts for education

b) Is there a defined STEM or STEAM curricula? Please detail its relevance to Japan has governmental curriculum guideline

- (i) Focus on research based methodology to promote scientific enquiry  
In the recent revision, enhanced observation and experiment class to foster scientific approach and ways of thinking
- (ii) Focus on enquiry based learning  
Foster thinking skills through hypotheses building before the experiment and analyses and interpretation of the results

c) How is the country looking at developing STEM or STEAM Education?

It is extremely important for Japan to foster and secure human resources in science and technology and promote their activities in order to be a world leader in science and technology even with its population decreasing.

# III. Japan STEAM Education Challenges

- Outline top 3 key obstacles & challenges in your country esp on STEM or STEAM Curriculum and Policy Initiatives which will help you focus when you build country action plan later:
- Rapid decrease of the math/science achievement level of students after the 1990 curriculum revision
- Compared with average, “The ratio of students who think study as fun.” is remarkably low in Japan. (TIMSS 2007)
- Research-based learning is unpopular in science education
  - Few teachers have experience in project-based learning
  - Not enough class time for project-based learning
  - Entrance examination focused classes

**Part II:**  
**Country Action Plan**  
Advancing STEAM Education

# 0. Action Plan Guidelines

- This is your working document and the questions which need to be discussed are:
  - What do you want to accomplish with STEAM in your country?
  - Who is going to do what?
  - When is it going to get done?
  - What resources did you see this week that you'd like to adapt for use?
  - What resources do you need for your plan?
- Tell us what helped you most, what is missing, and what needs improvement
- As you work, post your Action Plan on the Ed Academy Community so that others may observe your work ([www.inteledacademy.org](http://www.inteledacademy.org))

# I. High Level Goals

## 1. STEAM CURRICULUM

### Long term goal:

- Disseminate “Science Literacy for All Japanese”
- Promote project/research-based learning for the 21st century in elementary and secondary schools
- Promote cooperation among industry, schools, the government and mass media
- Create “cool” scientific heroes/heroines (“Young Scientist Awards” from Japanese students!)

### Short term goal:

- Enhance a network of passionate science teachers
- Align affiliate fair standard to global standard
- Start core Private Public Partnership collaborations in local community

## 2. STEAM POLICY

### Long term goal:

- Promote society-wide joint efforts

### Short term goal:

- Learn how to prepare well-designed presentation by a point of Art

## II. Objectives

- How will you know you succeeded?
  - More participants for science fairs in Japan
  - Improved project quality more (understanding by judgment)
  - Active local Private Public Partnership collaboration
- Please list the results you want to see;
  - Increase the # of project participation (high school) by 30% in 5 years
  - More grand awards at Intel ISEF (1 Intel Young Scientist Award in 5 years)
  - More media exposure (TV & Newspaper)
  - Sustainable local workshops/teacher training
  - Send teachers abroad (for example to ISEF)

# III. Reflection on ASEA 2011

- Highlight what the team felt was the key learning
  - Working group discussion: evoked good discussion (chance to understand problems in each country)
- Which presentations are the most beneficial for your team?
  - Shop Talk, I, II, III
- Which posters were the most beneficial for your team?
  - Thailand
- What types of presentations/posters/activities were missing?
  - How countries are positioning Science Olympiad and research based competitions? Which is more popular?

# V. Continuing The Momentum Built;

## ASEA2011 Next Steps & Call for your participation

- One of key goals of ASEA 2010 and 2011 was to sustain the network among participants and collectively move forward to support STEAM education and capacity building of educators across Asia through a consortium.
- The consortium would serve as an advisory regional body that identifies common areas of need and focuses on specific strategies that improve the teaching of mathematics and science; thus fostering innovation in students.
- Goal: To nurture a systemic approach to experimental sciences for fostering innovation – ‘Empowering Lives Building Futures’
- Objectives of the working groups:
  - Promote and nurture science and scientific research in Children
  - Enhance Professional Development for Science and Math Teachers
  - Catalyze STEM policies

# V. Continuing The Momentum Built; ASEA2011 Next Steps & Call for your participation

- Will your country like to Lead/Participate in 1 of the working groups?

Maybe

- How would you like to contribute/volunteer for this activity?

As active members

- What would you recommend as an action point this working group can achieve?

Will be presented by the chair of the WG

- What would you recommend as the meeting plan for this group?

## VI. Optional Pictures Slide



We could learn many. Thank you!