

APEC Workshop on Promoting Women and Girls' Participation in STEM

Meeting Minutes

- Date: 2017. 10. 24- 10. 27
- Host: Department of Gender Equality, Chinese Taipei
- Organizer: Foundation for Women's Rights Promotion and Development

Day 1, 10/24, Opening and Workshop



Keynote Speech



Amy Chen, L'Oréal Taiwan, Headquarter, Chinese Taipei

Amy Chen mentioned that in Taiwan, parents still have prejudice of that male performs better in science than female, doubting the capability and suitability for girls to pursue science, and concerning about the impact on family and marriage life, though it is improving gradually. To promote and support women and girls in science, L'Oréal establishes "Taiwan outstanding women in science (TOWIS)" award to honor

splendid female scientists and set role models for young women. L'Oréal also published a book called "They are amazing" to make the stories of TOWIS winners to be heard.

In empowering youth, L'Oréal also holds the "Girls high school science program" with WCS foundation, and in 5 years there were over 5,000 students participating this project. In the past 10 years, the proportion of women major in science and technology has increased by 3%. Though the change is small, Chen still believes that only when we still try our best will the world become better for every woman and girl.

Session 1: Support Systems for Women and Girls in STEM



Supapan Seraphin, Senior Advisor, National Nanotechnology Center, Thailand

Supapan Seraphin shared about her life story with us. Her family has five daughters and one son, and her parents paid most of the attention on the only male child though most of children are female. When she went to Japan for graduated school, her teacher discriminated against her for unmarried, and she were asked to serve tea and coffee at seminar, be treated as a server rather than a student.

Although experienced so much discrimination, Seraphin highlighted that "what doesn't kill you makes you stronger," and kept working hard on her academic career. She encouraged us that we should believe ourselves, build our own supporting system, and keep proper perspectives and work-life balance.



Meenam Shinn, President of Doosan Corporation, Republic of Korea

Meenam Shinn mentioned that the ratio of Korean women in STEM has increased from 0.3% in 1986 to 37.3% in 2016, especially in life science and math fields. The progress was owing to the third fundamental plan executed by government, vision of which is promoting economic innovation through science and technology driven by Gender Equality.

The budget of science and technology has increased by 81% from 2015 to 2016, and Shinn mentioned that next issues need to be solved include ensuring sustainable government, implementing government initiatives, such as gender ratio in decision-making committee, and to private sector, and cooperating continuous with other APEC countries.



Leonie Walsh, Inaugural Ambassador of Women in STEMM Australia, Australia

Leonie Walsh reminded that though the entire employment of women has achieved 50%, we still need to carefully inspect gender ratio in each industry because the result can be very diverse from nearly 80% in health care industry to 10% in construction industry.

Walsh also shared some examples of supporting system in Australia. The association “Women in STEMM Australia” executes a few of program, like “Inspiring Women Program” which funds Victorian women to pursue their career in science, “Science in Australia Gender Equality (SAGE)” which cooperates with universities and research institutes in Australia, examining them and give advises about promoting gender equality in STEMM, and “STARPortal” which focuses on youth.

Session 2: Innovation and Entrepreneurship – Conquering Isolation to Achieve Success



Sylvia Kegel, German Association of Women Engineers (DIB), Germany

Sylvia Kegel first mentioned that women faced lots of stereotypes in leadership, STEM fields and the power of own initiative. “We have to fight with them, but don't mix them up, we should tackle them separately”.

Kegel also shared the achievements of Kompetenzz, the non-profit organization to promote gender equality in STEM in Germany. They have held “Girls Day” since 2001 and “Boys Day” since 2006 to promote the youth in STEM, and the participation of girls have already been 1.8 million. The other project is “Go STEM”, cooperated with more than 250 institutional partners since 2008, to promote women in STEM industries. The achievement of Kompetenzz is significant that the ratio of women starting their studies in STEM fields has increased to 30%.



**Leah Alvino Macatangay, Dean of College of Engineer,
Central Colleges of the Philippines, the Philippines**

Leah Alvino Macatangay first revealed the statistics from the Philippines from 1990 to 2010 that the ratio of men worked in science and technology has increased from 50.6% to 54%, but the ratio of women has decreased from 49.4% to 46% and most of them worked in nursing and midwifery industries.

Leah mentioned two strategies for enabling an environment, one is education and training, and the other is technopreneurship. She also gave some examples of successful women as role models in the strategies.



**Nguyen Thanh Phuong, Co-Founder, FABLAB Hanoi, Viet
Nam**

Nguyen Thanh Phuong started with an idiom “Men can build a house, but women make it a home.” to explain that women are better in team work and value the feelings of users in STEM fields. She mentioned that women build the product with their heart, which is different from men. So she founded “FabLab Hanoi” which engages in empowering women and youth to build the spirit of makers and finally become entrepreneurs.

Day 2, 10/25, Enabling Environment and Education

Inspiring Panel I – Innovative strategies that foster an enabling environment



Jane Shih, CEO of WeTogether.co and Managing Director of Girls in Tech Taiwan, Chinese Taipei

After the six-year job in Silicon Valley, Ms. Shih came back to Taiwan and founded out the lack of supporting system for women and girls in STEM fields. Then she founded “[WeTogether.co](http://www.wetogether.co)” and the “Girls in Tech Taiwan”, trying to make the environment of STEM more friendly and accessible for women and girls. She mentioned that her vision is empowering girls by STEM education, and in order to understand what students really want, she headed back to her homeland, JiaoSi in Yilan county, taught students with volunteers.

She also mentioned that "awareness", "connecting" and "executing" are three steps for girls to engage in STEM, and these are what she dedicates herself to achieving in Taiwan.



Haryoung Poo, Principal Investigator of Korea Research Institute of Bioscience and Biotechnology, Republic of Korea

Dr. Poo gave us a reference to the effort to promote women in STEM by KWSE¹ in Republic of Korea. The mission of KWSE are "expanding", "enhancing", "encouraging" and “strengthening”. For empowering the youth, they held some activities, like YWS (Young Woman Scientists) camp and Smart Sister Program, classroom lecture to reach campus, and BIEN² international conference for cross-countries network.

At last, she emphasized that the growth of GDP is strongly connect with women's participation rate across 95 countries, so promoting women to join the STEM industries is ESSENTIAL !

¹ The Association of Korean Woman Scientists and Engineers.

² The International Conference of Women Scientists and Engineers conference on BT, IT, ET and NT.



Anna Shen, Startup Advisor and Journalist, the United States

Ms. Shen touched on one of the serious problems in Silicon Valley: Sexual Harassment. She mentioned that in venture capital companies, most of the board members are men, and it makes a huge imbalance on men and women in the power of the money giver in VC, and the money requester in start-ups. Fortunately, there has been something different. Protfolia, founded in 2014, has a vision of a new model to invest women entrepreneurs. Change is not enough, but at least it is changing, and if we want to change the game, then be the ruler-changer by ourselves !

Inspiring Panel II – Innovative strategies for inspiring and spreading STEM knowledge



Chia-Li Wu, Chair of INWES – APNN, 2018-2020, Chinese Taipei

Chia-Li Wu shared the experience she worked in TWiST³. One of the important missions of TWiST is making the story of outstanding Taiwan women scientists to be known, so they filmed series of documentaries and published a book with 37 female scientists' stories. For empowering girls and boys in STEM, TWiST also published a few of picture books and handbooks, tried to promote the youth to realize their dreams in STEM.

³ The Society of Taiwan Women in Science and Technology.



Kuo-wei Cheng, Chief Editor of PanSci Asia, Chinese Taipei

In the beginning, Kuo-wei Cheng took an internet news “Dogs don’t like to be hugged by human” for an example as the reason why PanSci was founded and why explaining outcomes of scientists simplified to public is important. He also mentioned that the missions of PanSci are try to rebuilt the knowledge eco-system, stop scientific rumors, and make the true scientific answers be understood by public.

In the end, he reminded us: "Science is too important to be left to scientists alone, but scientists is also too important to be left to science alone!"



Leong Wai-Yie, Ir Assoc Professor of the Institution of Engineers Malaysia, Malaysia

Leong Wai-Yie shared the innovative strategy for retaining women in STEM in Malaysia. She mentioned that compared to other Asia-Pacific countries, the women labor force in Malaysia is lower, let alone in STEM industries.

In order to solve this problem, the ASEAN foundation has made a great effort. It cooperates with EU, funding women who want to join in STEM industries, holding ASEAN science and technology award to recognize outstanding women in STEM, and make them be the role models to women and girls.

The women engineers section (WE) of the institution of engineers Malaysia also tries their best to promote women in STEM. They publish books about women scientists in Malaysia, give speeches at school, and network with other related domestic and foreign organizations.



Magdalena Claro Larraín, Co-Founder of HackGirls, Chile

Magdalena Claro Larrain gave us a glance of women in STEM in Chile. Talents of ICT in Chile are seriously insufficient, making lots of opportunities for anyone who is enthusiastic in the field, but there are still only 4% of ICT engineers are women in Chile. Larrain mentioned that it's because ICT industry is dominated by men, lacking of female role models, and required high commitment. All of these reasons make a high wall preventing women from participating in STEM fields.

To improve this situation, Hackgirls do step by step from "low first step", "conquering fears", "eliminating prejudice", "accessing to role models" and finally to "bridging to the next steps", try to make the STEM industries accessible to women and girls who have strong enthusiasm.

Day 3, 10/26, Employment & Entrepreneurship

Inspiring Panel III – Promoting equal opportunities for women's recruitment, retention, and leadership in STEM fields



Shun-lien Sung, President of The Society of Taiwan Women in Science and Technology, Chinese Taipei

Shun-lien Sung showed the employee's point of view in her company, MRS Microword Co. Ltd. , where she is a pharmacist. The corporation concerned their employees about their partnership, work-life balance, empowerment and the transparency of management. In order to achieve these goals, they have a kitchen in their office in which employees share their lunch together. The business is also operated on cloud, which means they can work anywhere to achieve their work-life balance.



Anne Yang, Principal PM Lead, Microsoft corp., Chinese Taipei

Anne Yang mentioned about a project in Microsoft called “DigiGirlz,” which advocates everyone has potential to code. Coding is just another language and it shouldn't be the excuse to prevent women from this industry. With this belief, Microsoft executes “Inclusive Hiring” which values the passion of learning more than the previous working experience.

According to the statistic, around 20% of engineering graduates are women, but in engineering workforce only 13%. In order to elevate retention of talents, Microsoft has a policy of family leave, including maternity leave, parental leave, etc., which is better than our current regulations, and can be applied by both women and men, trying to create a friendly working environment for everyone.



Sylvia Kegel, German Association of Women Engineers (DIB), Germany

Sylvia Kegel shared her experience in DIB. DIB founded in 1986, dedicated itself to provide advices, to network, and to exchange experience for students and Ph.D in engineering in Germany, trying to build a sustainable framework and represent women engineers as a visible lobbying group and handle projects. In 30 years, the members of DIB have increased from 75 to more than 400, and cooperated with 22 local groups. The next steps of DIB are continuing mentoring and coaching on personal level, enhancing networking with WoB and global organization, and engaging more youth.

Kegel at last reminded us that “Every day you support another woman succeed, it’s a candle lit for you in the women’s glass temple.” to encourage us to keep working hard on the path.



Caroline Kuo, Sr. Manager, Talent Acquisition, Dell, Chinese Taipei

Caroline Kuo discussed about the inclusion in the beginning. The inclusion project of Dell in Asia-Pacific region includes five dimensions: Leadership & Governance, Policies & Benefits, Diverse Pipeline, Education & Development, and Internal & External Communications. All of these try to remove barriers for women to create greater opportunities in Dell, and the flexible work policy in Policies & Benefits dimension gains most praise among women employees.

Kuo also mentioned women recruitment policies in Dell. They have three dimensions: “Attraction,” shows them the ecosystem Dell has provides to support women; “Process”, in recruitment there should have at least one female candidate; “Interview Panel,” to examine if the gender ratio is balance or not. In promoting girls to engage in STEM industries, Dell also give lectures and alumni sharing in high schools. Women in Action is another important policy for supporting women and girls in Dell, and in 2017 more than 20 activities have been held in Taiwan.

Inspiring Panel IV – Defying stereotypes through entrepreneurship in the digital age



Jessica Liu, Associate of AppWorks, Chinese Taipei

AppWorks is an accelerator project in Taiwan, and Jessica Liu mentioned that they devote to creating an ecosystem for entrepreneurship to make founders willing to help each other. Among the startups they

cultivated, there 51 female founders in 320+ startups and 97 female founders in 720+ co-founders. Being aware of that female founders are difficult to get resources, AppWorks started the “AppWorks school project” for founders. For regular founders, there are 40 female applications out of 160, and for female-only class, 150 female applications have been received.



Clair Deevy, Head of Community Affairs for APAC, Facebook, Australia

Women has untapped economic potential. Clair Deevy mentioned that in Taiwan, according to their research, 1 in 2 women would like to set up their own business, and millions of jobs will be created if half of them do it. But women face some difficulties similar in different countries, like not knowing where to start, financial insecurity, lack of confidence, and not ready yet, and all of these prevent them from starting their own business. That's why “#SheMeansBusiness” created.

Started in 2016, this project aims to inspire and empower women to start a business. It provides several services like advice-providing, network-building, digital-supporting and practice-training. Up to present, the project has been spread to 17 countries, and trained more than 42,000 women entrepreneurs.

On International Women's Day this year, the project also created a global FB/IG moment featuring 24-hr of live conversations of inspiring voices from around the world encompassing key leaders, public figures and communities to discuss a variety of top topics facing women in business.



Catherine Mahugu, Founder of Wazidata and Soko, Kenya

Catherine Mahugu said that being an entrepreneur is “experiencing the deep, dark canyons of uncertainty and ambiguity, and walking the breathtaking highlands of success.” She founded Soko in 2012 of which collection is beautiful, fashionable and fair-trading. Her company aims to change the fashion industry for good. It cooperates with over 1,000 artists based in Kenya and Ethiopia, builds an artisan community to create network between them, and taking advantage of ICT technology to sell over 250,000 products

worldwide. “Be the role model of women founders”, she encouraged us to live our own dream, strive to succeed, and change the world for good.

Day 4, 10/27, Closing and Farewell

Group Presentation

I. Enabling environment



1. Networking, Empowering, Inspiring
 - Creating more communities or groups for girls who are interested in STEM (Peer support) beyond secondary school
 - Create a network resources platform
2. Program incentives
 - Incentive for teachers
 - Scholarship focus on female engineers
 - Working experience in stem
 - Women after career break back to workplace
 - Career transition programs
 - Government to bridge public and private sectors
3. Inclusive work environment
 - Leaders step out to create a more inclusive culture measures
 - Job applications to be more female-friendly
4. Role models
 - Showcase role models with specific message themes

- Stem teacher role models
 - Role models of leaders
 - Role models for breaking through challenges
 - Broaden media for communicating role models
5. Awareness and breaking stereotypes
- Training for teachers
 - Resources for parents to help guide daughters to broaden their career choices
 - Involving parents, teachers in activities
 - More science media in school
 - Creative teaching materials
 - Utilizing mainstream media
 - Communicate the importance to society

II. Education



1. Create an enabling environment
 - Platform
 - Support (Consulting, mentoring, networking)
 - Role Models (APEC best practice handbook)
 - Make STEM relevant to social issues and know how to apply in their real life
 - Empower girls to become confident and resilient
 - Educate men/boys about gender sensitivity and gender fairness

2. Improve the curriculum

- To have more hands-on, showcase, the accomplishment
 - ➡ Critical thinking skills: more opportunities for creativity and enhance problem solving skills
- Government policies to enhance the curriculum
- Public-Private sectors collaboration so the government would know how to improve
- Private sectors to help government to print clear illustrated textbooks
- Use technology to access text books anywhere, anytime online
- Flip-classroom
- Include differential teaching methodologies

III. Employment



1. To discuss:

- Train system
- Recruitment
 - ➡ prejudice to employers and coworkers
 - ➡ Discover women themselves in early age (like junior high school)
 - ➡ private-public life conciliation
 - ➡ promotion
 - ➡ don't leave before it's time to leave
 - ➡ (exit strategy) prepare for change

2. Discussed

- Fair and Transparent Recruitment
 - ➡ Skill based recruitment, no photos, no personal details
 - ➡ Measurement competence quality assurance
- Promotion and Record and Leadership
 - ➡ Promotion quota (let's call it targets)
 - ➡ Mentorship and buddy
 - ➡ Salary (difference) and specific benefit options
 - ➡ Transparent benefits rewards
- Sustainable working environment
 - ➡ Balances life and flexibility
 - ➡ Father policy
 - ➡ Life-long learning
 - ➡ Training
 - ➡ Childcare facilities
 - ➡ Enhance diverse career paths via job rotation

IV. Entrepreneurship



1. Subject priorities:

- More women in decision and policy making to influence ICT/STEM.
 - ➡ Having more women at high level decision making positions who can influence policies that enable more women to participate in ICT.

- ➡ Free programming courses, like women teach or mentor women, to encourage more women involve in the industry
- ICT/STEM opportunities to contribute to society.
 - ➡ Recognition to successful women entrepreneurship, awarding, rewarding the women
 - ➡ People is now having good living conditions. They want to do something more than just earn-living.
- Many possible ICT/STEM business exist bcz STEM/ICT is a tool to solve problems.
 - ➡ Many issues out there are needed to be solved.
 - ➡ Online businesses, flexible working arrangements, not much require finance.
 - ➡ Fast technology development, but slow application for them.

2. Discussed: More women in decision and policy making to influence ICT/STEM.

3. Create an ecosystem from the four aspect below:

- Education
 - ➡ Provide leadership courses
 - ➡ Training young generation about STEM education
 - ➡ Free programming course. Have more women teach and mentor
 - ➡ conduct mentor-mentee program
 - ➡ More training and capacity building
- Capital/Fund
 - ➡ Having more women VCs and Angel investors
 - ➡ Facilities and financial aids
 - ➡ organizations supporting women through resources, training, sharing experience
 - ➡ Establish networks to clients and market
- Laws/Policy
 - ➡ Banks to provide funds to women led businesses
 - ➡ Implement laws that encourage women representation in parliament
 - ➡ Friendly and favorable workplace
 - ➡ Hire more women in executive level and board members
- Society
 - ➡ Family support and education
 - ➡ Highlight women role models
 - ➡ community/local groups that women can be inspired
 - ➡ Social media awareness, eg. #shemeansbusiness
 - ➡ Global foundation to conduct global events
 - ➡ Change in male perceptions and attitude about women