

FOSTERING THE SCIENCE COMMUNICATION TO THE PUBLIC THROUGH THE NIST-WIST SCIENCE COMMUNICATORS TRAINING PROGRAM

Dr. Ju-Young Min

National Institute for Supporting Women in Science and Technology (NIS-WIST), Korea

SCTP (Science Communicators Training Program) Scheme by

Prof. Jhon, Gil Ja, Director General, NIS-WIST

Prof. Lee, Hei Sook, Director, Main Center of WISE

Prof. Lee, Kong Ju Bok, Chair of the Planning and Coordination Committee, NIS-WIST

Ms. Kim, Young Sook, General Manager, NIS-WIST

Abstract

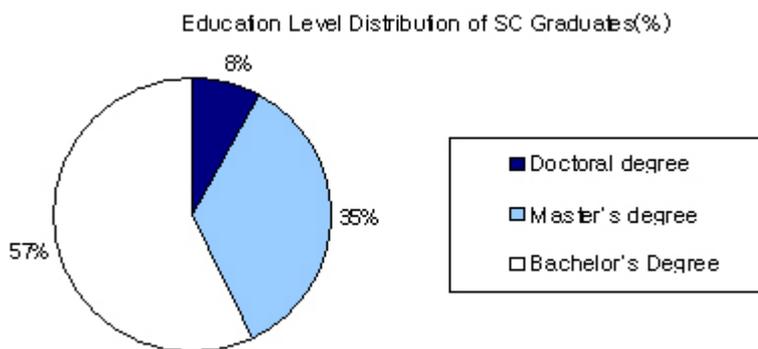
The National Institute for Supporting Women in Science and Technology (NIS-WIST)¹ of the Republic of Korea has been running the "Science Communicators Training Program (SCTP)" since its launch in February 2005. The SCTP is comprised of courses focused on enabling women with advanced science and engineering education including unemployed, returning and retired with skills such as basic science, perception and psychology pedagogy and performance planning and writing, through which they can convey their scientific knowledge to the public. Over fifty people have completed the courses throughout its two runs in 2005, of which 42.9% are comprised of masters and doctoral degree holders. Currently, 85.7% of graduates are employed, of which 81% have been given the opportunity to create a new position called 'SC (Science Communicator)' in various institutions backed by the recommendation of the NIS-WIST. It is our anticipation to discover highly-educated women in the science and technology (S&T) field, enabling them to enter and actively progress in S&T careers as their contributions are also committed for the spread of science popularization and fostering the public understanding on science.

1. Background and Introduction

¹ NIS-WIST (National Institute for Supporting Women in Science and Technology, Republic of Korea) has launched in accordance to Article XIV, Clause 2 of the "Act on Fostering and Supporting of Female Scientists and Technicians." Having been officially designated and supported by the Ministry of Science and Technology of the Republic of Korea, NIS-WIST operates and manages educational and consultative services on information, training, career development, networking, research, policy recommendation and publicity at national, regional and international levels.

Due to the increase in demand for highly educated workers in accordance to the upgrade of the industrial structure, the ratio of students in S&T study courses in universities accounted for by women increased from 18.4% in 1990 to 32.2% in 2005. In addition, the specific fields into which women were venturing were also becoming increasingly diversified. The increase in the ratio of women graduates of the engineering colleges of those universities from 1.3% to 19.3% is especially notable.²

However, a proportionately small number of women are continuing their activities into the work field. The employment rates for women graduating from science and engineering fields in 2005 were 48.4% and 52.7% respectively, showing that only one out of every two women were being employed. The graduates of the NIS-WIST SCTP were highly educated in science and technology, with 34.7% and 8.2% each of holding masters and doctoral degrees. They were also found to be mostly job-seekers that were not currently pursuing a career (Table 1). This presents evidence to the loss of national human resources in S&T caused by the underrepresentation of women with S&T degrees who are being invisible or are not being utilized to their full potential. This is not merely a problem of failure to gain returns on educational investment, but is undermining the competitiveness of the country and companies.³



<Table 1>

In this regard, the NIS-WIST's SCTP has been providing an opportunity for various groups of women with S&T degrees. Trainees who have completed the courses for SCTP are actively working in various regions around the country contributing to the nationwide spread of the communication on science to the public.

² 「"Statistical Yearbook of Education"」, 1990 & 2005, Ministry of Education and Human Resources Development, Republic of Korea

³ 「"Employment Outlook"」, June 2001, OECD

2. Objectives and Strategy

NIS-WIST approach to science communication is focused on contents, human resources and popularization. The contents approach is for communication to the public and the key to the NIS-WIST's SCTP is to develop science and technology education contents. NIS-WIST finds that the opportunities of networking, exchange, collaboration and joint research for developing contents should be provided to those who are actively involved in science communication as well as to the NIS-WIST initiative for women in S&T. NIS-WIST is considering to develop scheme on launching 'S&T Education Contents Development Center' to foster the initiative.

NIS-WIST's HRD strategy in terms of science communication is to support science educators and communicators in building professional skills. NIS-WIST provides services on workshop, lecture, seminar and training to strengthen their capabilities on teaching and communication to the public. The SCTP should contribute in attracting more women into the NIS-WIST initiative for placement and career development and now it is one of the most popular courses among the NIS-WIST provided training programs for recruiting human resources for science communication.

As the NIS-WIST's SCTP should be the officially certified courses for recruiting key women resources for science education and communication, NIS-WIST is also required to develop an additional strategy to popularize the SCTP nationwide corresponding to the nationwide popularization of science communication. As NIS-WIST is the national hub located in Seoul, the capital of the nation, developing the launch of its regional hubs is critical for promoting active interaction through off-line courses at regional level. NIS-WIST has been also running pilot programs through public subscription at regional level and the nationwide popularization of the courses will start to catch fire from the point where the regional institutes begin to launch from the end of 2006.

A short-term objective of the NIS-WIST's SCTP is to train and recruit lecturers, teachers, communicators and coordinators for the 'Public Science Classes' which is one of the government initiatives for the nationwide science popularization and the mid and long-term objective lies on building concrete supply and demand relations corresponding to the needs.

3. Curriculum and Methodology

The courses for the NIS-WIST's SCTP have been managed into introductory and advanced level. The twelve week introductory level presented 3 stages of practice on basic, on-the-spot and project training. The basic practice course leads trainees to not only focus on science, but on subjects such as child psychology & pedagogy and performance planning, in order to promote fun and easy ways to convey scientific knowledge to the audience. For the on-the-spot training, trainees participate as assistant teachers in government initiated public science classes managed by the Korea Science Foundation, research training courses operated by the Seoul National Science Museum and the 'Ggumnamu(kids with potential) Academy' of the YMCA. The project training is conducted in the form of performance and play with a scientific theme based on the basic courses for practice such as science play, scientific experiment performance and science magic with following reports regarding field trips to science museums.

The advanced training takes eight weeks in intensive manner targeting those trainees who are complete with the introductory level. Focused on fostering specialized SCs with expertise, the SCTP advanced requires additional credits on science journalism, astronomy education and scientific experiment education.

And as for options, trainees both including introductory and advanced can take a course for computer practice for eight weeks for free of charge in addition to the requirements. NIS-WIST also invites lecturers to provide opportunities for encouraging spirit, sharing and networking.

4. Raising Issues and Limitation

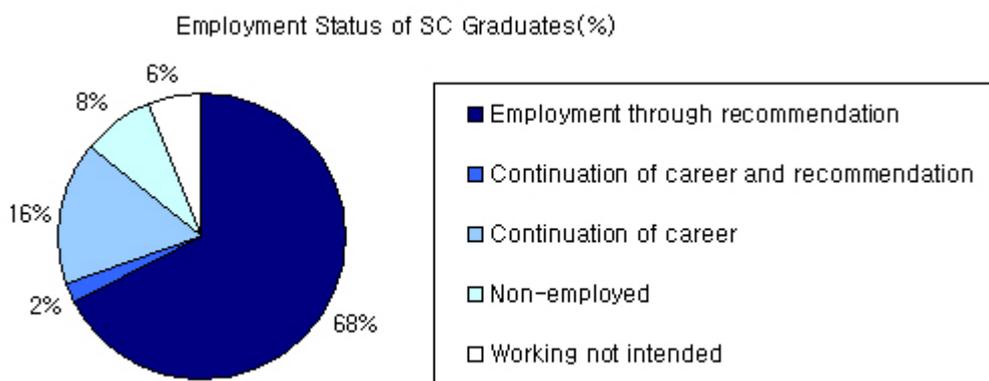
Upon the initial success of the SCTP, NIS-WIST also developed an additional strategy to popularize the program nationwide as part of its efforts to establish a foundation for the popularization of science culture and spread science experiment-based education. The Chungcheong Province project is headed by Chungbuk National University and the Northern Gyeongsang Province and the city of Daegu region by the Food Life and Chemical Department of Daegu University. Currently, the SCTP is only being carried out in two regions centering on metropolitan areas. It is our hope that potential women in S&T outside of those regions are soon given the opportunity to join the NIS-WIST initiative.

Following the trends of knowledge-concentration, the future industrial structure is expected to become further advanced and as a part of the advanced training of the SCTP, NIS-WIST is to introduce courses for ICT training linked with the field of robotics which is one of the highlighted hi-tech industries of the future. This will enable women in engineering to actively participate so that they are promoted to be the

teachers and communicators in the field. NIS-WIST is also taking environment and energy into its consideration for developing next courses.

5. Conclusion and Recommendation

Currently, 85.7% of the trainees who completed the SCTP are contributing to the creation of a new professional position called SCs, as science lecturers, commentators, curators and coordinators in the government initiated public science classes, science museums and parks, etc (Table 2). In addition, scientific experiment-based training at various institutes utilizing highly-skilled women in S&T contributes greatly to establishing a foundation for bringing science closer to the masses, and invigorating science education, which is being pursued as a national-level project.



<Table 2>

The NIS-WIST will continue to exert efforts to shift the focus of science education towards research and experiments, contributing to an experiment-centered science education that is not being adequately provided through the public education system. In addition, policy support will be necessary in order to induce participation of SCs with expertise in operating the government initiated 'After-School Class' activities, which is being pursued in line with measures to invigorate public education and resolve imbalances in the access to education.

6. Reference

- [1] 「Annual Yearbook of Education」, Ministry of Education and Human Resource Development (1990, 2005)
- [2] 「Employment Outlook」, OECD (June 2001)
- [3] Kim Y. O. et al. (2002), 「Demand and Job Development for Women Workers in a Knowledge-based Economy」, Korea Women's Development Institute