

# Gaining New Ground Through **IT**



SCIENCE EDUCATION INSTITUTE



# Accomplishments

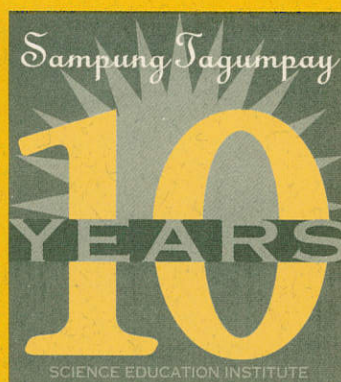
## *A Decade of Accomplishments*

The Science Education Institute has reached a milestone this year. It has turned 10, and it is proud to say that within this short period, since it was organized in 1988 by virtue of Executive Order 128, it has made very substantial inroads in science and technology education in the country. It was able to sow the seeds necessary in promoting, developing and improving science and technology education and training in the Philippines. Thus, it has helped the phrase "knowledge is power" become a reality in the country.

Through these efforts, the Philippines can say with more confidence that it has carved a niche in the community of countries ready to face the challenges of the science-and-technology-advance new millennium.

Among its accomplishments were:

- Established leadership role in science education
- Implemented the Science Scholarship Act of 1994 (Republic Act 7687) and the Act Further Strengthening the Science and Technology Program of the Government (Republic Act 8248)
- Formulated the S&T Education Plan (STEP)
- Upgraded teacher capabilities in science education through degree and nondegree programs
- Upgraded and modernized laboratory equipment/facilities of selected teacher-training institutions, 110 S&T-oriented high schools and other priority schools
- Developed and launched the Mobile IT Classroom
- Participated in the implementation of the Third International Mathematics and Science Study (TIMSS)
- Supported innovative programs in science education through
  - technology-based curriculum
  - doctoral enrichment program
  - Ph. D. program in science teaching through distance education
  - model S&T-enriched curriculum and instructional materials for high schools
  - innovative curricula for certificate and diploma programs
  - Continuing Science Education via Television (CONSTEL)
- Supported Philippine participation in international youth competitions
- Maintained the STEdNet Home Page and SEI Home Page



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# Director's Message

The year 1998 was very significant for the Science Education Institute. It was the year when SEI turned 10. A decade when the strong foundation of science and technology education was built to prepare for the challenges of the next millenium. A decade when SEI was able to carry out significant programs toward the continuous task of improving science education.

Worth mentioning are the milestones that were achieved during this period. It was able to: establish leadership role in science education; implement the Science Scholarship Act of 1994 (Republic Act 7687) and the Act Further Strengthening the Science and Technology Program of the Government (Republic Act 8248); formulate the Science and Technology Education Plan (STEP); upgrade teacher capabilities in science education through degree and nondegree programs; upgrade and modernize laboratory equipment/facilities of teacher training institutions, 110 high schools utilizing the enriched S&T curriculum and other priority schools; develop and launch the Mobile IT Classroom (MITC); participate in the implementation of the Third International Mathematics and Science Study (TIMSS); support innovative programs in science education; support the country's participation in international youth competitions; and maintain the Science Technology Education Network (STEDNet) Home Page and SEI Home Page.

For SEI, 1998 is again a banner year for the following reasons: the success of its scholarship program was proven by the increasing number of its scholars, which has reached 11,092 under the Science Scholarship Act of 1994 and the other undergraduate scholarship programs; the information technology has reached rural Mindanao with the launching of the MITC; the STEDNet was established; more Filipino students bring honors to the country by winning in international awards; and the Scholarship Program Administration System (SPAS) Phase II was completed.

With the support of the national government, legislators and private institutions, SEI will continue to make strides in developing S&T education in the country. Indeed, the future of S&T education in the country will surely be bright.



*Ester B. Ogena, Ph.D.*  
*Director*  
*Science Education Institute*

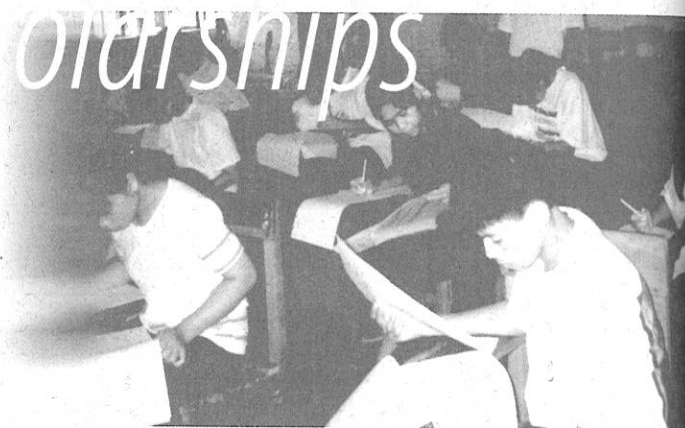
# 1998 Highlights

## ***Support to 11,092 Scholars Under RA 7687 and Other Scholarship Programs***

The Science Education Institute has been supporting an increasing number of scholars. In 1998, it supported a total of 11,092 undergraduate scholars in science and technology courses. Of these, 9,514 were supported under Republic Act 7687, or the Scholarship Act of 1994, and 1,578 under other undergraduate scholarship programs.

## ***Launching of the Mobile Information Technology Classroom (MITC)***

Intended for Mindanao, the Mobile Information Technology Classroom (MITC) aims to give opportunity to students to learn and experience information technology through hands-on activities in science and mathematics lessons. In June, a training was given to science teachers/facilitators from Caraga region who will be involved in the MITC.



## ***Establishment of Science and Technology Education Network (Stednet)***

SEI made initiatives in establishing databases in science education. This is in coordination with selected universities, where science education is offered as a program of specialization, and other government agencies whose data are relevant to science education.



Two kinds of databases were developed. The first database consists of 598 abstracts of researches in science education largely culled from theses and dissertations of graduate students in science and mathematics education. The second database consists of processed data in the form

of 453 graphs and tables, like those on employment, student achievement and enrollment and graduation rates.

This project provides users the ease and convenience in gathering data. The databases could also be used as basis by policymakers in developing policies related to science education.

PHOTOS:

1. *Highschool students taking RA 7687 scholarship examination on November 8, 1998*
2. *Mobile IT Classroom (MITC)*





### ***Filipino Students Garner Awards in International Tilts***

Philippine student participants won awards in different international competitions. These were in:

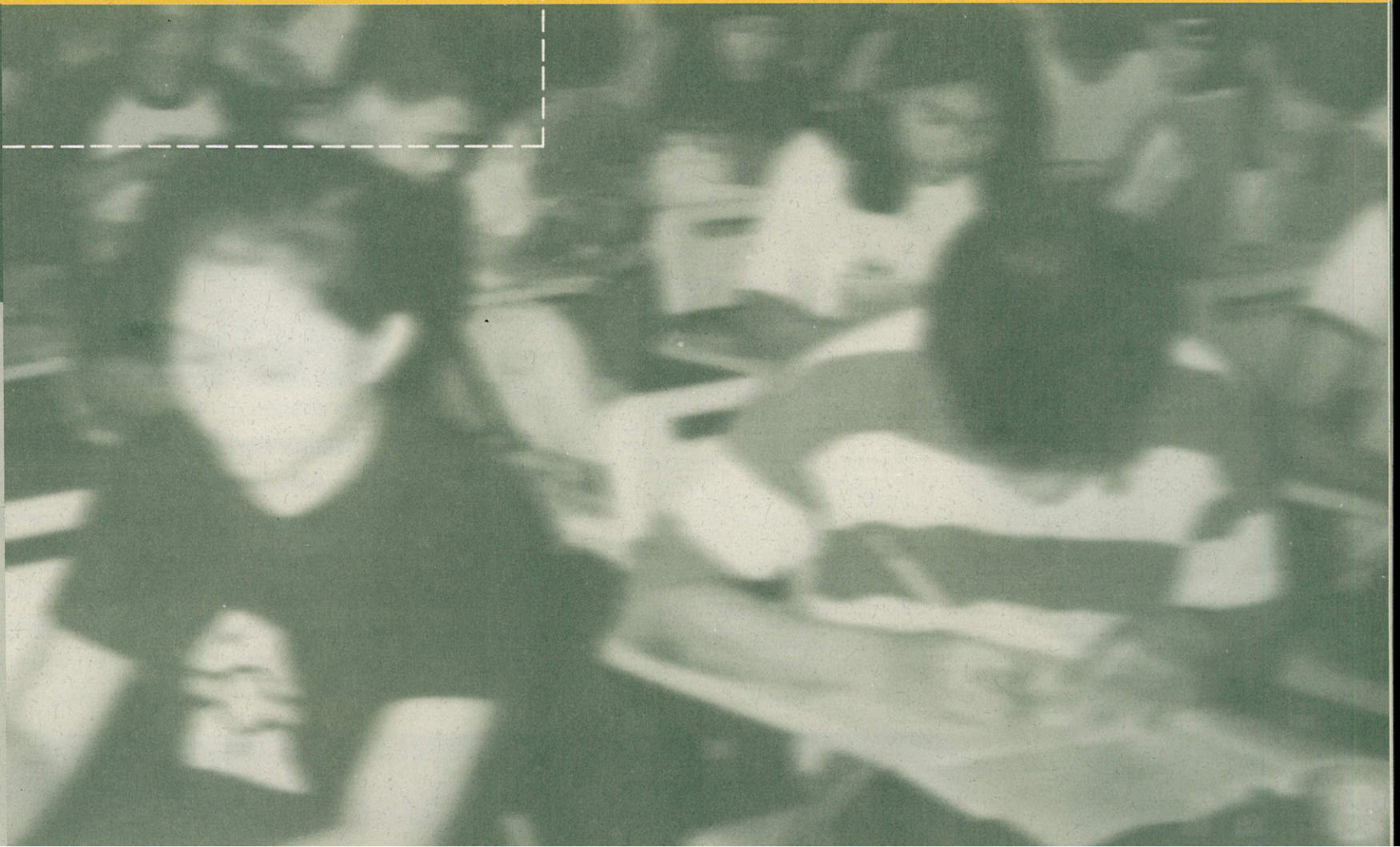
- SEARCC International Software Competition: third and fourth places;
- First SEAMEO Mathematics Olympiad: Individual: silver, bronze and consolation prizes; team, fifth prize;
- Asia-Pacific Mathematics Olympiad: bronze and honorable mention;
- Australian Mathematics Competition: three medals, nine distinction certificates, 37 credit certificates and one special achievement award; and
- 49th International Science and Engineering Fair (ISEF): two fourth places in grand awards.

### ***Completion of Scholarship Program Administration System (SPAS) Phase II***

The year marked the completion of the second phase of development work for Scholarship Program Administration System (SPAS). The SPAS Users Training was also conducted on September 23 to 25 at SEI and covered the following: an overview of the system, discussion of screens, reports and exercises, and evaluation of the system developed. The training also served as a channel for feedback from users in the field which was used to improve report formats.



# *Science & Technology Manpower Development*







Everyone is now focused on the third millennium, a period which is already being shaped by powerful competitive drive and technology development. A period which will be defined more by brainpower than brawnpower.

The important role of the Southeast Asian region in the coming period was cited by Dr. Stephen Hill and Dr. Yasuzuki Aoshima, of the United Nations Educational, Scientific and Cultural Organization (UNESCO) Regional Office for Science and Technology for Southeast Asia, in a paper they delivered at the 65th Annual Meeting of the National Research Council of the Philippines on March 14, 1998. "Asia, as a regional entity, is believed to have the economic and technological potential to play a dominant role in the global economy of the 21st century," they said. Degradation in education and science and technology, particularly in human resources development, "may result in unrecoverable loss and delay in economic development for the future," they warned.

Dr. Hill and Dr. Aoshima stressed that "across the Asian members of the Pacific Rim, strong investment in science and technology human resource development is a major priority, as is improvement in the management of the national science and technology resources to steer the nations' science towards effective commercial application."

True to its mandate to develop the manpower of the future, that is, providing quality education in science and technology that will help lead the country to progress in the next millennium, the Science Education Institute has continued to make available various scholarship programs that have been benefiting a growing number of undergraduate students. At the same time, support programs were initiated and implemented to improve the country's manpower development.

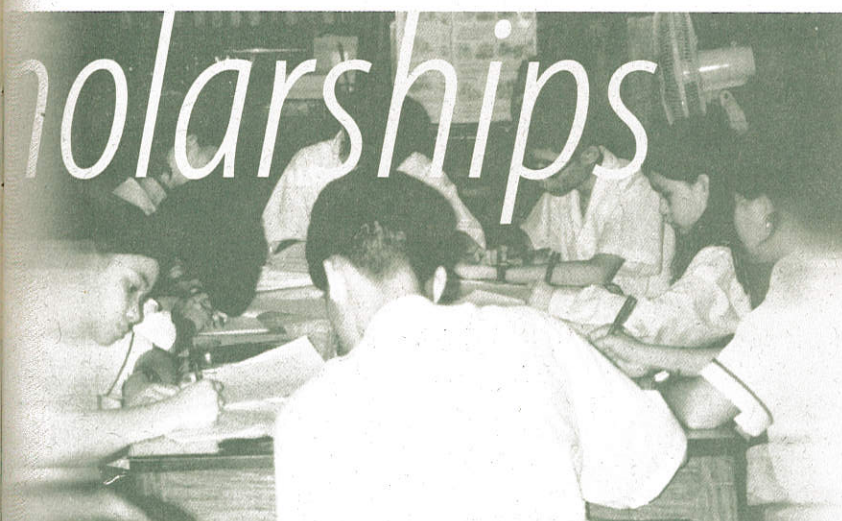


### *Science and Technology scholarships*

A growing number of students were given the opportunity to study under various scholarship programs in 1998. There are several scholarship programs available to students. These are the Science and Technology Scholarship Act (Republic Act 7687), Undergraduate Scientific Manpower Development (Project 5801), Junior Level



# olarships



Assistance Program in Engineering (JLAP), Cooperative Pre-service Education for Science and Mathematics Teachers (Project 8102 Ed), Partial Scholarship for BSE Physics, Scholarship Program for Science and Mathematics Education, Major in Physics, and the Scholarship Program for the Education of UE-BSE Students, Major in Physics.

A total of 10,595 undergraduate scholars were enrolled as of the second semester of school year 1997-1998 under the Science and Technology Scholarship Act (RA 7687) and Undergraduate Scientific Manpower Development Program (Project 5801)—9,514 under RA 7687, and 1,081 under Project 5801.

Seven hundred forty-eight of these scholars graduated in March and October 1998—628 under RA 7687, and 120 under Project 5801. Of the 628 graduates under RA 7687, 20 were in four-year BS courses, 460 in three-year technician courses and 148 were in two-year technical courses. Of these graduates, 51 graduated with honors—five cum laude and 46 with honors.

Of the graduates under Project 5801, 120 were in engineering and other sciences. Of these graduates, 33 graduated with honors—12 magna cum laude and 21 cum laude.

In recognition of the outstanding scholar-graduates for SY 1997-98, an awarding ceremonies dubbed as "In Touch with Excellence" was held at UP-ISMED STTC Auditorium on July 14, 1998.

The Junior Level Assistance Program in Engineering (JLAP) has 173 scholars—83 ongoing and 44 new—46 of whom have graduated. JLAP had a total of 143 examinees in its 1998 JLAP examination held on September 12, 1998 in six testing centers.

The Cooperative Pre-service Education for Science and Mathematics Teachers, or Project 8102 Ed, gave scholarships to 153 students. Twenty-two of these scholars have graduated. Joel Gonzaga (BSPT, magna cum laude and Metrobank Foundation Awardee) was the first placer in the 1998 Licensure Examination for Teachers (LET). Five scholars graduated cum laude in BS Physics for Teachers. They were Michael Bongyad, Kristine Mae Rodriguez, Carolina Sangga, Darius Vidallon and Vida Villa.

There were 45 scholars under the Partial Scholarship for BSE Physics. Fourteen have graduated, including DOST-SEI-SHELL Foundation scholars. Roque Aristotle Padama (cum laude and Metrobank Foundation Awardee) placed fourth in the 1998 LET.

The Scholarship Program for Science and Mathematics Education, Major in Physics (RSTC) has supported 113 scholars, 31 of whom are ongoing and 45 are new awardees. Thirty-seven have completed the course, among them are one magna cum laude and five cum laude. All of the graduates have passed the 1998 Licensure Examination for Teachers and they are teaching in public and private schools in the country.

PHOTOS:

*Applicants for scholarship taking exams*





The Scholarship Program for the Education of UE-BSE, Major in Physics, which was started in SY 1997-98, has supported 13 scholars, 10 of whom are ongoing and three are new awardees.

### ***Coordination and Monitoring of the Science and Technology Education Plan (STEP)***

In its final year of implementation, the 1993-98 STEP Progress Report was prepared and will be disseminated to the implementing agencies early next year. STEP was a complementary plan of the Science and Technology Manpower Plan and served as a guidebook for policymakers, stakeholders, legislators and implementors of the country's S&T education program.

### ***Science and Technology Human Resource Development Planning***

A research study was commissioned to the University of Asia and the Pacific (UA&P) which aimed at projecting science and technology manpower requirements in Philippine industries, and

identifying the gaps between supply and demand for the years 1998 to 2003. The study is one of the components needed in the formulation of the medium and long-term Science and Technology Human Resource Development Plan (S&T HRD Plan).

The Plan also includes science and technology manpower requirements in the government sector. For 1998, efforts were concentrated in gathering, encoding, and establishing and strengthening the database for this sector. Sources of raw data were the Department of Budget and Management and the Civil Service Commission.

Also, surpluses and shortages of science and mathematics teachers in the secondary and elementary levels were computed. These computations were made using as basis a particular approach agreed upon in a technical workshop participated in by experts from the education sector. These results, however, will have to be validated.



# *Strengthening Institutional Capabilities*







Teachers are the invaluable cog in science education. Recognizing this, DOST Secretary William Padolina said in his speech at the 1998 National Science Education Congress last November 27-28, that a rescue plan was developed to address the decades-old structural and development weaknesses confronting teachers in science and mathematics. Through this, teachers are provided all possible kinds of support, through scholarships and other programs, for their advance training in teaching science and mathematics.

# Science & Technology



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**STRENGTHENING INSTITUTIONAL CAPABILITIES**



At the same time, science education is enhanced through information technology. Emphasis is now being placed on information technology through the implementation of the National Information Technology Plan, the overall framework for IT development in the country, Secretary Padolina said.

He stressed that "we are strong and performing well in information technology." It is "one bright prospect that is open to us in the face of the lingering currency crisis." Export revenues from IT for the last three years have been on the upswing, Secretary Padolina noted in his speech at the 8th Annual Science and Technology Journalism Awards on December 8.

### ***Project Rescue Initiatives in Science Education (RISE)***

A total of 2,428 general science, biology and mathematics I and II teachers benefited from the Crash Training Program for Secondary Science and Mathematics Teachers under Project Rescue Initiatives in Science Education (RISE). From the total, 520 were provided with financial support by the DECS, 10 by the Metrobank Foundation, 300 by the DOST and the 1,598 by the DOST-SEI.

This program was designed to conduct teacher-training programs for science and mathematics teachers who are nonmajors in these subjects. The project aims to improve the teachers' competence and confidence in teaching science and mathematics.

The program was conducted in 19 selected Teacher Education Institutions (TEIs) in all regions in the country. It was conducted for 180 hours using a special curriculum developed by a group of experts in the field.

### ***Faculty Development Programs***

To improve the quality of teaching in science and mathematics, the SEI has initiated programs for teachers to enable them to pursue graduate studies or other enrichment courses.

- ***Faculty/Staff Development Program for Teacher Educators of the Regional Science Teaching Centers (RSTCs) (Residential Program)***

The Ph.D. in Science Education program is a continuing scholarship program implemented through the University of the Philippines College of Education (UPCE) and De La Salle University (DLSU). New slots are opened every year to science and mathematics faculty members of the RSTCs and other teacher-training institutions.

There are 42 on-going scholars, 21 of whom are enrolled at UPCE in Diliman, Quezon City, and 21 at the DLSU on Taft Avenue, Manila. In 1998, the following scholars completed the program:

1. Zenaida A. Ababa, Ph. D. in Science Education Major in Mathematics, Mindanao State University
2. Murray Saturnino F. Navarro, Ph.D. in Science Education Major in Mathematics, Ateneo de Davao University
3. Chona Q. Sarmiento, Ph.D. in Science Education Major in Biology, Western Mindanao State University

- ***Alternative Approach to Faculty Development Program (Distance Education)***

This is also a Ph.D. in Science Education program in Distance Education Mode which started in SY 1996-1997 at the UP Open University. The UP College of Education and University of San

#### ***PHOTOS:***

1. Teachers preparing to display their teaching materials. Project RISE '98





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Carlos in Cebu City were chosen as the learning centers, where Distance Education students come together for study sessions facilitated by a tutor. The learning centers may be located in one of the UP campuses or in a cooperating state college or university. It is also a place where Distance Education students may register and pay their fees, get their learning materials, or transact any business they would ordinarily transact with a residential college.

In 1998, there are 49 on-going scholars who came from different RSTCs and other teacher-training institutions.

- *Master's Program for Faculty Members of Selected Teacher Education Institutions*

Twelve scholars graduated from the program in 1998. Of the 12, 5 were graduates from De La Salle University, Manila, 5 from University of San Carlos, Cebu City, and 2 from the University of the Philippines, Quezon City.

For school year 1998-99, there are 35 on-going scholars. Of the 35, 16 are studying in DLSU, Manila; 17 in UP Diliman; and one each in USC and Ateneo de Manila University.

This is a two-year scholarship program that aims to strengthen the capabilities of selected teacher education institutions in the fields of biology, chemistry, mathematics and physics by training their science and mathematics teachers. The program started on the first semester of school-year 1995-96.

- *Enhancement of Practical Works in Science and Mathematics Education at the Regional Level*

The Enhancement of Practical Works in Science and Mathematics Education at Regional Level was a project with the three model RSTCs—Bicol University-RSTC, Legaspi City in Luzon, Western Visayas State University-RSTC, Iloilo City in the



Visayas, and the Ateneo de Davao University-RSTC, Davao City in Mindanao. The program was conducted from 1994 to 1998.

The project was designed to upgrade the practical skills of science and mathematics teachers. Its ultimate goal was to improve the performance of science and mathematics teachers within the service areas of the RSTCs.

**STRENGTHENING INSTITUTIONAL CAPABILITIES**



A total amount of P446,730.53 was provided by the governments of the Philippines and Japan for operational costs, while a total of P287,885 was provided by Japan for equipment.

The dispatch of Japanese Overseas Cooperation Volunteer (JOCV) members was one of the components of the Package

In October 1998, a survey was conducted by JICA-JOCV at the three RSTCs among the RSTC directors, staff and teachers who underwent training. Questionnaires were also answered by the DOST-SEI Management and Technical Staff, UP-ISMED director and trainers, and the director of PNVSCA. The survey,

PHOTOS:

1. Teacher training in ADDU-RSTC high school
2. Japanese Overseas Cooperation Volunteer (JOCV) at Regional Science Teaching Center (RSTC)

# Japanese Volunteers



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Cooperation for the Development of Elementary and Secondary Science and Mathematics Education between the Philippine government, through cooperating and implementing agencies, and the Japanese government through JICA. The Philippine cooperating agencies are the DOST, DECS, the RSTCs of BU, WVSU and ADDU, and NEDA through the PNVSCA.

which was in cooperation with SEI, had 117 respondents. The results showed that the objectives of the project have been successfully met.

A seven-member evaluation team from Japan came to the Philippines for the final evaluation of the project. A Memorandum of Agreement which was signed on December 11, 1998 in Makati City, recommended the extension of the project for three more years.

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## *IT Knowledge and Equipment Support for Science Education*

- *Training Program for Mobile IT Classroom (MITC) Teachers/Facilitators*

Five science teachers and one science supervisor from the Caraga region attended the course in June 1998 at the UP Institute for Science and Mathematics Education Development in Quezon City.

The course was designed for elementary science and mathematics teachers from the Caraga region who will be involved as teachers/facilitators of the MITC. The teachers learned to manipulate and use the equipment and facilities in the MITC. They also developed teacher's guides and lesson plans that integrate educational software on CD-ROMs and videotapes contained in the mobile classroom using word processing software.

- *Provision of Additional Facilities for the Mobile IT Classroom*

Apart from computer notebooks, additional facilities were purchased for the MITC. These are one LCD multimedia projector, one VHS player, one projection screen with stand and two units of video tape rewinder. These facilities will be carried by the MITC to be used in schools for students who cannot be accommodated inside the bus.



The project covers the expenses to be incurred in the maintenance of the MITC. These include payments for the insurance of the bus and its accessories, registration, waxing and expenses to be incurred in transporting the bus from Manila to Butuan City.

The MITC was scheduled for deployment to Caraga region in January 1999.

- *Development and Reproduction of Computer-Based Training Modules in High School Science and Mathematics*

Thirty-three titles of computer-based training modules in selected high school science and mathematics courses, including the application of graphics, are being developed and are at the programming stage. Completed titles will be packaged in diskettes and CD-ROMs to be reproduced and distributed to the network of S&T-oriented high schools and other public high schools with computers.



**Table 1: IT HARDWARE AND SOFTWARE RECIPIENT SCHOOLS**

LUZON	VISAYAS	MINDANAO
Ilocos Norte National HS	Badian National Comprehensive HS	Alubijid National Comprehensive HS
Ilocos Sur National HS	Buanoy National HS	Iligan City East HS
Doña Aurora HS	Alangalang National HS	Esperanza High School
Quirino General HS	Samar National HS	
Abra National HS	San Remigio National HS	
Lawig National HS		

- *Computer-Based Education Program at Philippine Normal University-Agusan Campus*

A grant worth P1,035,900 was released to Philippine Normal University-Agusan Campus for the purchase of equipment aimed at strengthening the teacher-education program and developing the campus into a resource center for IT in the province of Agusan and in the Caraga region. The equipment will be used to improve the teaching of science, mathematics and computer technology and its applications.

The equipment to be purchased consist of 15 personal computer units, 15 UPS units, three printers and one LCD projector.

- *Provision of IT Hardware and Software for S&T-Oriented High Schools*

The recipient schools of the last batch of IT grant received 15 units clone Pentium personal computer and peripherals during the third quarter of 1998. (Table 1)

The units were loaded with the MS Windows 95 and MS Office 97 programs. Aside from the software given by the SEI,

multimedia CD packs were also provided by the supplier. Selected teachers of the recipient schools were trained on basic computer operations, virus prevention, data backup, basic diagnosis and troubleshooting, use of CD ROM drive, and retrieval of files from the CD.

- *Establishment of a Pilot Elementary Science and Information Technology Learning Center at Gov. P.F. Espiritu Elementary School*

The Gov. P.F. Espiritu Elementary School in Bacoor, Cavite was the recipient of this UNESCO-funded project. ICT (Information and Communication Technology) facilities, which include computers and other Internet facilities, were purchased for the school. CD ROM software and video materials for science and mathematics, and other basic equipment were also provided. The project aims to facilitate the teaching-learning activities of both the teachers and students. The school will serve as the learning center for various elementary schools in Cavite.

PHOTO:

1. Sarrat National High School, Sarrat Ilocos Norte





### ***Upgrading of Science Laboratory Equipment of Pasay City East HS and Caraga Regional Science HS***

To upgrade the laboratory skills of the students and acquire new techniques in operating and manipulating science equipment and apparatus, the DOST-SEI purchased science laboratory equipment worth P1,000,000 for Pasay City East High School, and science equipment and books worth P220,000 for Caraga Regional Science High School. Eighty percent of the equipment were already delivered to the schools.

### ***Development and Utilization of the Scholarship Program Administration System (SPAS)***

The second phase of development work for Scholarship Program Administration System (SPAS) was completed this year putting in place the application for the processing of the major bulk of the scholars' data.

Due to the differences in the specific needs of the undergraduate and graduate scholarship programs of the SEI, two separate applications were developed covering functions unique to the program's business process.

Integration of SPAS I and II has been done. The users were able to conduct a test run, using a set of predetermined test data, under

the direct supervision of an Oracle consultant and the project staff. Test reports were generated and revisions in the program were integrated to suit more specific procedural processes.

After the successful test, production began with the encoding of the scholars' profile and the building up of the static files. The users in the technical divisions concentrated on encoding the scholars' data while the project staff took charge of building up the static files which included geographical locations from regions to district/barangay levels, zip codes and subject, course codes and grading system by school.

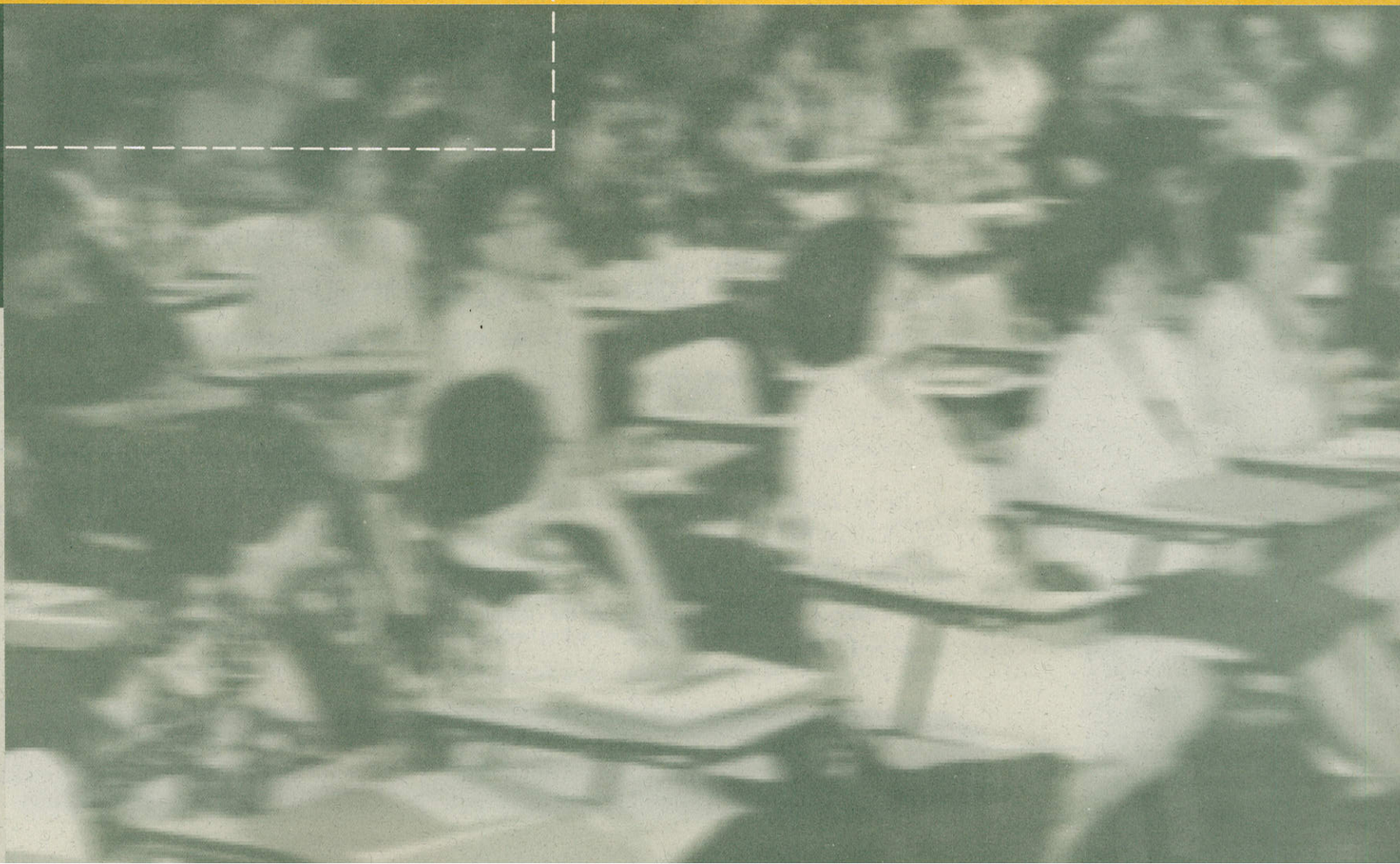
To help all users both in the SEI and the DOST regional offices, a Users' Training Course was conducted on September 23 to 25, 1998 at SEI. Fourteen regional staff and six Scholarships and Training Division (STD) staff attended the Undergraduate Program SPAS, while four Science and Technology Education Division (STED) staff and one Planning Unit staff attended the Graduate Program SPAS.

The training covered an overview of the system, discussion of screens, reports and exercises.

There were also sessions which evaluated the system developed based on the information normally demanded at the regional level. The training also served as a channel for getting feedback from the users in the field which in turn was used to further improve specific report formats. Deployment has been scheduled for the second half of 1999 after a security program is integrated into the system.

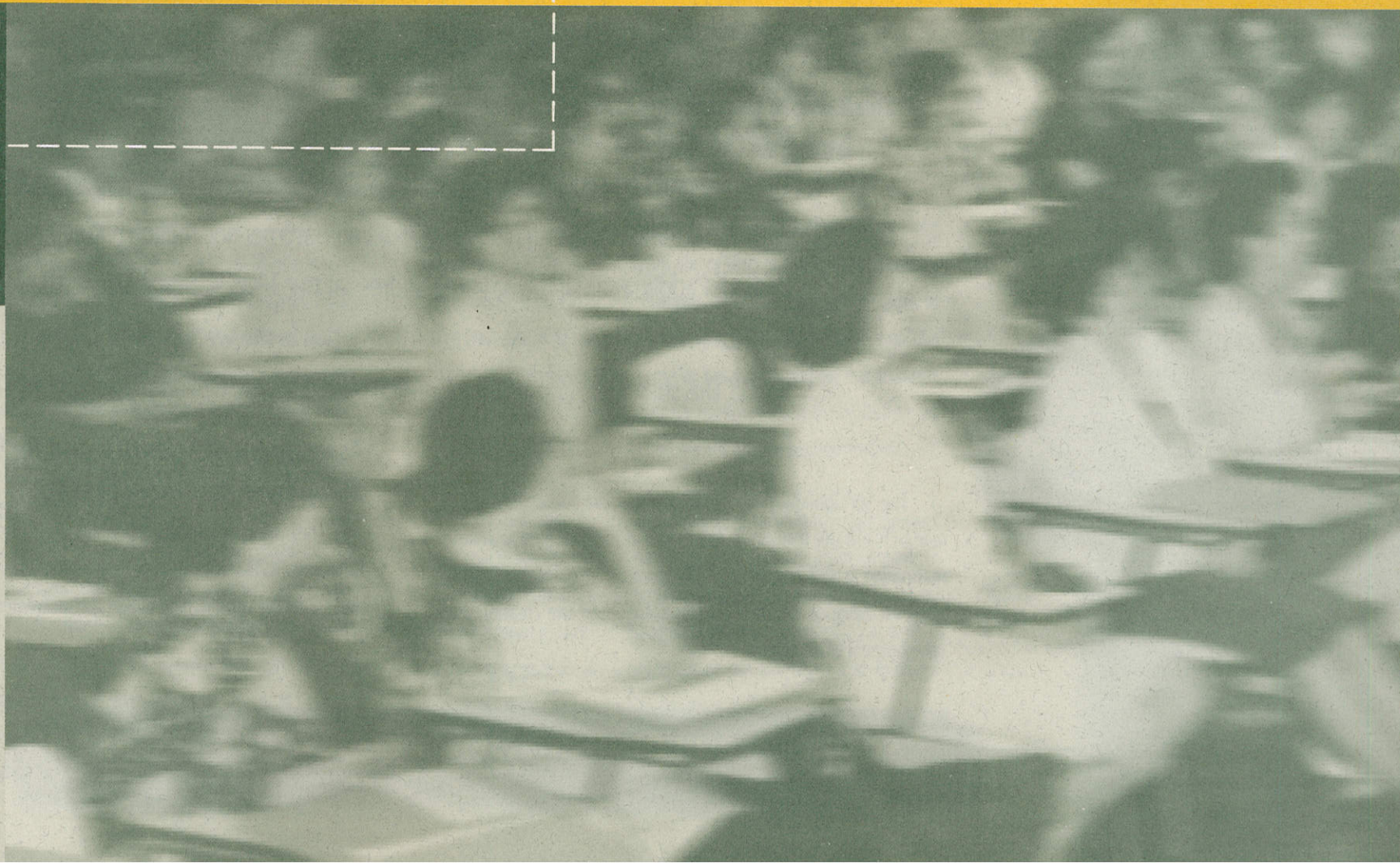


# *Capability Building in Science Education Research*





# *Capability Building in Science Education Research*







Japan topped the 1987-1994 Asian survey by UNESCO on personnel engaged in research and development with its 6,042 scientists and engineers and 869 technicians per one million population. The Philippines placed at the far bottom with 155 scientists and engineers and 35 technicians per one million population, DOST Secretary William Padolina said in his keynote address at the 1998 National Science Education Congress last November 27-28. It is no wonder that Japan is the world's second largest economy after the US. This shows the important role being played by research and development in the country's progress.

The SEI's building the capability in science and technology research entails the assessment and monitoring of teaching manpower, school resources and students. It also emphasizes the need for advance information technology and the creation and development of databases.



### ***Assessment of Scientific and Technological Manpower Resources (ASTMAR)***

The project Assessment of Scientific and Technological Manpower Resources (ASTMAR) aims to generate information needed to analyze and assess the complement of S&T manpower resources. Specifically,



the project aims to come up with documented bases for determining the priorities of science relevant to the needs of S&T manpower in the industry, academe and government sectors; to develop and update S&T manpower database; and to develop and implement S&T manpower information system and/or IT capabilities.

Four survey questionnaires were developed for the four studies under the project. These were the: Survey of Secondary Science and Mathematics Teachers; Survey of Information Technology (IT) Capability of Secondary Schools; Survey of Teacher Education Institutions (TEIs) offering BSE Programs; and Survey of Science and Mathematics Supervisors (Regional and Division Levels).

Conducted nationwide, the data generated by these studies will be used in updating S&T manpower database. This database would be useful in measuring the existing and potential strength of the country to undertake S&T education activities.

The survey questionnaires for Science and Mathematics Teachers and IT Capability were fielded to all the secondary schools through the help of the 15 RSTCs. The survey questionnaires for TEIs offering BSE Programs and for Science and Mathematics Supervisors were sent to the respective individuals and institutions concerned.

### ***R&D Support for the Improvement of Science Education in the Country***

To continuously upgrade the research capabilities of the science and mathematics teachers, the "Action Researches in Science Education" Series One was published. The first publication composed of nine studies was distributed to all Science and Mathematics Supervisors, Node Coordinators, Regional Science Teaching Centers, 110 S&T-Oriented High Schools, Grants-in-Aid recipients and all DOST

Regional Offices. Copies of the publication were distributed to a bigger number of readers so that it would reach the farthest school in the country, and give the target recipients the opportunities to assess and apply such findings for improving science and mathematics instruction and learning.

The project "Development of Modules for Action Research for Science and Mathematics Teachers," was also conceptualized. The instructional material to be developed is composed of six modules that will serve as reference or instructional material for teachers who are interested to do action research.

### ***Coordination and Monitoring of Students' Performance in the 110 S&T Oriented High Schools***

One of the ways to determine the impact of the Engineering and Science Education Program (ESEP) was to look into the achievement levels of the students who were the beneficiaries of the different educational interventions under the program. The different interventions were in the form of providing the students with laboratory facilities, library facilities, laboratory buildings, supplementary instructional materials, specially-trained teachers, and a special science curriculum.

To ascertain the impact of these interventions, the general approach was to check the students' academic performance in Science, Mathematics and English. Thus, tests in these subjects were administered to those in the special science classes (SSC) as well as to comparison groups consisting of the brightest and the best students from the regular SEDP classes (RSC).



In the final year of its implementation (1997-98), achievement tests were administered to 11,206 and 1,272 fourth and third year high school students, respectively. Of the 11,206 fourth year examinees, 6,284 were students of SSC and 4,922 students of RSC. Of the 1,272 third year examinees, 634 were students of SSC and 638 students of RSC.

Since the academic years 1993-94 to 1996-98, achievement tests in the three subjects were administered to all students of the SSC and RSC in all year levels. For the whole duration of the project, students belonging to the SSC generally performed better than those in the RSC.

### ***Establishment of the Philippine Database in Science Education***

The infrastructures for the development of the databases in twelve cooperating nodes were maintained, namely: UP-College of Education, UP-Institute of Science & Mathematics Education, Biology Teachers Association of the Philippines, Ateneo de Manila University, Silliman University, Ateneo de Davao University, Philippine Normal University, De La Salle University, University of the East, University of San Carlos, University of Santo Tomas, Mathematics Teachers Association of the Philippines.

A workshop for the refinement of Cluster I database structure was held in May, and a World Wide Web Interface program for CDS/ISIS Text database was developed in June for a more user-friendly manipulation of the STEDNET database.

To enhance the capability of agencies with Internet servers, a maintenance operation was conducted. This included the upgrading of the PC memory, check-up and reconfiguration of the PC and Internet connectivity, and the upgrading of the server's operating system (UP-ISMED, DECS-OPS, PNU and SEI).

Some 662 records (Web-enable version) were also collected into the SEI database server.

To ensure the availability of data to Internet users, the UP-ISMED STEDNET server also went on-line through the PHILNET Internet service provider (ISP).

### ***Establishment of an Electronic Network in Science and Technology Education Between SEI and Selected Priority Institutions***

To maintain the electronic network between SEI and selected government agencies, the infrastructures in 13 cooperating nodes were maintained. These were in the Bureau of Elementary Education-DECS, Bureau of Nonformal Education-DECS, Office of Planning Services-CHED, Management Information System-NEDA, National Statistics Office, UNESCO-Department of Foreign Affairs, Bureau of Labor and Employment Services-DOLE, Bureau of Secondary Education-DECS, Office of Planning Services-DECS, Office of Planning Policy Resource Information-CHED, Social Development Staff-NEDA, Planning and Evaluation Service-DOST, Office of Formal Technical Vocational Education and Training-TESDA.



The SEI local area network was upgraded to Star UTP Cabling and an Internet switch hub was installed for faster Internet access.

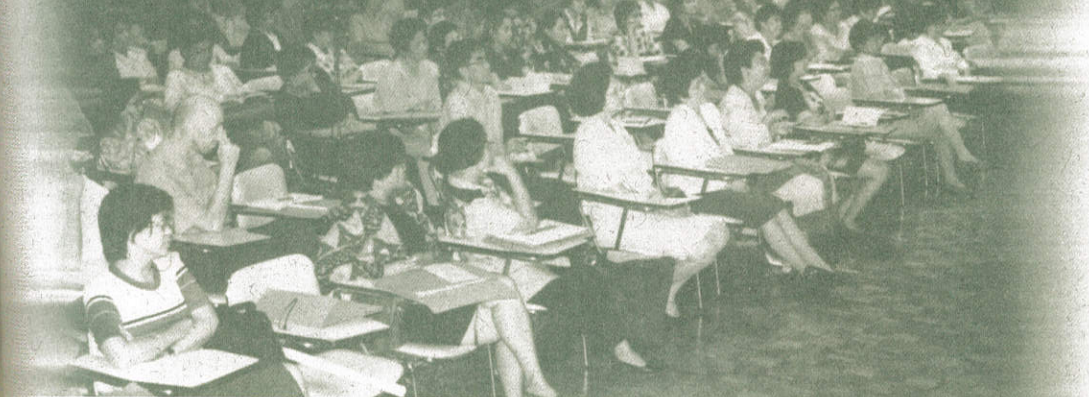
It is important to note that the SEI and STEDNET Home page design was enhanced and launched in July, while the DECS-OPS STEDNET server was installed on-line through the FAPENET ISP.

Ramon Bagatsing Jr. and Dante Liban on the Ramos administration to convene government officials and leaders of the academe for an educational summit to push forward the nation's growth into a newly industrialized country. They pointed out the absence of an education technology master plan.

PHOTO:

1 The National Science Education Congress  
November 27-28, 1998

# Science Congress



## ***Education Technology Workshop***

Thirty-one officials and staff representing the DOST, DECS, CHED, Department of Trade and Industry (DTI) and the Technical Education Skills Development Authority (TESDA) attended the Education Technology Workshop at the Development Academy of the Philippines Conference Center, Tagaytay City in March for the purpose of drawing up the framework for the Education Technology Master Plan.

Former President Fidel Ramos instructed the said departments to conduct an Education Technology Summit with DOST as the lead agency. The instruction was a response to the call of Congressmen

After the two-day workshop the participants came up with a framework and a draft of the Education Technology Master Plan.

The draft was presented to the 147 representatives from the DOST, DECS, DTI, CHED, TESDA, academe, computer software and hardware industries, Congress, media, research institutions, Internet service providers and associations of IT users and leaders who attended the forum held in April 1998 at the Philippine Nuclear Research Institute Commonwealth Avenue, Quezon City.

The participants' comments, reactions and suggestions were considered in the second draft of the plan that was prepared by the concerned government agencies in a series of meeting and workshops.

1998 ANNUAL REPORT

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### ***National Science Education Congress***

The National Academy of Science and Technology (NAST), the Center for Integrative and Development Studies (CIDS), the SEI, and the UP sponsored the National Science Education Congress on November 27 and 28 at the STTC UP-ISMED.

The Congress aimed to present to the stakeholders in science education the issues and problems of the sector and the solutions to them. The five major issues were: development of science culture; teacher preparation and in-service training; learning process and student performance in science; curriculum, textbooks and instructional materials; and governance.

The holding of the Congress was an offshoot of a series of discussions among experts and science educators from Ateneo de Manila, the DLSU, the PNU, the UP-ISMED, the NAST and the SEI.

The papers resulting from the discussions were presented in the Congress by Dr. Milagros Ibe (UP), "Overview of Science Education in the Philippines;" Dr. Anna Miren Intal (ADMU), "The Challenge of Developing Science Culture in the Philippines;" Dr. Evangeline Golla (PNU), "Teacher Preparation in Science and Mathematics Education;" Dr. Allan Bernardo (DLSU), "The Learning Process: Neglected Phenomenon in Science and Mathematics Education Reform;" Dr. Vivien Talisayon (UP-ISMED), "Materials and Methods in Basic

Education and In-Service Teacher-Training in Science and Mathematics; and Dr. Catherine Vistro-Yu (ADMU), "Organizational Structure and Effective Delivery of Science Education.

The papers written and read in the Congress constituted Volume I of the publication "Science Education in the Philippines: Challenges for Development."

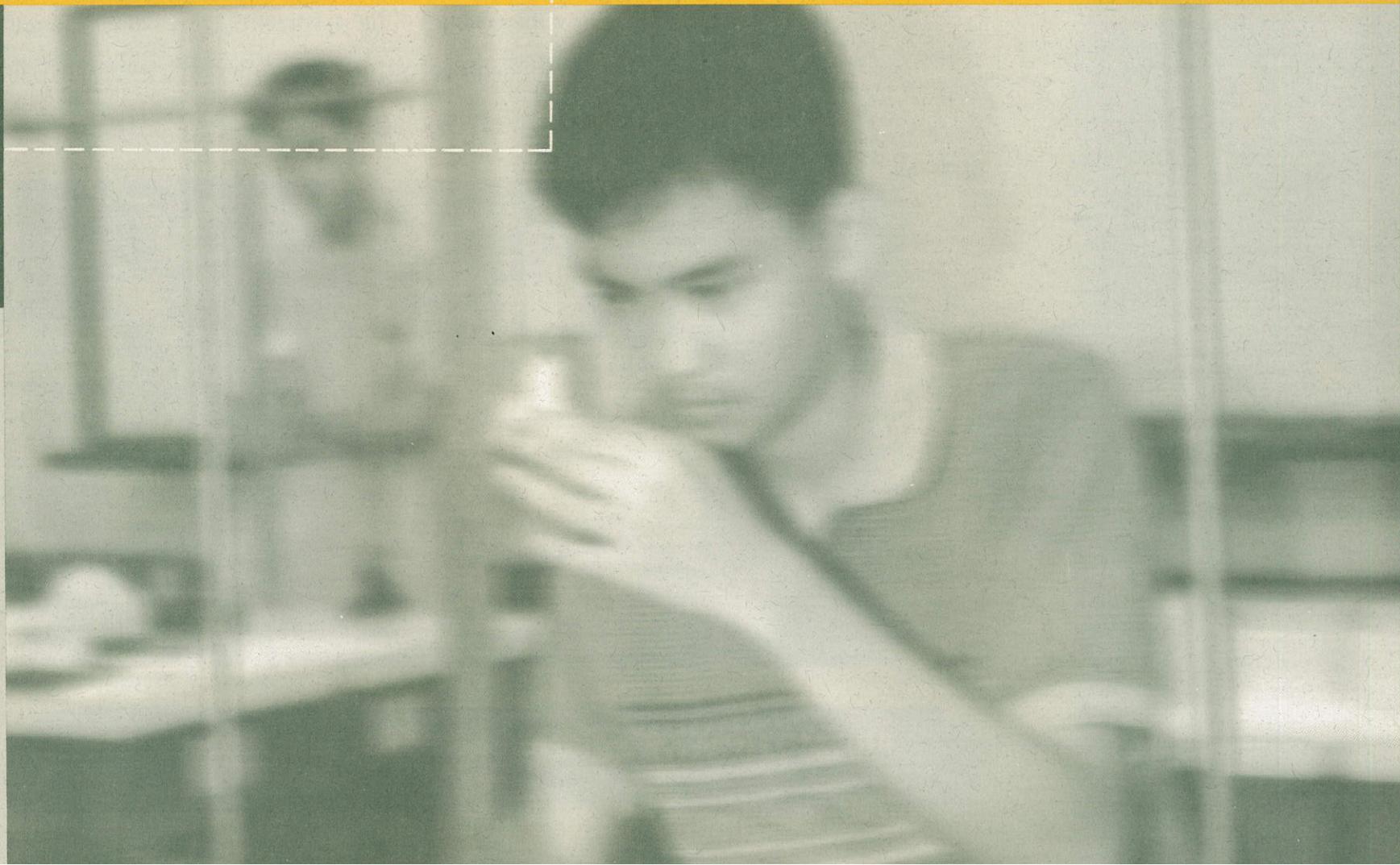
Invited to the Congress were decision- and policy-makers in science education, DECS, CHED and DOST officials at the national, regional and division levels, faculty members from private and state universities, graduate students in science education, RSTC directors, college of education deans, and representatives from the private sector, and Philippine Legislature.

### ***17th Biennial Conference on Asian Biology Education***

The conference was held on December 14 to 18, 1998 at the Mercure Hotel, Manila. Novel teaching techniques, researches and related education and government activities were presented. This was attended by university academic staff, school teachers, education research personnel, administrators and all those interested in exchanging ideas in biology education. The SEI provided support for the printing of the conference proceedings.



# *Promotion of Science & Technology Culture*







SCIENCE EDUCATION INSTITUTE

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The youth of today's cyber age develop their interests and learning capacities through various means. Being very creative and innovative, their boundless energy and enthusiasm must be channeled to useful endeavors. For this reason, the SEI, through its Youth Development Programs, helps the youth develop their scientific consciousness within the confines of the classrooms and laboratories, and cultivates the students' interest and involvement in science and technology through out-of-school activities.



PROMOTION OF SCIENCE & TECHNOLOGY CULTURE



The Institute has been supporting projects and programs, including science fairs and competitions in the country and abroad, and other activities to instill in the students the importance of science especially as it relates to their daily life.

### ***First Science and Technology Youth Summit: In Celebration of the Philippine Centennial***

The First Science and Technology Youth Summit: In Celebration of the Philippine Centennial brings together to center-stage the talented youth of today. The most priceless resource of the country at any given period, the youth, particularly those who show potentials and talents in science and technology, were given recognition in this three-day affair. The Summit was conducted at the Philippine Science High School on March 30 to April 2.

The Summit was meant as a culminating activity for three youth science projects implemented during the academic year 1997-1998. The main feature of the Summit was the national stage competition of the Search for The Outstanding Youth Science-Researchers (TOYS), Philippine Physics Olympiad (PPO) and Gawad AGKATEK (Agham, Kapaligiran at Teknolohiya). The national finalists in these three projects vied for the top prizes through exhibits and science congress for TOYS, experimental and theoretical tests for PPO, and document and on-site evaluation for Gawad AGKATEK.

The national winners were named and awarded in a ceremony graced by Dr. Caesar Saloma, President of the Samahang Pisika ng Pilipinas; Mr. Homer P. Blanco, First Vice-President for Special Projects of the Prudential Life Groups of Companies; Mr. Mike Splinter, Vice-President and General Manager of Intel Corporation Components Manufacturing Group; Mr. Jacob Peña, President of Intel Philippines; and Dr. William G. Padolina, DOST Secretary.

### ***Local and International Competitions***

#### ***• Philippine Physics Olympiad (PPO)***

The grand finals of the Philippine Physics Olympiad was held during the First Science and Technology Youth Summit held at the Philippine Science High School on March 30 to April 2. The national stage for the experimental competition was conducted at the UP National Institute of Physics. Forty-two physics-inclined secondary students joined the grand finals. The winners were:

#### ***Individual Competition:***

*First, Julius Sadiarin-PSHS;*

*Second, Adrian Solis-PSHS;*

*Third, Eugene Alvin Villar-DLS Zobel School.*

#### ***Team Competition:***

*First, Philippine Science High School;*

*Second, De La Salle Zobel School;*

*Third, Manila Science High School.*

The prizes and awards were provided by DOST, Manila Electric Company and the Metrobank Foundation Inc.

#### ***• Philippine Mathematical Olympiad***

The division stage of the Seventh PMO was conducted nationwide on August 24 to 29 with approximately 40,000 secondary students participating.

The second phase of the Olympiad (the Regional Stage) was held on November 26 and 27 in the 15 regions of the country. The competition at this stage are of two types: individual and team. The prizes for the Regional PMO (medals, trophies, certificates) were donated by PCI Bank.

PHOTO:

- 1 Mayor Mel Mathay of Quezon City, Dr. Ogena and Wyart Chan during the ribbon cutting ceremony on 1st S & T Youth Summit





- *Fourth Gawad AGKATEK*

In celebration of the Centennial of the Philippine Independence, the timetable of the Gawad AGKATEK (Agham, Kapaligiran at Teknolohiya) was changed in time with the awarding of the Gawad AGKATEK national winners during the First Science and Technology Youth Summit, together with the other Youth Science Programs in March 1998. The two-phase selection of the national winners, document evaluation and on-site evaluation, was conducted in the first two months of the year.

*Outstanding Science Club, Elementary Level:*

*First, Colawin Researchers, Colawin Elementary School, Argao, Cebu (Region VII); President: Kathy Jane A. Lanticse; Adviser: Teofreda F. Villacorta;*

*Second, The Explorers Science Club, San Marcelino Elementary School, San Marcelino, Zambales (Region III); President, Jecyl Kristel Peralta; Adviser, Natty Jimenez;*

*Third, BES Science Club, Balara Elementary School, Quezon City (NCR), President: Ma. Hilda Tarroc; Adviser, Rodolfo Modelo.*

*Outstanding Science Club, Secondary Level:*

*First, UPHSI Science Club, University of the Philippines High School in Iloilo, Iloilo City (Region VI); President, Joanne B. Tayapad; Adviser, Mary Ann F. Naragdao;*

*Second, Science and Technology Club, Buguias Loo Polytechnic College, Loo, Buguias, Benguet (CAR); President, Angelita Patian; Adviser, Nelin W. Dunuan.*

*Outstanding Project:*

*First, "The Black Pepper School and Community Income Generating Project," The Black Pepper Club, Adya Elementary School, Lipa City, Batangas (Region IV); President, Elmer D. Martinez; Adviser, Purificacion C. Hernandez;*

*Second, "Masao River's Water Quality and Its Implication to the Socio-Economic Stability of the Community," ANHS Explorers Science Club, Agusan National High School, Masao, Butuan City (Caraga); President, Rommel H. Maneja; Adviser, Ruth B. Villanueva.*

- *INTEL Philippine Science Fair (Search for TOYS)*

The INTEL Philippine Science Fair, formerly called the Search for The Outstanding Youth Science Researchers (TOYS), is aimed to tap the cream of the crop among the science-inclined youth all



over the country. For 1998, the search tapped the INTEL Philippines, a private chip maker company as its sole corporate sponsor.

The 1997-98 Interregional level competition for secondary category was held on January 28 with a total of 87 entries from the four areas of the country: Luzon, Visayas, Mindanao and NCR. The best five projects in each area, or a total of 20 projects, were selected by the board of judges to become the finalists in the national level competition.



The national level competition was held from March 30 to April 2 at the PSHS, Quezon City during the first Science and Technology Youth Summit. The entries per category were elementary—14; secondary—20; tertiary—6.

The top three winners were selected in the elementary and tertiary categories while the best five projects were chosen in the secondary category.

#### *Elementary category winners:*

*First, "Biothermosensor," McAllen Reonel Cacacho, Tuguegarao West Central School, Cagayan;*

*Second, "Lambayong Rope: It's Significance to Commercial Abaca Rope," Mary Grace Auguis, Magallanes Elem. Sch. Agusan del Norte;*

*Third, "Alternative Measuring Device: Measuring Made Easy," Agatha Anna Dacanay, SPED Center Military Cut-Off, Baguio City.*

#### *Secondary category winners: Five best projects*

*1. "Telemed: The Mechanization and Control of a Microscope for Remote Conferencing," Christian Paolo Sanchez, PSHS, Quezon City;*

*2. "Effect of Papaya Latex and Garlic Extract on Post Harvest Diseases of Carabao Mango," Richard Sotto, UP Rural HS, Los Baños, Laguna;*

*3. "Parasitism of Trichogramma chilonis Ishii with Selected Lepidopterous Pests," Jessica Villamor, Sorsogon National HS, Sorsogon;*

*4. "Determining the Bioherbicidal Activity and Weed Specificity of the Leaf Blight and Leaf Mold Pathogens on the Rice Paddy Weed Sphenoclea zeylanica gaertner," Neil Tristan Yabut, Manila Science HS, Manila;*

*5. "Morphology and Cytogenetic Relationship Between Solanum melongena L. and Solanum aculeatissima L.," Annaliza Oliquina, Lipa City National Science HS, Lipa City.*

Of the five projects, the first three were sent to the United States to represent the Philippines in the INTEL International Science and Engineering Fair (INTEL ISEF) held on May 10 to

16, 1998 in Fort Worth, Texas. Two projects garnered fourth place in the Grand Award.

#### *Tertiary category winners:*

*First, "Molecular Characterization of Schistosoma japonicum Candidate Vaccine Antigens Recognized by Human Immunoglobulin E," Judith Alamares, UP Diliman;*

*Second, "Industrial Utilization of Agricultural Waste: Particle Board from Bagasse," Jerry James de la Torre, Camarines Sur State Agricultural College, Pili, Camarines Sur;*

*Third, "Toxicity Testing of Tubli Extract on the Larvae of Aedes aegypti Mosquito," Rose-Ann Kempis, Leyte Normal University, Tacloban City.*

The 1998-99 division science fair was held nationwide in October and November and was participated in by elementary and secondary students. For NCR, 147 participated in the elementary while 121 participated in the secondary category.

The INTEL Philippine Science fair was launched to promote the project in three regions: NCR, August 26; Region X, Cagayan de Oro City, September 10; and Region VII, Cebu City, September 17. The activity was attended by the press people, INTEL officials and DOST-SEI officials.

#### *• SEARCC International Software Competition (ISC)*

The SEI supported the intensive training of the delegates to the ISC. There were 20 high school and college students from the UPLB, UP Diliman, PSHS, Ateneo de Naga, University of Asia & the Pacific, Ateneo University and PUP who undertook the training in programming and micromouse competitions.

The Philippine teams placed third and fourth out of 13 teams from nine countries who participated in the ISC in Darwin, Australia on July 8 to 10.

PHOTO:

- 1 Secondary winners of National Intel Phil. Science Fair (Search for TOYS) with Dr. Ogena (SEI Director), Secretary Padolina and Intel Officials, (Mr. Mike Splinter and Mr. Jacob Peña).





*Third place winners: Orland Anthony Gonzales, (UP); Sandra Jean Chua, (PSHS); and Pamela Patdu, (PSHS).*

*Fourth place winners: Mario Carreon, (UP); Anna Gabutero, (UPLB); Ian Orozco, (PSHS).*

- **1998 International Mathematics Olympiad (IMO)**

The 39th IMO was held in Taipei, Taiwan on July 10 to 21. The Philippine delegation was composed of Dr. Jose Marasigan, team leader; Emmanuel Cabral, deputy team leader; Jason Tan, contestant; Daniel Yagan, contestant; Antonio Valente Macarilay, contestant; and Christian Paul Chanshio, contestant.

- **First SEAMEO Mathematics Olympiad**

The First SEAMEO Mathematics Olympiad was held on September 14 to 18 in Penang, Malaysia. The Philippine delegation comprised of the following: Evangeline Bautista, team leader; Patrick Lim, contestant; Michael Mark Maquilan, contestant; Antonio Valente Macarilay, contestant; Gary Anthony Wu, contestant.

The awards received by the Philippines were:

*Individual test:*

*Silver: Patrick Lim*

*Bronze: Michael Mark Maquilan*

*Consolation prize: Antonio Valente Macarilay*

*Team test: the Philippines ranked fifth among the nine competing countries.*

- **Asian Pacific Mathematics Olympiad (APMO)**

The Asian Pacific Mathematics Olympiad (APMO) was conducted in the Philippines on March 14 with 45 students competing. It was started in 1990 in a correspondence contest in mathematics among countries in the Asia-Pacific region.

*The awardees from the Philippines were:*

*Bronze: Daniel Yagan,*

*Honorable mention: Jason Tan,*

- **Australian Mathematics Competition (AMC)**

The 21st Australian Mathematics Competition held on August 4 at the ADMU-Science Education Complex was participated in by 101 secondary students from 16 schools in NCR.

*Medalists: Timothy John Chua (Xavier School); Timothy Uy (Grace Christian HS); Antonio Valente Macarilay (Philippine Science HS).*

*Distinction certificates: Nine*

*Credit certificates: Thirty-seven*

*Special achievement award: One*

The Philippines has garnered a total of twelve medals since its participation in the AMC in 1987.

The AMC medallists will receive the medals and cash awards from the DOST Secretary during the awarding rites on March 5, 1999 at ISMED, UP, Diliman.

- **49th International Science and Engineering Fair (ISEF)**

The 49th International Science and Engineering Fair (ISEF) was held on May 10 to 16 in Fort Worth, Texas, USA. The Philippine participation was sponsored by Intel Philippines.

Three entries were sent to the said fair: one team project



from PSHS, Quezon City, and two individual projects from Sorsoigon National High School and from UP Rural High School, Los Baños.

The two projects which garnered fourth place in the grand awards were:

## & Engineering Fair



"Telemed: Mechanization and Control of Microscope for Remote Conferencing" (Team Project-Engineering) by Christian Paolo O. Sanchez, Ernest Anthony A. Baello and Lorenzo Fernando M. Lorilla of PSHS, and

"Parasitism of *Trichogramma chilonis* Ishii with Selected Lepidopterus Pests" (Individual Project-Botany) by Jessica Villamor of SNHS.

The third entry was "Effects of Papaya Latex and Garlic Extraction on Post-Harvest Diseases of 'Carabao' Mango" (Individual Project-Botany) by Richard O. Sotto of UPLB-RHS.

### 1998 National Science Club Month (NSCM)

The Department of Science and Technology, through some of its participating institutes and councils, opened its doors to 350 science club advisers and members, both in the elementary and

secondary levels, in Metro Manila, during the annual September observance of National Science Club Month

Held on September 1, 1998, the day was dubbed "A Day in the Science Community." The main features of the day were science and career talks and technology lecture/demonstrations.

Grace Favila, executive director of the Philippine Business for Environment and a national judge of the Gawad AGKATEK, in her keynote speech, called on the science clubs to reassess their directions and use their potentials to make a difference in science and technology, particularly in environment programs.

The participating DOST agencies were the Industrial Technology Development Institute, Science and Technology Information Institute, Philippine Textile Research Institute, Philippine Council for Advanced Science and Technology Research and Development, and the Philippine Institute of Volcanology and Seismology. The day's activities were with the sponsorship of some companies, namely, Max Restaurant, Coca Cola Bottlers Philippines Inc., Commonwealth Foods, Nestle Philippines and Bato Balani Foundation.

The project was successfully conducted with the cooperation of the Department of Education, Culture and Sports, and the Philippine Society of Youth Science Clubs.

The science clubs in the regions, led by the DOST Regional Offices, conducted a series of similar science activities during the month-long celebration.

### 1998 Science Research Seminar Workshop (SRSW)

The SEI, under the sponsorship of Intel Philippines Manufacturing Inc., conducted the 1998 Science Research Seminar Workshop.

PHOTO:

- 1 Philippine delegates to ISEF at Forthworth, Texas, USA with Intel Official (US based) and Science Adviser.





This aimed to equip the young science researchers and the science teachers with the research skills necessary to prepare them for their participation in the 1998-99 Intel Philippine Science Fair.

The two-day activity included lectures and workshops on the different stages of the research process: identifying the research problem; formulating the research problem, hypothesis and research design; collecting/recording/analyzing and presenting the data; making conclusions and recommendations; and writing the abstract. Moreover, the participants were given an overview of planning and organizing a science fair.

Each teacher-student team presented a research proposal during a mock science congress for comments/critiquing by a panel of experts.

A series of this seminar-workshop was conducted all over the country. The school divisions in each region were clustered and an activity was held for each cluster. Research experts in each area were tapped as resource persons. An approximated 3,200 participants—secondary teachers and students participated in the seminar-workshops.

### ***1999 Dr. Juan Salcedo Jr. Science Education Awards***

A cooperative project with the Department of Education, Culture and Sports (DECS) and the Commission on Higher Education (CHED), this biennial nationwide search for the most outstanding science and mathematics teachers in the elementary, secondary and tertiary schools is now on its fifth search in 10 years.

Started in 1991, the Dr. Juan Salcedo Jr. Science Education Awards serve as recognition of exemplary contributions of science and mathematics teachers in the following areas: development of instructional materials and teaching-learning aids, use of innovative teaching strategies, conduct of researches, and their meaningful involvement in professional activities which contributes to the promotion of science and technology consciousness.

Prior to final selection, nominees undergo a two-stage Regional Qualifying Test. Three ranking regional winners per category will be declared national finalists, with one national winner to be chosen for the elementary, secondary and tertiary categories. The winners will receive a presidential gold medallion and a cash prize of P150,000, while the nominating school will receive a plaque of recognition. Nonwinning national finalists will receive a cash prize of P50,000 each. The awarding ceremonies are scheduled in time for the 1999 National Science and Technology Week celebration.



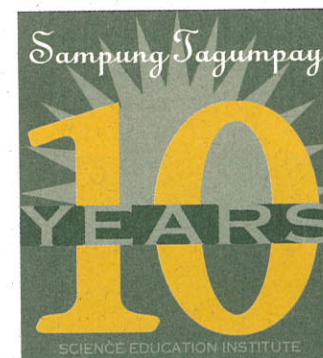
# *Strengthening of Linkages*







uilding and strengthening linkages, both in the country and abroad, is essential in promoting cooperation in the field of science education and technology. Networking and other linking arrangements among researchers, the academe and policymakers in the field of science and technology help in the transfer of scientific skills, information and knowledge, and in the sharing of resources.



The links the SEI has established in the country and abroad enabled it to tap resources, develop manpower and disseminate information to promote public awareness on science and technology.

### ***Participation in International Meetings/ Conferences***

The SEI officials and staff attended five international events in 1998. Director Ester B. Ogena attended the meeting called by the International Association for the Evaluation of Educational Achievements in Amsterdam, the Netherlands and Israel; the Second and third TIMSS-Repeat Coordinators Meeting in Berlin, Germany;





and Cambridge, Massachusetts, USA, respectively. She likewise attended the Governing Board Meeting of the SEAMEO—Regional Center in Science and Mathematics (RECSAM) in Ho Chi Minh, Vietnam on 3-5 Sept. 1998.

Leah Socorro Cayanan attended the Group Study Exchange Program of Rotary Club in Perth, Australia; while Ma. Daisy Demoni attended the 1998 Intel International Science and Engineering Fair in Fort Worth, Texas.

### ***Information and Media Work***

The SEI produced media materials for its various programs and projects. The projects completed cover a broad base of materials that were broadcasted, printed or shown in special events.

For broadcast, the following titles were produced: 1) *Sampung Tagumpay*—a video presentation of the milestone achievements of SEI in its 10 years of existence; 2) *Talino at Galing: Huwag Sayangin*—a 30 second television plug with radio version announcing the S&T Scholarship Program for SY 1999-2000 and encouraging high school students to apply; 3) *We are APEC*—a video documentary on the Philippines, its culture and people with focus on various aspects of development in S&T; 4) *A Tribute to Science and Math Teachers*—another 30 second television and radio plug with focus on encouraging institutions and professional organization to

nominate contenders for the 1999 Dr. Juan Salcedo Jr. Science Education Awards.

The airing of the two television/radio plugs were facilitated through direct coordination with the Philippine Information Agency (PIA) and the Kapisanan ng mga Brodkaster sa Pilipinas (KBP).

Multimedia presentations for major agency events were also produced. These were: 1) Interactive Exhibit on S&T Career Shop; 2) Award presentations for the SEI 10th Anniversary; and 3) Tribute to a retiring official of SEI.

Exhibit materials were produced and displayed in major national events. An exhibit on the 40 Years of S&T Undergraduate Scholarship Program was produced for the 1998 DOST Annual S&T Fair held at the PTTC during the NSTW celebration. Likewise, the SEI represented the DOST in the Centennial Youth Leaders Program (CYLP) held at the SBMA in Olongapo City by participating as exhibitor together with UNICEF.

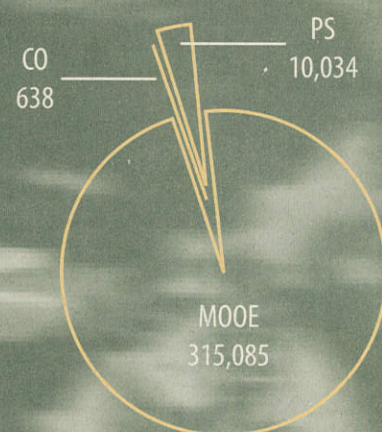
Publications in the form of an institutional newsletter, *SEI Updates*, were produced quarterly. Writers and contributors were likewise trained in a two-day S&T Writing Seminar-Workshop.

A continuing linkage with the media was also maintained through coordination work on current developments in the science education sector. Data and press releases were supplied to reporters and broadcasters as needed.



# Financial Summary

DISTRIBUTION OF EXPENDITURES  
BY EXPENSE CLASS  
As of December 31, 1998



PARTICULARS	ALLOTMENT RELEASED	OBLIGATION INCURRED	BALANCES
<b>FUNCTIONS</b>	9,337,054.00	9,120,192.11	216,861.89
1. General Administration and Support Services			
Personal Services (PS)	5,582,304.00	5,878,842.59	(296,538.59)
Maintenance and Other Operating Services (MOOE)	3,754,750.00	3,241,349.52	513,400.48
2. Administration of Personnel Benefit	80,000.00	90,000.00	
<b>DEVELOPMENT, INTEGRATION AND COORDINATION OF THE S &amp; T MANPOWER DEVELOPMENT PROGRAM</b>	8,005,250.00	6,887,561.13	1,117,688.87
Personal Services (PS)	4,729,000.00	4,155,259.02	573,740.98
Maintenance and Other Operating Services (MOOE)	2,638,250.00	2,094,302.11	543,947.89
Capital Outlay (CO)	638,000.00	638,000.00	—
<b>OPERATIONS</b>	310,290,000.00	309,749,218.31	540,781.69
1. Development and Utilization of S & T Manpower	30,000,000.00	29,835,217.09	164,782.91
2. S & T Manpower Assessment and Alternative Delivery Programs in Science Education	2,252,000.00	2,255,369.30	(3,369.30)
3. Strengthening Institutional Capabilities in Science Education	59,038,000.00	58,710,968.83	327,031.17
4. Implementation of the S & T Scholarship Program Pursuant to RA 7687	219,000,000.00	218,947,663.09	52,336.91
<b>TOTAL</b>			
PS	10,311,304.00	10,034,101.61	277,202.39
MOOE	316,683,000.00	315,084,869.94	1,598,130.06
CO	638,000.00	638,000.00	—
<b>GRAND TOTAL</b>	327,632,304.00	325,756,971.55	1,875,332.45



# Staff Development

## HELEN T. ACOSTA

- 3rd 1998 PATAP-CSC Symposium  
CSC's Function Rm., Batasan Hills, Q.C.  
July 17, 1998

## ARTURO P. ASUNCION

- LCD and Moving Camera  
4th Flr., SEI Conference Room  
July 6, 1998

## AIDA T. AYRAN

- 25th National Conference on Public  
Personnel Administration  
Rib-Eye Restaurant Function Hall  
1219 MacArthur Highway, Balibago, Angeles City  
Nov. 25-27, 1998

## ROSELYN M. BALANSAG

- AGAP's Seminar-Workshop on the New Tax Law  
Tejeros Hall, AFP Commissioned Officers Clubhouse  
Camp General Emilio Aguinaldo, Q.C.  
June 5, 1998

## SALIOBAN E. BLAH

- National Dialogue on the Revised AMMRO I  
Bureau of Soils and Water Management Training  
Center, Q.C.  
March 30-31, 1998

## JESUS REY A. BRONOLA

- 3rd 1998 PATAP-CSC Symposium  
CSC's Function Rm., Batasan Hills, Q.C.  
July 17, 1998
- LCD and Moving Camera  
4th Flr., SEI Conference Room  
July 6, 1998

## EDEL MIRA B. BUSTAMANTE

- 3rd 1998 PATAP-CSC Symposium  
CSC's Function Rm., Batasan Hills, Q.C.  
July 17, 1998
- WIPO Regional Seminar  
Manila Galleria Suites  
Nov. 19-21, 1998

## LEAH SOCORRO AL. CAYANAN

- Group Study Exchange (GSE) Program of Rotary Club  
Perth, Australia  
April 15-May 20, 1998

## JOSEPHINE T. CHUA

- Oracle Software  
5th Flr. Pacific Star Bldg., Gil Puyat Ave.  
July 13-17, July 20-24, July 28-31, 1998
- S & T Writing Seminar-Workshop  
SEI Conference Room  
Dec. 10-11, 1998

## RODELIO G. DE ASIS

- LCD and Moving Camera  
4th Flr., SEI Conference Room  
July 6, 1998
- S & T Writing Seminar-Workshop  
SEI Conference Room  
Dec. 10-11, 1998

## GERALD P. DE LA CRUZ

- LCD and Moving Camera  
4th Flr., SEI Conference Room  
July 6, 1998

## MA. DAISY A. DEMONI

- 1998 Intel International Science Engineering Fair  
(Intel ISEF)  
Fort Worth, Texas  
May 10-16, 1998
- S & T Writing Seminar-Workshop  
SEI Conference Room  
Dec. 10-11, 1998

## NONA L. DOCOR

- AGAP's Seminar-Workshop on the New Tax Law  
Tejeros Hall, AFP Commissioned Officers Clubhouse  
Camp General Emilio Aguinaldo, Q.C.  
June 5, 1998

## JOSEPHINE S. FELICIANO

- S & T Writing Seminar-Workshop  
SEI Conference Room  
Dec. 10-11, 1998

## GINA M. LAUREL

- National Dialogue on the Revised AMMRO I  
Bureau of Soils and Water Management Training  
Center, Q.C.  
March 30-31, 1998

## RAYMUND R. LEGASPI

- Orientation-Seminar on Personnel Data  
Management System  
CAT Room 2, 3rd Flr., CSC-NCR Bldg.  
25 Kaliraya St., Q.C.  
June 22-23, 1998

## EDWIN B. LOPEZ

- LCD and Moving Camera  
4th Flr., SEI Conference Room  
July 6, 1998

## PETRONILA C. MANINGAS

- S & T Writing Seminar-Workshop  
SEI Conference Room  
Dec. 10-11, 1998

## LUISA G. MARAVILLAS

- National Dialogue on the Revised AMMRO I  
Bureau of Soils and Water Management Training  
Center, Q.C.  
March 30-31, 1998

## RODEL M. MIRABEL

- LCD and Moving Camera  
4th Flr., SEI Conference Room  
July 6, 1998

## AMPARO F. OLARTE

- LCD and Moving Camera  
4th Flr., SEI Conference Room  
July 6, 1998
- S & T Writing Seminar-Workshop  
SEI Conference Room  
Dec. 10-11, 1998

## VERGEL P. REBUTA

- Programming  
5F L&G Bldg., 107 Aguirre St., Legaspi Vill.  
Makati City  
Oct. 19-23, Nov. 16-19, 1998
- S & T Writing Seminar-Workshop  
SEI Conference Room  
Dec. 10-11, 1998

## LUZ S. RIMORIN

- 25th National Conference on Public  
Personnel Administration  
Rib-Eye Restaurant Function Hall  
1219 MacArthur Highway, Balibago, Angeles City  
Nov. 25-27, 1998
- S & T Writing Seminar-Workshop  
SEI Conference Room  
Dec. 10-11, 1998

## KRISTAN C. RODILLO

- LCD and Moving Camera  
4th Flr., SEI Conference Room  
July 6, 1998

## JOSE REY G. ROSAL

- LCD and Moving Camera  
4th Flr., SEI Conference Room  
July 6, 1998

## MA. CECILIA M. SACOPLA

- LCD and Moving Camera  
4th Flr., SEI Conference Room  
July 6, 1998
- S & T Writing Seminar-Workshop  
SEI Conference Room  
Dec. 10-11, 1998

## MARIETTA A. SUMALLO

- S & T Writing Seminar-Workshop  
SEI Conference Room  
Dec. 10-11, 1998



# Organizational Chart

