

Shaping the Future Now

Science Education Institute

Department of Science and Technology

Annual Report



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Science and technology (s&t) is an integral part of contemporary lifestyles. From home entertainment to kitchen appliances, from home-based biotechnology projects to student databases, from office networks to e-commerce... Our present reliance on these things, and the increasingly information-driven global marketplace, place serious demands on our ability to understand, appreciate, and promote s&t.

next five years the Plan shall provide the direction in scientific and technological activities to fulfill the department's social contract, the commitment of President Joseph Estrada to provide a better life for Filipinos. One of the three main strategies of the MTP is "Strengthening and Sharpening of Focus of Continuing Programs." It seeks to make existing DOST programs more relevant to and supportive of the government's development priorities.

Strengthening and Sharpening of Focus

A Framework of Continuing Programs

The framers of the 1987 Constitution, though still years away from the Internet generation, nevertheless recognized the importance of s&t in national development. "The State shall give priority to education, science and technology, arts, culture and sports to foster patriotism and nationalism, accelerate social progress and promote total human liberation and development," states Article II Section 17.

Eleven years later, s&t has only become more important, and our country's need for it, more urgent. This need has been elucidated in the vision adopted by the Department of Science and Technology (DOST): "A competent and competitive science community with a social conscience."

In pursuance of this vision, the DOST, under the helm of Secretary Filemon Uriarte Jr., outlined the DOST Medium Term Plan (DMTP) for 1999 to 2004. Secretary Uriarte said that for the

Two of this strategy's six programs are s&t Human Resources Development" and "s&t Promotion."

The "s&t Human Resources Development" program is the DOST's response to the Medium-Term Philippine Development Plan's call on the government to "complement its competition (and other) policies by programs aimed at encouraging investment in education and s&t in order to raise Philippine productivity to international benchmarks."

Included in this program are the provision of scholarships to students pursuant to Republic Act 7687, training of more science and mathematics teachers under Project RISE (Rescue Initiatives in Science Education), and the maintenance of the Philippine Science High School campuses and the plan to better rationalize the establishment of new campuses.

The program also provides the refocusing of the DOST of its human resources development program towards the upgrading of national capability in computer design and engineering and related fields.

Under "s&t Promotion," programs that aim to develop and enhance s&t awareness and literacy will be continued. These include s&t week celebrations and caravans, technology fairs, youth programs and science centrums. The DOST will also strengthen its communica-

tioning s&t culture by supporting students in local and international competitions, and conducting science seminars; and information dissemination through media and other venues.

With the DMTP as framework, the SEI is securely on track as it works to realize its vision to develop a scientifically and technologically literate citizenry, and accelerate the development of s&t human resources needed for social and economic growth.

for the Future

Shaping The Future Now

tion and information programs.

The Science Education Institute (SEI), the DOST's arm in laying down the foundation of science and technology education in the country, has been implementing programs and projects that fall under these two broad programs of the DMTP. The substantial accomplishments and contributions of the SEI in the field of s&t in its 11 years of existence have been widely acknowledged.

Among its ongoing programs are: providing scholarships and training for students in science and technology; Project RISE and other faculty-development programs; promoting information technology through the Mobile Information Technology Classroom and similar programs; science education researches; upgrading and modernizing of laboratory equipment and facilities of selected teacher-training institutions, science-oriented high schools and other special schools; pro-

These goals are embodied in the SEI's rallying cry, "Shaping the Future Now," and the SEI is confident that with the support of the government and private sector, s&t education in the country will continue to produce the quality human resources critical to the country's development requirements, and, in the long-term, be a significant contributor to every Filipino's improved quality of life.

Julian Huxley, the first Director-General of the United Nations Educational, Scientific and Cultural Organization (UNESCO), summed it up way back in 1946: "The application of scientific knowledge offers the principal means of improving men's living conditions."



From the Secretary

To develop competent and highly-trained science and technology human resources, and play a catalytic role in improving the delivery of science education at all levels. This is the mandate of the Science Education Institute (SEI): two seemingly simple tasks that, in reality, demand well-defined plans, effective programs and the extensive cooperation of various sectors.

The year in review marks SEI's 11th year of successfully developing the needed human resources to sustain the country's drive to economic prosperity and global competitiveness. It is also the period when the Institute begins to take up the challenges of the new millennium.

In response to the changing demands in the new millennium the SEI, aside from successfully implementing its scholarship and teacher training programs, has also redirected some of its efforts towards the development of new approaches in science education using information and communication technology. Projects along this line have been incorporated into the 2nd Science and Technology Education Plan (STEP 2), which is the blueprint of the country's bid to develop s&t competence for competitiveness.

For these efforts, for achieving the targets that it has set for the year, and for taking up the challenges of the future, I would like to extend my warmest congratulations to SEI.

A handwritten signature in black ink, appearing to read 'Filemon Uriarte, Jr.'.

Dr. Filemon Uriarte, Jr.

Secretary

Department of Science and Technology

From the Director

As a vehicle for national development, science and technology (S&T) education in the Philippines approached the turn of the millennium fueled by its successes and accomplishments, on course with its clearly mapped out goals, and constantly challenged by prevailing conditions.


The Science Education Institute (SEI), tasked to support, improve, and guide science education in the country, charted a steady course in 1999. The SEI made substantial progress in its continuing programs, launched several new projects, and laid the groundwork for other projects slated for completion during the following year.

Its flagship scholarship program under the Science and Technology Scholarship Act or RA 7687, successfully supported 8,485 scholars in 1999, even as 1,777 of the scholars supported the previous year (1998) graduated. Moreover, the institute's various other undergraduate scholarship programs benefited 1,450 scholars. The institute also came closer to the reality of highly efficient and easy management of the scholarship programs, as work was done on the development of Phase III of the Scholarship Administration System (SPAS).

In the bid to bring more rural communities into the IT world, the SEI formally deployed the Pilot Mobile Information Technology Classroom (MITC) to Butuan City, completed the fabrication of three additional MITC units, upgraded the hardware at the Model IT Classroom at the University of the Philippines College of Education in Diliman, and provided books, equipment, upgraded facilities to selected schools. On the other hand, Philippine student-delegates and contestants figured prominently in the international S&T arena, bringing home major awards.

These and other accomplishments kept us busy in 1999, even as we invested time and effort into The 2nd Science and Technology Education Plan (STEP 2), our better-defined action agenda for further developing the country's S&T education from 2000 to 2004. As we prepare to embark on STEP 2, this momentary pause — to review our operations in 1999, see how far we have gone, and acknowledge the support of our government and private partners — actually serves to sustain our momentum as we journey on towards a science-oriented, technologically competent, and globally competitive Philippines.




Dr. Ester B. Ogena
Director
Science Education Institute

Highlights of Accomplishments

Support to scholars under Republic Act (RA) 7687 and other scholarship programs

For Calendar Year (CY) 1999, under RA 7687, 1,777 scholars graduated; 1,700 in March and 77 in October. As of December, the total number of ongoing scholars was 8,485. At the same time, 1,450 scholars were supported under the regular undergraduate scholarship program of SEI, and of this number, 195 graduated.

Adoption of Science and Technology Education Plan (STEP) 2

While successfully implementing both its new and continuing programs in 1999, the SEI also began formulating an action agenda on science and technology education for 2000 to 2004. Known as the 2nd Science and Technology Education Plan (STEP 2), it is envisioned to be a well-defined strategic plan for the further development of the country's

Development of the Scholarship Program Administration System (SPAS) Phase III

This phase provided for the development of a security program for the effective utilization of the Scholarship Program Administration System (SPAS) by the intended users. The security program is designed to ensure the integrity of the S&T scholarship database. Previously, work had been focused on integrating SPAS I and II, putting in place the applications for processing the undergraduate and graduate programs data, and training the intended users. Encoding was also done for completed modules of the application.

Performance

S&T education. It not only succeeds STEP which was implemented from 1994 to 1998, but more importantly, draws invaluable lessons from the first plan, as inputs to make the objectives of STEP 2 more achievable.

Deployment of the Pilot Mobile Information Technology Classroom (MITC)

The Pilot Mobile Information Technology Classroom (MITC) was formally launched at the Sumilihon Central Elementary School in Butuan City on March 24, 1999. Three additional MITC units — with new features and some design changes — were also fabricated by Filipinas Daewoo Industries Corporation for deployment to other regions.

Upgrading of Model IT Classroom

A project to upgrade the computer hardware at the SEI-funded Model IT Classroom at the University of the Philippines College of Education (UPCoE) in Diliman, Quezon City was approved for funding. Multimedia accessories were also provided under the project.



Reaping of More Awards in International Competitions

The year under review was a banner year for Filipino students who joined international science and mathematics competitions. They reaped a total of 13 awards and recognition from five competitions, as follows:

- 1999 Australian Mathematics Competition (AMC): Three gold medals
- 30th International Physics Olympiad (IPHO): Silver medal and honorable mention
- International Micromouse Competition (IMC): Silver Cup
- Search for SEAMEO Young Scientists (SSYS): Best Contribution Award with RM1,000
- International Science and Engineering Fair (ISEF):
 1. Third Place, Grand Awards, Environmental Science Category
 2. Second Place, from the Patent and Trademark Office of the US Department of Commerce
 3. Third Place, from the Society of Mining, Metallurgy and Exploration
 4. Third Place, from the Society of Exploration Geophysicists
 5. Second Place, Grand Awards
 6. Intel Fellows Achievement Award for the vision and innovation in the project



Milestone

Human Resources Development in Science and Technology



Until recently, human resource development was generally seen as a function of economic development. It seemed that economic development was the ultimate end for governments and peoples to achieve.

That changed in 1998. That year, as part of the wrenching soul-searching that accompanied the crisis that began in July 1997, a number of high-profile international organizations and institutions—especially the World Bank—began advocating a paradigm shift. The focus ceased to be on economic development per se, but rather, how economic gains could be translated into an improved quality of life, better access to resources, and enlarged choices, particularly for the poor.

Another international body, the United Nations Educational, Scientific and Cultural Organization

(UNESCO), has been working for an educated population, aware of its fundamental rights, sharing in the fruits of democracy; and peoples of the world sharing equally the benefits of science and technology, to improve overall health and well-being.

In the Philippines, the government, the private sector and other concerned agencies have been making substantial investments in human resources development in s&t. Effort and resources have also been put into providing s&t education and training to teachers—the students' main facilitators in learning.

For the past 11 years, the Science Education Institute has been providing s&t scholarships, grants and training to a growing number of students and teachers. After SEI helped plant the seeds of s&t education in the country for many years, the country is starting to reap the fruits.

Science and Technology Scholarship Act (Republic Act 7687)

During its first year of implementation, the Science and Technology Scholarship Act (Republic Act or RA 7687) benefited 156 scholars coming from the 19 poorest of the poor provinces of the country. Five years later, by the end of Calendar Year (CY) 1999, the Science Education Institute was supporting 8,485 ongoing scholars.

It must be noted, though, that the scholarship program remains as much concerned with quality as it is with quantity.

In March and October 1999, the scholarship program mandated by this Act produced 1,700 and 77 scholar-graduates respectively, in the Bachelor of Science, Technician and Technical courses. Recognition ceremonies, dubbed as "In Touch With Excellence", were held in honor of outstanding scholar-graduates on July 9, 1999, at the STTC-ISMED, UP Diliman, Quezon City. These achievers included 1 Magna Cum Laude (BS), 24 Cum Laude (BS), and 121 technician and technical graduates bestowed with various academic honors.

Of those who took the scholarship qualifying examination in CY 1999, 5,207 qualified for the program. Of this number, only 2,074 were awarded the scholarships, owing to budgetary considerations. A total of 2,036 availed of the scholarship for Academic Year (AY) 1999-2000.

The s&t Scholarship Examination for AY 2000-2001 was simultaneously administered on November 9, 1999 at 120 test centers nationwide. Out of the 29,194 applicants, a total of 25,880 took the examination.

All throughout the month of May, the 1999 Summer Orientation and Enrichment Program (SOEP) was held simultaneously in all regions of

the country. This was for the benefit of the RA 7687 freshmen scholars who were to enter school in June 1999.

Meanwhile, issues and concerns relevant to the effective implementation of the s&t scholarships took the spotlight at the reorientation meeting of regional coordinators and project staff on the Management of the s&t Undergraduate Scholarships. The meeting was held on September 28-30, 1999 at the Crown Peak Hotel, Subic, Olongapo City. It served as an appropriate venue for updating the regional staff on scholarship policies and implementing guidelines.

More effective implementation of the scholarships was also the aim of the University Coordination Scheme.

Under this scheme, the direct management of the DOST-SEI scholarships was decentralized effective the start of AY 1999-2000. The decentralization involved 11 identified academic institutions in the National Capital Region, where a large number of the program scholars are enrolled.

To this end, a memorandum of agreement (MOA) was signed between SEI and the 11 institutions, providing for a University Coordinator and a Core Group Project Director in:

- Adamson University
- Ateneo de Manila University
- Mapua Institute of Technology
- Meralco Foundation Institute
- Pamantasan ng Lungsod ng Maynila
- Philippine Normal University
- Polytechnic University of the Philippines
- Rizal Technological University
- Technological University of the Philippines
- University of Santo Tomas

Undergraduate Scientific Manpower Development Program

Aside from the flagship s&t Scholarship program, another major source of world-class s&t human resources is the Undergraduate Scientific Manpower Development Program (Project 5801). Project 5801 targets students for scholarships in basic sciences, applied sciences, engineering, and science education.

For CY 1999, the program produced 93 BS scholar-graduates. The numbers of scholars who graduated with honors are: 1 Summa Cum Laude; 10 Magna Cum Laude (two of whom received the 1999 BPI Science Award); 26 Cum Laude.

A total of 1,053 ongoing BS scholars were supported under Project 5801.

There were 585 qualifiers for CY 1999, and of these, 316 availed of the scholarship for AY 1999-2000.

Other Undergraduate Scholarship Programs

Complementing the RA 7687 Scholarship Program and Project 5801 are several other SEI-sponsored programs. Over the years, these programs have consistently contributed to the country's s&t intellectual pool:

- **Junior Level Assistance Program (JLAP) in Engineering.** During the year, a total of 83 scholars were supported under the program. A total of 31 scholars completed their engineering courses. Of this number, eight graduated cum laude.

- **Cooperative Pre-Service Education for Science and Mathematics Teachers (Project 8102 Ed.).** Of the 27 scholars who graduated under the program, 15 were cum laude (five BSE Physics for Teachers, and 10 BSE Physics and Technology). The project supported a total of 109 physics teaching scholars during the year.
- **Partial Scholarship for BSE Major in Physics (Project 9001 Ed.).** During the year, a total of 17 scholars were supported under the program. Of the 14 who graduated, 6 were cum laude.
- **Scholarship Program for Science and Mathematics Education, Major in Physics (RSTC).** Of the 30 scholars who graduated under this program in 1999, five graduated cum laude. There were 42 ongoing scholars and 26 new awardees.
- **The BSE Physics Scholarship for UE Students.** This program was supporting 10 scholars by the end of the year. There were also 29 new awardees who received their Special Scholarship Grants for Physics Teaching.

Faculty Development Programs

The SEI also initiates, supports, and implements programs designed to enable science and mathematics teachers to pursue graduate studies to improve the quality of their teaching in these subject areas. These programs are:

- **Faculty Development Program for Teacher Educators of the RSTCs.** The Ph.D. in Science Education program (Residential Program) is a continuing scholarship program offered yearly to the science and mathematics faculty of the Regional Science Teaching Centers (RSTCs) and selected Teacher Education Institutions (TEIs).

It aims to develop competent educators, researchers and administrators in science education. The program is implemented through the UP College of Education (UPCE) in Diliman, Quezon City, and De La Salle University (DLSU) in Manila. As of yearend, there were 32 ongoing scholars: 18 enrolled at the UPCE, and 14 at the DLSU.

In 1999, the following scholars completed the Ph.D. program:

1. Stanley P. Calacal, Ph.D. in Science Education Major in Physics, Mariano Marcos State University;
2. Leticia V. Catris, Ph.D. in Science Education Major in Physics, Philippine Normal University;
3. Ma. Anabel M. Espinosa, Ph.D. in Science Education Major in Mathematics, Western Mindanao State University;
4. Florentina C. Lim, Ph.D. in Science Education Major in Biology, Western Mindanao State University;
5. Ligaya B. Diculen, Ph.D. in Science Education Major in Physics, Mariano Marcos State University; and,
6. Amelia A. Dorosan, Ph.D. in Science Education Major in Physics, Bicol University.

- **Alternative Approach to Faculty Development Program (Distance Education Mode).** This is a Ph.D. in Science Education program implemented via the Distance Education Mode that is offered at the UP Open University, Los Baños, Laguna.

In 1999, there were 48 ongoing scholars from different RSTCs and TEIs. The scholars who enrolled in AY 1996-1997 (the first batch) are scheduled to take the comprehensive examinations in February 2000.

- **Master's Program for Faculty Members of Selected Teacher Education Institutions (TEIs).** First implemented in the first semester of AY 1995-1996, the program seeks to bolster the capability of TEIs to develop competent science and mathematics classroom teachers.

In 1999, 10 nominations were received, seven of whom qualified for the program. Of these qualifiers for AY 1999-2000, three enrolled during the first semester, and one enrolled during the second semester.

By yearend, there were 29 ongoing scholars, six of whom were taking their academic units, while the remaining 23 were in the various stages of their researches. The program produced three graduates in 1999.

Below is a summary of the status of the scholars.

SUBJECT	ENROLLED		ONGOING		GRADUATED	
	FEMALE	MALE	FEMALE	MALE	FEMALE	MALE
Biology	1		5			
Chemistry		1	5	2	1	
Physics		1	1	4		1
Mathematics	1	1	8	4		1
TOTAL	2	3	19	10	1	2



- **Enhancement of Practical Works in Science and Mathematics Education at the Regional Level.** The project is an inter-agency effort with a twofold aim: first, to strengthen the use of practical works in teaching science and mathematics in the elementary and secondary schools; and second, to improve the capabilities of science and mathematics teachers, especially the trainers, by developing their skills in improvising and maintaining science and mathematics equipment.

Joining hands in the program are the Department of Science and Technology-Science Education Institute (DOST-SEI), Department of Education, Culture and Sports (DECS) and Philippine National Volunteer Service Coordinating Agency (PNVSCA) through Japan International Cooperation Agency-Japan Overseas Cooperation Volunteers (JICA-JOCV), and the three model RSTCs, namely, Bicol University (BU) in Region v, West Visayas State

University (WVSTU) in Region VI, and Ateneo de Davao University (ADDU) in Region XI.

The project ran from March 1994 to May 1999. The Philippine and Japanese governments, however, agreed on the need for a two-year extension of the project.

From January to December of 1999, 12 JOCVs were dispatched to the three RSTCs and conducted the following:

1. Visits to 121 elementary and secondary schools in the three regions to observe science classes and facilities of the schools, and assess the extent of the schools' need for assistance;
2. Assistance to a total of 1,296 teachers in conducting practical work in the Regional Training Program (RTP), Division Training Program (DTP), Project RISE and its echo training, Mobile Training Program, Outreach Training Program, Cluster Training Program, and the Delivery Skills Training;

At Bicol University,

the science and

mathematics teach-

ers watch intently as

the JOCV volunteer

demonstrates an

experiment in chem-

istry using the practi-

cal works approach.

3. Visits and assistance to 29 teachers in 20 schools in the three regions. Visits ranged from three to four days a week for BU and ADDU and one to five days a month for WVSU. Since this is the focus of the extension period, the teachers were given continuous individual assistance; and
4. Assistance to 766 teachers in the conduct of other school activities. These included a workshop on the conduct of science experiments, a science magic show, sky gazing and stargazing programs, a science circus show, and the publication of newsletters.

During the same twelve-month period, JICA provided P708,130.00 for the purchase of materials and consumables, printing of handouts and booklets, official trips of the JOCV members, and other expenses.

Science and Technology Human Resource Development Planning Project.

For the year 1999, the Science and Technology Human Resource Development Planning Project focused on the sectoral approach in determining demand and supply projections of s&t human resources. Two sectoral studies were conceptualized and commissioned to respectable institutions, as follows:

Title of Study: Projection Study on Scientific and Technological Manpower Requirements of the Philippine Private Sector: 2000-2010
Institution: UP Statistical Center Research Foundation, Inc.

Title of Study: Projection Study on Scientific and Technological Human Resources of Philippine Government Agencies: 2000-2010
Institution: UP Population Institute

In relation to the study on s&t government human resources, a series of workshops was spearheaded by SEI to train focal persons—from government line agencies, government-owned-and-controlled corporations, local government units and defense units—in accomplishing and familiarizing themselves with the three survey questionnaire forms required for this study.

A total of four workshops were conducted from October to November 1999, two in Luzon and one each in Visayas and Mindanao. There were 367 representatives from 287 government offices who attended the workshops, most of them Human Resource Management Officers (HRMOS), or personnel officers.

The study questionnaires were also sent to another 201 government offices, bringing to a total of 488 the offices participating in the study. As of December 1999, 45 agencies had already accomplished the required questionnaires. (This figure is expected to increase significantly by January 2000, the deadline set for submitting the forms.)

Also undertaken in 1999 was the refinement of the "Projection Study on Scientific and Technological Human Resources of Philippine Industries: 1998-2003," which had been earlier commissioned to the University of Asia and the Pacific. The findings of the study will be submitted in February 2000.

In the first quarter of 1999, the 1997 monograph entitled "National Requirements for Teacher Training in Science and Mathematics" was revised. It presents simplified approaches in determining demand and supply of science and mathematics teachers for elementary and secondary schools in Philippine private and public basic education.

Project Rescue Initiatives in Science Education (RISE) Summer 1999

Project Rescue Initiatives in Science Education (RISE) provides an intensive, 180-hour training program aimed at increasing the competence and confidence of science and mathematics teachers to teach these subjects even if they are not specialists in them.

The strategy is another effort of the SEI to develop s&t human resources and make them globally competitive. That is, the students of the teachers who were trained under the program together with their teachers should stand out in the international s&t arena.

Project RISE is spearheaded by the Science Education Institute of the Department of Science and Technology (DOST) together with the 15 DOST regional offices, the Department of Education, Culture and Sports (DECS) National Office and its 16 Regional Offices, 15 Regional Science Teaching Centers (RSTCs) and 11 selected Teacher Education Institutions (TEIs) all over the country.

A total of 4,807 science and mathematics teachers were trained in elementary science, elementary mathematics, high school general science, biology, chemistry, physics, and mathematics (I, II, III, and IV) in the summer of 1999.

The DECS Regional Office and the Philippine Business for Social Progress (PBSP) sponsored the training of 65 teachers under the program.

The program was granted accreditation by the Professional Regulation Commission (PRC) for three years starting 1999. Participants who completed the training program and passed the entire requirements and evaluation test were given Continuing Professional Education (CPE) credit units by PRC.

The following 26 teacher training institutions conducted the program nationwide:

TRAINING INSTITUTIONS	REGIONS CATERED	NUMBER OF TEACHERS TRAINED			TRAINING INSTITUTIONS	REGIONS CATERED	NUMBER OF TEACHERS TRAINED		
		ES	HS	TOTAL			ES	HS	TOTAL
Mariano Marcos State University	I	140	172	312	Leyte Institute of Technology	VIII	0	53	53
Saint Mary's University	II	176	139	315	Western Mindanao State University	IX, ARMM	105	198	303
Central Luzon State University	III	139	172	311	Ateneo de Zamboanga	IX	35	70	105
University of the Philippines at Los Baños	IV	0	105	105	Xavier University	X, CARAGA	105	279	384
Far Eastern University	IV	0	70	70	Ateneo de Davao University	XI, CARAGA	210	0	210
University of the East	IV	35	68	103	Notre Dame of Marbel University	XI	0	175	175
Bicol University	V	105	140	245	University of Southern Mindanao	ARMM, XI, XII	140	35	175
Aquinas University	V	35	35	70	Mindanao State University	ARMM, XII	140	70	210
West Visayas State University	VI	280	0	280	Mindanao State University-IRR	X, XII	105	0	105
University of the Philippines, Visayas	VI	0	35	35	Philippine Normal University	NCR, IV	140	0	140
University of San Carlos	VII	140	210	350	University of the Philippines	NCR, IV	105	34	39
University of Eastern Philippines	VIII	70	93	163	De la Salle University	NCR	0	112	112
Leyte Normal University	VIII	70	0	70	Saint Louis University	CAR	113	154	267

Development of the Scholarship Program Administration System (SPAS) Phase III

With the scholars' profile and static data already put in place in 1998, SPAS Phase III was undertaken in 1999, with emphasis on the integration of a security program into the system. This was mainly to ensure the integrity of the database.

This third phase entailed the setting up of specific controls that will, on one hand, provide views exclusively to authorized users who need to access specific information as defined by the SEI's Scholarship and Training Division (STD), and on the other hand, prevent any unauthorized alterations in the encoded data.

The development work started in April 1999 and involved the following activities: requirements detailing with STD staff; system design and program development by Oracle; and test runs beginning July 1999 jointly by

Oracle and the SEI MIS Group. Specific technical problems are being addressed by the Oracle consultants as encountered in the series of tests conducted, which include an end to end test for Phases I to III. The following activities are scheduled for completion prior to turnover of SPAS to STD and STED:

- Installation of a web-enabled application by Oracle
- On-line test of SPAS in three regions
- SPAS Users' Training
- SPAS System Administrators' Training

Short-term Projects/Grants

The DOST-SEI extended financial support to agencies and organizations for their conferences, workshops and lecture series that covered the printing of proceedings, supplies and materials, honoraria of speakers and other operational expenses.

These activities were proposed by teacher organizations in the areas of mathematics, physics, teacher education, and special education. Generally, the activities were held for the following purposes: to plan for the next millennium, upgrade and update knowledge, and to disseminate current researches done in the sector.

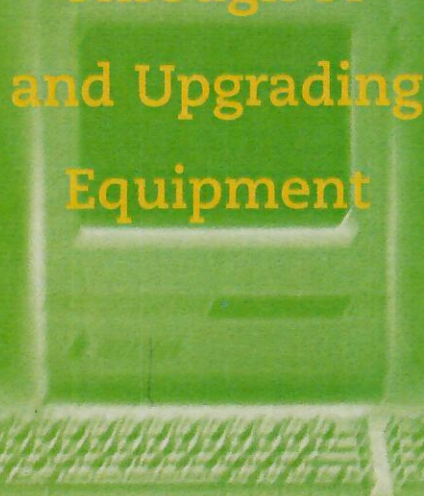
The SEI grantees were the following:

1. Rethinking Mathematics Education in the Philippines Beyond 2000
2. Sixth National Conference for the Gifted
3. International Conference for Teacher Education
4. International Conference in S&T Literacy: Strategies for the 21st Century
5. Frontiers in Science: Lectures for Teachers
6. 17th Samahang Pisika ng Pilipinas National Congress
7. Regional Seminar Workshop in Physics Teaching

Slowly but steadily, the Filipino nation is becoming an active part of the cyber-world. Manufacturing, commerce, education—even basic human relationships—are increasingly becoming dependent on information technologies. The Internet, computerized production lines, cellular phones, and similar technologies: these offer unmistakable advantages. The Asia Pacific Development Information Programme (APDIP), a 42-country initiative developed and funded by the United Nations Development Programme, identified some of the many benefits that information technology offers developing countries like the Philippines (an APDIP member):

- Dramatic improvements in the capacity to access and distribute information locally, nationally, and globally;
- An environment that allows the creation of new channels for trade and economic growth, improved flow of health and education information;
- A venue for sharing experience and expertise at all levels thus minimizing isolation and allowing participation in a larger, global dialogue; and,
- Facilitation of other enabling factors in critical fields such as agriculture and food production, environment, and poverty alleviation.

Enhancing Science and Technology Education Through IT and Upgrading Equipment



With more than 150 million expected Internet users worldwide by the year 2000 (based on the National Information Technology Council's estimate), it is imperative that more and more Filipinos be exposed to, and become competent and comfortable with information technology—as an area of study in itself, as a tool in other areas of learning, and in the service of economic, political, and societal interests.

The Science Education Institute, for its part, is advocating and encouraging the use of information technology in s&t education. The aim is not just to make students computer literate, but also to enhance their learning in s&t—and ultimately, widen their horizons through increased knowledge and a well-cultivated creative sense.

With the support of other related agencies, the SEI launched the Mobile Information Technology Classroom (MITC) as a means of exposing students and teachers in remote areas to the latest information technologies. The SEI also embarked on upgrading facilities at the Model IT Classroom in the University of the Philippines College of Education (UPCoE) in Diliman, Quezon City, and providing science laboratory and audiovisual equipment, as well as books and computer-based teaching modules, to selected schools.

Deployment of the Pilot Mobile Information Technology Classroom (MITC)

The first Mobile Information Technology Classroom (MITC) unit was deployed to Caraga Region by virtue of a memorandum of agreement among the Department of Science and Technology Regional Office, Department of Education, Culture and Sports, local government units, and the Science Education Institute. Under the agreement, these agencies jointly implement, maintain and support the Mobile Information Technology Classroom Project.

The first MITC unit arrived in Butuan City on January 23, 1999, and was formally launched at the Sumilihon Central Elementary School in Butuan City on March 24, 1999. Teachers and pupils from the four provinces and two cities of Caraga underwent training from May to December 1999.

As a mobile facility, the MITC was designed not only to increase computer literacy, but also improve s&t learning across the region. With sufficient support from the local government units, the private sector and other cooperators, the project also maximized the use of

information technology to upgrade the delivery system in science education. For the project's first year, the DOST-SEI provided the financial support that covered the six months salary of the driver, registration, insurance, diesel, and gasoline.

Additional MITC Units

Recognizing the need to reach more schools in the regions in the soonest possible time, the SEI supported the fabrication of three additional MITC units. Filipinas Daewoo Industries Corporation worked on fabricating the three units from September to December 1999.

The new units are air-conditioned and equipped with a TV set, VHS set, and public address system. A notebook computer, three multimedia projectors, three projector screens, three generator sets and one printer were purchased to provide the actual dimensions needed in the designing, modeling and building of computer tables, storage and housing for the MITC units. Provisions were also made for additional equipment to be integrated into the MITCs by the year 2000.

1 Meeting with Regional

DOST/DECS officials regarding the deployment of the three MITC units

2 Work on these three

additional MITC units was in full swing by yearend 1999. The new units were designed with key improvements on the pilot MITC.



An upgraded air conditioning system complements the comfortable interior of this additional MITC unit.



Like the pilot MITC unit, the additional units come equipped with multimedia facilities, computer notebooks and software, and trained facilitators. However, these additional MITCs also feature improvements on the pilot unit, including:

- 1 different color schemes both on the body of the bus and in the interior, using eye-catching color combinations;
- 2 a higher ceiling designed to accommodate the multimedia projector housing;
- 3 cooling facilities for the storage area; and,
- 4 an upgraded air-conditioning system.

Upgrading of the Computer Hardware in the Model IT Classroom at the UP College of Education

Like its counterpart based at the Philippine Normal University, the Model IT Classroom at the UP CoE has been contributing to efforts to produce s&t manpower who are equally competent and confident when it comes to IT concepts and actual usage.

In December 1999, the SEI provided funds for the upgrade of the computers at the UP CoE Model IT Classroom. The upgrading scheme involved increasing the random access memory of the computers to at least 32-MB and providing multimedia accessories like CD-ROMs, sound cards, and communication headset.

Development and Replication of Computer-Based Teaching (CBT) Modules on Selected Topics in Biology, Chemistry, Mathematics and Physics

Complementing the aforementioned efforts, the program Development and Replication of Computer-Based Teaching (CBT) Modules was successfully initiated in 1999. Two CD-ROMs containing selected topics in high school Mathematics and Chemistry were submitted by the Training Solutions Group to the SEI. Work was also done on two other CDs.

Science and Mathematics teachers from the Quezon City Science High School, Parañaque National High School and Bucal National High School, together with subject specialists from the UP Institute of Science and Mathematics Education Development (UP ISMED) evaluated the CBTs at different stages of their development.

The Mathematics CD features the following topics:

1. Absolute Value
2. Logarithm

3. Polynomials
4. Linear Inequality
5. Quadratic Equation
6. Linear Programming
7. Tangent and Secant Lines
8. Permutation and Combination, and
9. Pythagorean Theorem

The Chemistry CD, on the other hand, contains the following topics:

1. Chemical Bonding
2. Heat Exchange
3. Atomic Theory
4. Solutions
5. Energy, and
6. Dissolution

The CDs will be replicated for distribution to the network of s&t-oriented high schools, other schools with computers, and the Regional Science Teaching Centers.

Provision of Science Laboratory/Audiovisual Equipment and Books to Selected Secondary Schools in Mindanao

Computer technology is a vital cog in the science and mathematics education machinery, along with other effective means of delivering information, enhancing comprehension, and honing skills relevant to s&t. These other means include science laboratory equipment, books, and audiovisual equipment and materials—all of which the SET provided to sixteen selected secondary schools in Mindanao, in assistance packages worth P200,000 per school.

The project aims to upgrade the science and mathematics education of teachers and students, provide them the opportunity to experience the actual manipulation of the

equipment, and update them in the latest developments in science and mathematics teaching.

The grant to the schools consisted of the following:

1. Audiovisual equipment and materials grant that included 1 29" television set, 1 VHS player and two sets of video tapes, with one set containing 11 volumes of Science World video tapes, and the other set, containing selected titles and lessons on science and mathematics;
2. Thirty-nine copies/titles of science and mathematics books;
3. Various laboratory equipment (such as overhead projector, microscope, and other equipment).

The schools given assistance are as follows:

REGIONS	SCHOOL	TYPE OF GRANT
IX	Lamitan National High School	AV, Books and Laboratory Equipment
	Maluso National High School	Books and Laboratory Equipment
	Begang National High School	Books and Laboratory Equipment
CARAGA	Del Monte National High School	AV, Books and Laboratory Equipment
	Bislig National High School	AV, Books and Laboratory Equipment
	Bayugan National Comprehensive High School	Books and Laboratory Equipment
	Talacogon National High School	Books and Laboratory Equipment
	Madrid Provincial High School	Books and Laboratory Equipment
	Unidad National High School	Books and Laboratory Equipment
	Sulu High School	AV, Books and Laboratory Equipment
ARMM	Luuk National High School	Books and Laboratory Equipment
	Batu-Batu National High School	Books and Laboratory Equipment
	Manuk-Mangkaw National High School	Books and Laboratory Equipment
	Parang National High School	Books and Laboratory Equipment
	Pangutaran National High School	AV, Books and Laboratory Equipment
	Unmat National High School	AV, Books and Laboratory Equipment

Provision of Books to Selected Secondary Schools in the Regions

The need to bring Filipino s&t literacy to competitive world class levels cuts across economic and geographical boundaries. Recognizing this, the SET actively reaches out to teachers and students with minimal or no access at all to learning materials by providing books and references that feature new trends in science, technology, and the study of the environment.

The recipient schools are located in far-flung areas and do not have books and references. Each school was given approximately P50,000 worth of books and other reference materials.

CAR	Masla National High School Pilar Rural High School Suyo-Ankileng National High School Extension	Masla, Tadian, Mountain Province Pilar, Abra Kin-iway, Besao, Mountain Province
Region I	Don Salustiano Memorial High School Banayoyo High School Libas High School	Piddig, Ilocos Norte Banayoyo, Ilocos Sur San Carlos City, Pangasinan
Region II	Dupax del Sur National High School Callang National High School Sanchez Mira National High School	Dupax del Sur, Nueva Vizcaya San Manuel, Isabela Sanchez Mira, Cagayan
Region III	Emilio C. Bernabe High School Maguinao-Cruz-na-Daan High School San Isidro High School	Bagac, Bataan San Rafael, Bulacan Lupao, Nueva Ecija
Region IV	Pulot National High School San Jose National High School Bulalacao National High School	Espaniola, Palawan San Jose, Romblon Bulalacao, Oriental Mindoro
Region V	Bonga National High School Guinlajan High School Saban National High School	Bacacay, Albay Guinlajan, Castilla, Sorsogon Oas, Albay

Region VI	Estancia National High School Caluya National High School Bungsu-an National High School	Estancia, Iloilo Caluya, Antique Dumarao, Capiz
Region VII	Magsico National High School Tambongan High School Santiago Delmo Memorial High School	Magsico, San Fernando, Cebu Tambongan, Candijay, Bohol Maluay, Zamboanguita, Negros Oriental
Region VIII	Limasawa National High School Trinidad National High School Malabag National High School	Limasawa, Southern Leyte Trinidad, Calbayog City Malabag, Giporlos, Eastern Samar
Region IX	Limpapa National High School Payao National High School Kalawit National High School	Limpapa, Zamboanga City Payao, Zamboanga del Sur Poblacion, Zamboanga del Norte
Region X	Bancud National High School Lorenzo Tan National High School Don Gerardo Sabal Mem. NHS	Bancud, Malaybalay City Barangay Lorenzo Tan, Tangub City Claveria, Misamis Oriental
Region XI	Baculin Banganga High School Malalag-Cogon National High School	Banganga, Davao Oriental Malungon, Sarangani
Region XII	Salama National High School Sultan Naga Dimaporo National High School Marawi City National High School	Carmen, Cotabato Sultan Naga Dimaporo Municipality, Lanao del Norte Marawi City
CARAGA	St. Christine National High School Marcelina National High School Dapa National High School	Diatagon, Lianga, Surigao del Sur Bayugan, Agusan del Sur Dapa, Siargao Island

Strengthening Capability in Science Education Research

It took 38 years for radio to reach 50 million people, and 13 years for television. The same number of people (50 million) adopted the Internet in just four years. There were 50 pages on the World Wide Web in 1993; today there are more than 50 million. A mere 143 million people logged on to the Internet in 1998; by 2001 the number of users will climb to 700 million.

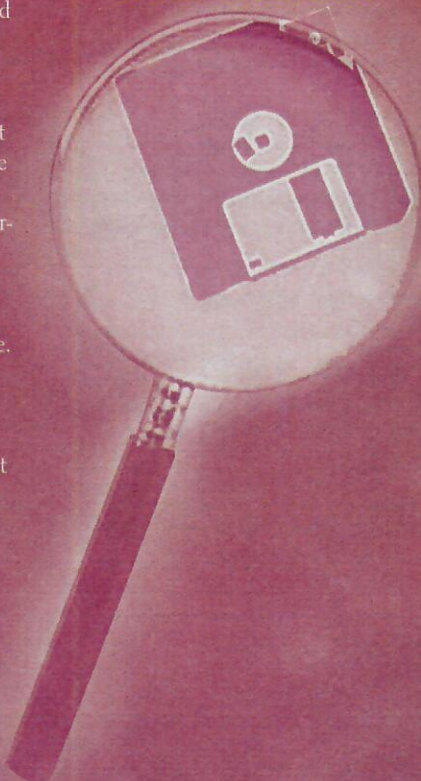
These statements, made by United Nations Secretary-General Kofi Annan in his Millennium Report entitled "We the peoples: the role of the United Nations in the twenty-first century", provide an eloquent picture of the so-called information explosion. It is not just the amount of information available that is astounding; even more astonishing is the pace at which new discoveries are being made, communicated, and put to use.

Such an environment presents both an opportunity and a challenge to the Science Education Institute. This information-driven environment provides very fertile ground for the

institute's research and development activities in science and technology education. The results of these activities are used to improve S&T education itself.

On the other hand, there is the challenge of sifting through, managing, and maximizing available information. And for what purpose? To boost and sustain our educational system's capacity to create scientifically and technologically literate manpower.

In 1999, the SEI worked for these ends as it developed different databases on its various programs and projects, and maintained its existing electronic network with selected government agencies and schools; conducted surveys on S&T education; and supported the Third International Mathematics and Science Study-Repeat. It also launched the Benchmarking Project in Science Education aimed at identifying the best practices in the country's model schools.



Science and Technology Education Plan (STEP) 2

As a blueprint of science and technology education development, the Science and Technology Education Plan (STEP) was formulated in 1994 and implemented until 1998.

STEP addressed the issues besetting the country's S&T education through a package of programs and projects on manpower development, curriculum/instructional materials development, acquisition of physical facilities/equipment, research and development, institution-building and alternative learning systems.

In 1999, an evaluation of the Plan's implementation was undertaken. Based on the evaluation, 35% of the targeted programs and projects included in STEP were implemented. Gaps were identified; factors causing the delay of implementation or nonimplementation of programs and projects were ascertained.

Learning from the lessons of STEP, the interagency committee composed of the Department of Science and Technology-Science Education Institute, Department of Education, Culture and Sports, Commission on Higher Education, National Economic and Development Authority, Technical Education and Skills Development Authority, University of the Philippines-Institute of Science and Mathematics Education and Development, and Regional Science Teaching Center (Philippine Normal University), pursued the formulation of an action agenda instead of another indicative plan.

This action agenda on science and technology education from 2000 to 2004 is now known as STEP 2. It is envisioned to be a focused and well-defined strategic plan for the development of the country's science and technology education.



The initial activities under this project were as follows:

1. Organization of Committees. These are the Advisory Committee, which shall be responsible in giving directions and supervision in the formulation of policies, programs and projects for the Plan and monitoring the implementation of the Plan; and the Technical Planning and Monitoring Committee, which shall provide technical and monitoring support to the Advisory Committee.
2. Conduct of STEP 2 Planning Workshops. To come up with the detailed programming for STEP 2, a series of workshops participated by 12 agencies was held between June and December 1999. By yearend of 1999, these workshops had three significant outputs: the delimitation of the plan to a single rallying point; the identification of priority issues to be addressed by STEP 2 and the corresponding 10 program responses; and the determination of implementable/doable projects per program response.

Inter-agency staff
take part in a work-
shop—actually one of
many activi-
ties leading to the
formulation of
Programs & Projects
for STEP 2

Development of Databases for S&T Human Resources and Science Culture and Strengthening Institutional Capabilities

The Science Education Institute (SEI) has established a system of managing, utilizing and disseminating information generated by its technical divisions. Several databases are stored and continuously being updated in the System.

However, due to the need to accommodate SEI's increasing information generated from various programs and projects, its existing databases were expanded. Hence, the creation of the project Development of Databases related to s&t Human Resources, Science Culture, and Strengthening Institutional Capabilities.

These databases will be made accessible to the students, teachers, researchers, policy or decision makers and other interested individuals through the SEI Web site. During its initial year of implementation, the project laid the groundwork for the development of the following databases:

1. Graduates of the Special Science Classes (SSC) in the 110 s&t Oriented High Schools for AY 1996-97 and 1997-98
2. Science and Math (S&M) Supervisors (regional and division levels)
3. Teacher Education Institutions (TEIs) Offering Bachelor of Secondary Education (BSE) Program
4. Science and Technology Centurms

As part of its database expansion project, the s&t Manpower Assessment Division, in collaboration with the Management Information System (MIS) Unit, conducted the seminar-workshop on the Introduction to Database Design and Development Using MS Access '97.

The workshop aimed to identify the available data in all SEI technical divisions that need to be stored in a database, and to train the Institute's project leaders and technical staff in designing and developing their project databases. The 42 who attended the workshop came up with outputs that included the identification of databases prioritized for development.

Assessment of Scientific and Technical Manpower Resources (ASTMAR)

- **Benchmarking Project in Science Education** In its continuing effort to improve s&t education in the Philippines, the Science Education Institute, in coordination with the Interagency Organizing Committee composed of representatives from the Department of Education, Culture and Sports (DECS), National Academy of Science and Technology (NAST), Fund for Assistance to Private Education (FAPE), and Pundasyon para sa Guro ng Agham at Matematika Inc. (PUNDASYON), launched a landmark study called Benchmarking Project in Science Education.

The project aims to identify the country's model schools and look into these schools' best practices in eight areas: curriculum, equipment, resources, information technology, teacher qualification, school management, delivery modes and assessment.

By yearend, the committee shortlisted the candidate schools for each of the following categories:

Best Public Elementary School (Central)
Best Public Elementary School (Non-Central)
Best Private Elementary School
Best Public Secondary School (Old National High School)

Best Public Secondary School (Newly Nationalized High School)
Best Private Secondary School
Best Special Science High School
Best Public Teacher Education Institution (TEI)
Best Private Teacher Education Institution (PEI)

The shortlisting was based on performance indicators such as the school's participation in national and international science and mathematics competitions and the performance of their students in the following tests:

Elementary
National Elementary Achievement Test
Philippine Science High School Selection Test

Secondary
National Secondary Achievement Test
DOST-SEI Undergraduate Scholarship Examination
UP College Admission Test
De la Salle University Admission Test
Ateneo de Manila University Admission Test

Several meetings and workshops were held during the year to conceptualize the Benchmarking study and to strategize for its effective implementation. Its extensive research and documentation components were scheduled in early 2000.

It is targeted that the findings of this study, which will be available for presentation during the National Science and Technology Week celebration in July 2000, will have a significant impact on the methods, procedures, and practices that schools use to improve the effectiveness and efficiency of their delivery systems.

- Surveys on s&t Human Resources Four studies which were started in 1998 were continued into 1999. These are as follows:
 1. Survey on Science and Mathematics Teachers
 2. Survey on Information Technology Capabilities of Secondary Schools
 3. Survey on Science and Mathematics Supervisors (regional and division levels)
 4. Survey on Teacher Education Institutions (TEIs) Offering BSE Programs.
 Two additional surveys were conducted in early 1999, to wit:
 1. Survey on the Graduates of the Special Science Classes (SSC) in the 110 s&t Oriented High Schools for AY 1996-97 and 1997-1998
 2. Survey on Science and Technology Centruns.
 The survey on the graduates of the special science classes gives indications

if indeed exposure of high school students to better s&t environments and experience in school contribute to their decision to take up s&t courses and careers. The other promotes science centruns as alternative learning resources and environments.

Retrieval of the survey questionnaires was done in 1999 and will continue until 2000. Below is a summary of the retrieval rate for each survey undertaken.

The data and information generated from these surveys will be used to analyze and assess the complement of s&t human resources, and to determine the type of support and assistance needed by science and mathematics teachers, supervisors and principals in terms of training, school facilities and equipment.

R&D Support for the Improvement of Science Education

To make science education more progressive and dynamic, it is necessary to develop the research skills of science and mathematics teachers, and expose them to research materials.

Towards this end, two approaches were initiated in 1999: publication of action researches, and development of modules on action research for distribution to schools.

Publication of Action Researches

Two publications on action researches were released in 1999. The first, a monograph entitled "Students' Ideas About Properties of Matter", came out in June 1999. It is an insightful study which investigated students' conceptions about matter and its behavior. Its findings revealed that most high school students in the 1,000-sample population maintained ideas based on properties that are directly observable and a larger percentage were unable to articulate ideas beyond what can be visually perceived.

TITLE OF SURVEY	QUESTIONNAIRE SENT	QUESTIONNAIRE RETRIEVED	RETRIEVAL RATE
Survey on Science and Mathematics Teachers	6,502	3,885	60%
Survey on IT Capabilities of Secondary Schools	6,502	3,885	60%
Survey on Science and Mathematics Supervisors	246	185	75%
Survey on Teacher Education Institutions Offering BSE Programs	683	47	67%
Survey on the Graduates of the Special Science Classes in the 110 s&t Oriented High Schools	110	98	89%
Survey on Science and Technology Centruns	9	6	67%



Module writers work
to develop module on
action research for

The second publication entitled "Action Researches in Science Education Series 2" was released in December 1999. It comprises seven action researches which dwell on the effects of innovative strategies on science learning and science achievement, validation of materials using teaching-with-analogies approach, developing scientific and technological literacy, and teaching aptitude and student teaching performance of DOST-SET training scholars.

science and mathematics teachers.

Development of Modules for Action Research for Science and Mathematics Teachers

In 1998, this project produced six modules which dealt with the complete cycle of doing classroom research. A close examination of these modules, however, necessitated their revision to a format that would be better understood by trainers and teachers who are not experts in research. A workshop was held in December 1999 to repack the six modules into four compact modules written in layman's language. Seven writers participated in the workshop and produced the basic outlines for the four modules. The outlines are expected to be fleshed out by the first quarter of 2000, and the modules published and disseminated by the end of the same year.

Establishment of the Philippine Database in Science Education

The network of the 12 cooperating academic institutions that contribute to database development in science education was maintained. Nine more institutions were added to the network, as follows:

Name of Institution	ISP
St. Louis University	PHNet
Bicol University	
University of Eastern Philippines	
Xavier University	PHNet
University of Southern Mindanao	
St. Mary's University	FAPENET
West Visayas State University	
Notre Dame of Marbel University	Infocom
Western Mindanao State University	Mozcom

To ensure the quality of the database which consists of theses and dissertations in science education, the data structure was enhanced and refined. For 1999, 376 more studies were collected and encoded in the database, making a total of 832. The STEDNET Home Page: Millennium Version was also redesigned to make it more attractive and updated.

Establishment of an Electronic Network in Science Education between SEI and Selected Priority Institutions

The project continued to provide maintenance work to the following 13 network members:

Planning and Evaluation Service-DOST
Bureau of Secondary Education-DECS
Bureau of Elementary Education-DECS
Bureau of Non-Formal Education-DECS
Office of Planning Service-DECS
Office of Programs and Standards-CHED
Office of Planning, Policy, Research and Information-CHED
Social Development Staff-NEDA
Management Information System-NEDA
National Statistics Office
UNESCO
Office of Formal Technical, Vocational Education and Training-TESDA
Bureau of Labor and Employment Statistics-DOLE

The existing data structure of the databases in these offices was improved to make them Web-enabled. Upgrading of hardware requirements, such as memory, PC and Internet connection and the server's operating system, was likewise undertaken.

Three personal computers with a printer and a modem each were procured for three network institutions—St. Louis University, St. Mary's University and Bicol University. One modem was purchased for SEI's electronic network.

In line with the national directive towards Y2K readiness, SEI conducted a thorough check-up of all its office computers. By December 1999, computers which were not Y2K compliant were either upgraded or replaced.

Strengthening SEI Electronic Linkages Through the Establishment of an Institutional Internet Backbone

To speed up electronic access between SEI and its various clientele, a 64K lease line Internet connection through Infocom Internet Service Provider and lease line connection to PLDT were installed. Remote access servers for Internet dial-up users and notebook computers were also procured and set up in the Institute.

Support for the Third International Mathematics and Science Study Repeat (TIMSS-R)


The Third International Mathematics and Science Study Repeat, also known as TIMSS-R, was conducted in 1999. Recognizing the value of participation in such a study, the DOST-SEI, DECA-BSE and UP ISMED supported the TIMSS-R.

Statistical data needed for the determination of the Philippine sample were gathered and sent to the TIMSS-R Statistical Center in Canada for the final selection. The Main Survey was administered by researchers from SEI, DECS, and UP ISMED to a total of 150 schools involving principals, science and mathematics teachers, and first year students.

Together with UP ISMED staff, SEI personnel also acted as National Quality Control Monitors. After the survey, the UP ISMED submitted to the Data Processing Center in Hamburg, Germany the 6,000 achievement test papers, 6,000 students' questionnaires, 300 science and mathematics teachers questionnaires, and 130 school questionnaires for data evaluation and analysis.

To assess the Philippine performance in TIMSS, the following reports were written: An Analysis of the Intended Curriculum in Science and Mathematics; What Can 13 Year Olds Do in Algebra?; Mathematics and Science Abilities of Filipino 13 Year Olds; Filipino 13-Year-Olds' Ability in Geometry; Filipino 13 Year Olds' Understanding of Fractions and Ability in Data Presentation, Analysis, and Probability.

Promotion of Science and Technology Consciousness



The National Information Technology Plan for the 21st century envisions the Philippines' transformation—within the first decade of the new millennium—as “a Knowledge Center in Asia: a leader in I.T. education, in I.T.-assisted training, and in the application of information and knowledge to business, professional services, and the arts.”

s&t knowledge, as important as it is in terms of economic development, is an equally potent force for enhancing the quality of life, especially in the areas of food security, health, and the environment. Yet to realize its full potential as a tool for human development, s&t must be placed not only in the hands of policymakers, business, and academe, but in the youth as well. Formal education, nonformal learning, extracurricular activities, international competitions, innovative public awareness campaigns: all these serve to promote s&t consciousness among the general public and the youth in particular.

Over the last decade, the SEI has been using these and other means, with increasing effectiveness. As the

Philippines prepared to enter the new millennium, young Filipinos shone in the international s&t arena, garnering many significant awards from s&t, mathematics, and physics competitions. On local shores, students came up with well-researched projects. In some competitions there was not only a notable increase in the number of entries, but also a marked improvement in the quality of the students' research.

These indicate that the continuous improvement in science and technology education and training in the country is indeed making inroads among its primary beneficiaries—the students. These also prove that with proper nurturing, students can excel and accomplish much.

Participation in these contests is a major part of the SEI's Youth Science Program (YSP): a multi-faceted campaign to increase and sustain the interest of the youth and the general public in s&t. Government, the private sector, and nongovernment organizations have been consistent supporters of the different SEI projects under the YSP.

1999 National Science Club Month Celebration (NSCM)

The celebration of the 1999 National Science Club Month was ushered in with an activity dubbed as "A Day In The Science Community Year 6" with the theme, "Bata, Bata ng Bagong Milenyo, Mag-agham Ka Na!" It was held on September 6, 1999 at the DOST Science Complex, Bicutan, Taguig, Metro Manila.

Around 400 science club members, advisers, supervisors and parents attended the affair. Twenty-nine resource persons from DOST's institutes and councils, and 10 facilitators from SEI shared their expertise during the sessions.

The activities during the day were:

1. Meet-a-scientist/technologist sessions where science experts, engineers, technicians met with science club members, advisers and parents, explaining to them the nature of their respective fields of specialization, and sharing challenges, demands and prospects of their science professions; and
2. S&T Career-cum-Technology Sessions which was an orientation on the different careers in the basic, applied and engineering sciences which aimed at enticing students to pursue lifelong careers in S&T.

1998-99 Philippine Mathematical Olympiad (PMO)

One hundred fifty four national finalists participated in the Seventh Philippine Mathematical Olympiad (PMO), 1998-99 National Stage Competition held at the Institute for Science and Mathematics Education Development, University of the Philippines, Diliman, Quezon City on March 3-5, 1999.

The Olympiad had two levels:

Level III (Individual and Team Competitions)

Level IV (Individual and Team Competitions)

- National winners in the individual competition:

Level III: 1st Place — Kirk Jon Khu
(Uno High School, NCR)

Level IV: 1st Place — Marcelino Uy
(Manila Science HS, NCR)

- National winners in the team competition

Level III: 1st Place — Joanne Y. Bocboc,
Lloyd Brian M. So,
Davidson L. Sih
(Philippine Cultural HS, NCR)

Level IV: 1st Place — Mona Lisa A. Koo,
Michael Y. Cheng,
Michael Mark C. Maquilan
(Grace Christian HS, NCR)

The students who performed well in the PMO were made to undergo the Program for Excellence in Mathematics (PEM) training to prepare them for the international mathematics competition.

1 Carlo Nerecena, Samuel Dy

and Timothy John Chua

bring gold medal honors to

the country as they bested

more than 500,000 competi-

tors at the Australian

Mathematics Competition

2 The Philippine Physics

Olympiad divisional stage

competition tests the met-

tle of these students.

1



2





1 Adrian Solis (center) and Rex Lan Sayson (right) make history as they become the first Filipino

awardees at the International Physics Olympiad

2 The Philippine delegation that stood out from among 10 teams competing at the IPhO: (from left to right) Col. Alfonso Rivera (coach), Mario Carreon (UP), Cyrus Paolo Buenafe (UA&P), Louie Abuel (MPI observer), Clemente Titus Pacia (MFI), Sonia Javier (PCS-ICC chairman), Nelson Celis (PCS president)

1999-2000 Philippine Physics Olympiad (PPO)

The Philippine Physics Olympiad (PPO) nationwide divisional stage competition was held on November 23, 1999 in cooperation with the Samahang Pisika ng Pilipinas (SPP).

Individual national winners or finalists were given advanced and intensive training under the Program for Excellence in Physics and formed part of the country's delegation to the International Physics Olympiad.

Intel Philippine Science Fair

The Intel Philippine Science Fair, formerly called "The Search for the Outstanding Youth Science (TOYS) Researchers," is an annual nationwide competition that aims to promote science and technology awareness among the students in the country. Ultimately, it seeks to identify the best and most creative among the science-inclined and technology-conscious Filipino youth who can ably represent the country in various international science competitions.

Beginning 1999, entries in the high school category were classified into individual and team projects to promote the values of personal excellence as well as teamwork.

Likewise, this was implemented in accordance with the guidelines of the Intel International Science and Engineering Fair (ISEEF).

The National Science Fair was held on March 10-12, 1999 at the Ang Bahay ng Alumni, UP-Diliman.

Sixty-nine entries competed during the fair: elementary—15, secondary—47, tertiary—7.

The following were the winners:

Elementary

1. Jeella Z. Acedo — 1st Prize
VISCA, Foundation Elem. School, Leyte
2. Ian Davin Rosales — 2nd Prize
SPED-School for Exceptional Children, Iloilo
3. Rita Angelica D. Ubalde — 3rd Prize
Christ the King College, Guingog City

Secondary

1. Ma. Selina T. Perez — 1st Prize
Philippine Science HS, Diliman
2. Karen G. Sobere Yu — 2nd Prize
Dumaguete Science HS, Dumaguete City
3. Karen Christine S. Braganza — 3rd Prize
Cayetano Arellano HS, Manila
4. Jesur Larry A. Demicillo — Best
Computer Use Award
Alubijid National Comp. HS

Tertiary

1. Jan Amcil Chavez — 1st Prize
Xavier University, Cagayan de Oro City
2. Ivy S. Dimayuga — 2nd Prize
University of the Philippines, Diliman
3. Richard Mark Bella — 3rd Prize
Ateneo de Zamboanga, Zamboanga City

The Division Science Fair for AY 1999-2000 was held simultaneously nationwide from October to November 1999.

It is important to note that the year in review showed that there was a significant increase in the number of entries and a marked improvement in the number of investigatory projects as well as in the quality of the write-ups. This significant change can be attributed partly to the conduct of the Science Research Seminar Workshop (SRSW).

1999 Australian Mathematics Competition (AMC)

This is an invitational correspondence contest for the Asia-Pacific region, organized by the University of Canberra and the Australian Mathematics Association. The Philippine run of the Australian Mathematics Competition was held on August 3, 1999 at the Ateneo de Manila University in cooperation with the Mathematical Society of the Philippines (MSF).

Five hundred fourteen thousand (514,000) students from 3,350 schools in 37 countries participated in the AMC, with the Philippines fielding 105 student contestants.

Only 49 students from five countries won the much-coveted gold medals, and three of them came from the Philippines, namely:

Carlo Nerecena, Year 7
Philippine Science HS, DOST
Timothy John Chua, Year 8
Xavier School
Samuel Dy, Year 8
St. Stephen's HS

The awarding ceremonies were held on October 27, 1999 at the Manila Midtown Hotel. DOST Secretary Filemon Uriarte Jr, Prof. Peter Taylor, Executive Director of the Australian Mathematics Trust, and Mr.

Nicolas Coppel, Charge d' Affaires of the Australian Embassy, awarded the Westpac gold medals, AMC pins, certificates, and the Citation Certificates from President Joseph Ejercito Estrada.

40th International Mathematical Olympiad (IMO)

The Philippines sent the following six representatives to the 40th IMO held in Bucharest, Romania, from July 13-22, 1999:

Team Leader:
Dr. Jose Marasigan (ADMU)
Deputy Leader:
Ms. Evangeline Bautista (ADMU)
Student-Contestants:
Patrick Lim (Xavier School)
Antonio Macarilay (PSHS)
Marcelino Uy (MSHS)
Kirk Jon Khu (Uno HS)

30th International Physics Olympiad (IPhO)

The Philippines was represented by two student-contestants and one pedagogical leader in the 30th International Physics Olympiad held in Padua, Italy from July 18-27, 1999. The competition was participated in by 61 countries with 291 student contestants.

The delegation led by Mr. Jose Perico Esguerra garnered awards, the first time in the Philippine participation to the IPhO. They were:

Adrian Solis — Silver Medal
Rex Ian Sayson — Honorable Mention

International Micromouse Competition (IMC)

The DOST-SET supported the intensive training of the Philippine delegates to the international student IT competitions conducted by the Southeast Asian Regional Computer Confederation (SEARCC).

Of the 20 student-trainees, the following members of the Philippine team won the Silver Cup (second place) in the 1999 International Micromouse Competition held on December 1-3, 1999 at the Ngee Ann Polytechnic University, Singapore:

Cyrus Paolo Buenafe
— University of the Asia and the Pacific
Mario Carreon
— University of the Philippines-Diliman
Clemente Titus Pasia Jr.
— Meralco Foundation Institute

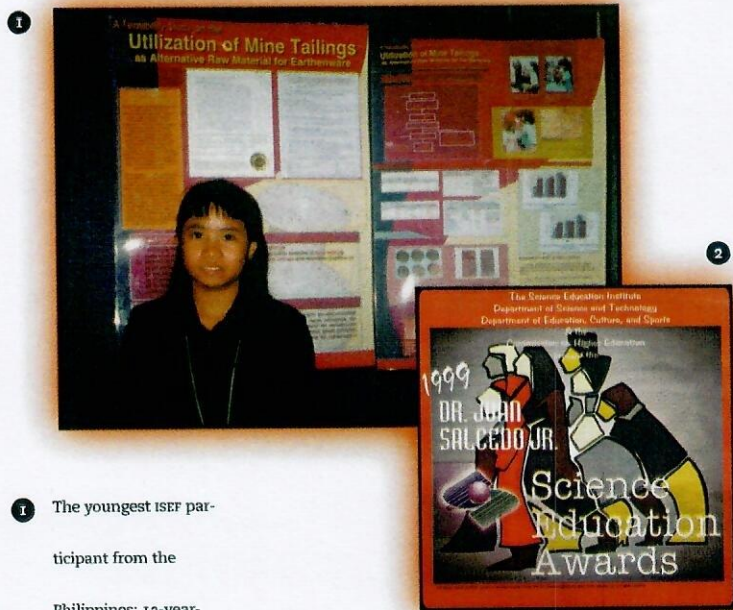
Ten teams from six countries in Southeast Asia and Pacific Region competed in the IMC.

International Science and Engineering Fair (ISEF)

The International Science and Engineering Fair (ISEF) is an annual gathering of young science researchers organized by the Science Service and sponsored by Intel. In the 1999 ISEF, there were 1,179 entries from the 51 states of the United States of America and 40 countries worldwide (Canada, Europe, Central America and Asia-Pacific regions).

The Philippine delegates, who all won major awards, were:

- Karen S. Braganza, of Cayetano Arellano High School in Manila, with her project "Utilization of Mine Tailings as Alternative Raw Material for the Production of Earthenware." At 12 years old,



1 The youngest ISEF participant from the Philippines: 12-year-

old Karen Braganza and her multi-award-winning project.

2 Communications material for the 1999 Dr. Juan Salcedo Jr. Science Education Awards call for entries.

she was the youngest among the participants, and won the most number of awards in the delegation. They were:

- Third Place, Grand Awards, Environmental Science Category;
- Second Place Award from the Patent and Trademark Office of the US Department of Commerce;
- Third Place Award from the Society of Mining, Metallurgy and Exploration;
- Third Place Award from the Society of Exploration Geophysicists.

She stood out as the only Asian to win this year a US government award (Second Place, Patent and Trademark Office, US Dept. of Commerce).

- Ma. Selina T. Perez, Mary Rose Diwata L. Italia and Bernice G. de Guzman (Team Category), all 16 years old, of Philippine Science High School-Diliman Campus. They defended impressively their project entitled, "Human Amniotic Membrane as Possible Radioprotector of the Gastrointestinal System." They won Second Place, Grand Awards.
- Karen G. Sobere-Yu, 17, of Dimaguete Science High School, for "Bioplas Production of Biodegradable Plastics Phase II." She won the prestigious Intel Fellows Achievement Award for the vision and innovation manifested in her project.

Search for SEAMEO Young Scientists (SSYS)

The Philippines participated in the 1999 Search for SEAMEO Young Scientists (SSYS) on July 4-8, 1999 at RECSAM, Penang, Malaysia. Seventeen entries from nine Asean countries participated in the SEAMEO RECSAM-sponsored activity. The Philippine delegates were:

- Randy G. Ampangan
- University of St. Anthony, Iriga City
- Alvin Jay Mostoles
- Regional Science HS, Bangor, La Union

Their entry entitled "Stone Segregator" won the Best Contribution to the Human Needs and Development of Society. It was awarded a Certificate of Achievement and a cash prize of RM1,000.

5th Asian Children's Science Conference

The country sent five participants to the 5th Asian Children's Science Conference held at the Science Museum in Tokyo, Japan on October 8-13, 1999. The activity was sponsored by the Japan Science Foundation.

The winners in the 1999 Science Fair were sent as exhibitors and participants in the conference with a theme entitled, "Ocean and Environment." They were:

- Jeella Z. Acedo and Ma. Fe Novere C. Evangelio
— "Biocontrol of Cabbage Soft Rot Using Botanical Extracts"
VISCA Foundation Elem. Sch.
Baybay, Leyte
- Ian Davin C. Rosales
— "Audio Tech Dispenser"; SPED School for Exceptional Children, Iloilo City
- Franz Josef I. Crispo
— "Rain Alarm from Junks"
West City Elem. School., Dumaguete City
- Rita Angelica D. Ubalde
— "Indigenous Technology for Adhesive Dye, and Waste Fuel from Tabon-Tabon Fruit"
Christ the King College, Gingoog City

Dr. Juan Salcedo Jr. Science Education Awards

This year marked the 10th year of the Dr. Juan Salcedo Jr. Science Education Awards, which is a biennial nationwide search for the most outstanding science and mathematics teachers in the elementary, secondary and tertiary categories.

The award was named in honor of the late National Scientist and former Chairman of the National Science Development Board (now DOST) who has made outstanding contributions to the field of science education. It is a joint project of the Department of Education, Culture and Sports, Commission on Higher Education and the Department of Science and Technology, and implemented by the Science Education Institute.

This year, 39 elementary, 61 high school and 22 college science and mathematics teachers were declared division winners. They joined the regional level competition where only one winner per category was declared. The top nine regional winners became the national level finalists with only one national winner per category. Following are the 1999 national winners:

Elementary Category:

Luz S. Domingo, (Science Teacher)
Tuguegarao West Elementary School
Tuguegarao, Cagayan, Region II

Secondary Category:

Richelda P. Villame (Mathematics Teacher)
Philippine Academy of Sakya
1463 Musangkay St., Sta. Cruz, Manila

Tertiary Category:

Dr. Gerald L. Penecilla (Biology Teacher)
West Visayas State University
Lana St., La Paz, Iloilo City

Each national winner received P150,000 cash prize and presidential gold medallion while the nominating school received a plaque of recognition. Each finalist took home a P50,000.00 cash prize.

Sen. Raul S. Roco led this year's national board of judges, which included Dr. Mona D. Valisno, Dr. Rufino C. Lirag Jr., and Dr. Alberto A. Fenix Jr.

In its 10 years of implementation the project has awarded the following:

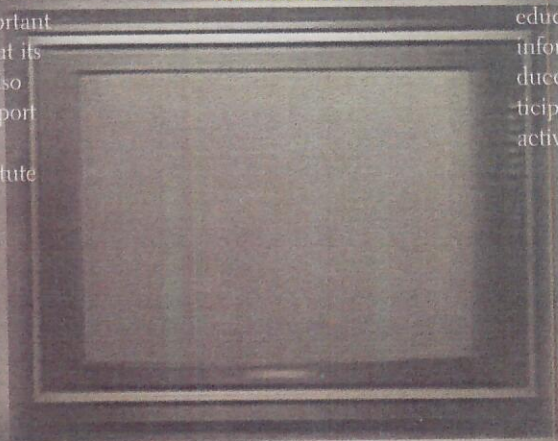
YEAR	C A T E G O R Y		
	ELEMENTARY	SECONDARY	TERTIARY
1997	Ms. Lelia V. Meimban Science Teacher Binalonan North Central School Binalonan, Pangasinan	Mr. Belarmino S. Cruz Physics Teacher Bulacan State University Malolos, Bulacan	Dr. Ma. Assunta C. Guyegkeng Chemistry Teacher Ateneo de Manila University Quezon City
1995	Ms. Anita B. Almojera Science Teacher Zaragosa Elementary School Zaragosa, La Union	Mr. Isal O. Kulong Physics Teacher Quezon City Science High School Quezon City	No winner
1993	Ms. Juanita M. Rimban Science Teacher Tabora Elementary School Baguio City	Ms. Leah L. Salvaleon Physics Teacher Iligan City Science High School Iligan City	Dr. Jose A. Marasigan Mathematics Teacher Ateneo de Manila University Quezon City
1991	Ms. Fe P. Ariz Science Teacher Roxas Elementary School Baguio City	Mr. Wilfredo V. Salta Physics Teacher Tarlac National High School Tarlac, Tarlac	Dr. Gregorio Kimas General Science Saint Louis University Baguio City

Communication and Information Links

Providing information to other sectors outside of the science and technology community about the different activities and problems in s&t education in the country is important in making the public aware about its state. This way, s&t culture is also propagated, and the needed support from the public is generated.

The Science Education Institute

prepared information materials for the different news media, including news and feature releases, television and radio plugs, interviews, technical assistance to the "Sineskwela" science education TV program, and other sei information materials. It also produced materials for exhibits, and participated in a number of s&t-oriented activities.



Major Events

1999 National Science and Technology Week Celebration

National, Regional and other Special Exhibitions

- 1999 DOST s&T Fair (July 5-10, PTTC, Manila)
- 1999 Northern Luzon Cluster s&T Fair (July 15-27, Batac, Ilocos Norte)
- Sci-Tech Exhibits (November 6-13, House of Representatives, Quezon City)
- Millennium Trade and s&T Exposition (December 11-18, Senate of the Philippines, Pasay City)

The following promotional materials were also produced:

- a) SEI institutional exhibits
- b) SEI Updates (2 issues)
- c) SEI Millennium Homepage
- d) SEI Institutional Folder and Poster-leaflet

Continuing coordination with the media was also undertaken through the preparation of news and feature releases on SEI projects and participation in DOST-wide information activities such as the DOST radio program "Talino Para Sa Masa."

Other Activities in Support of the Programs of SEI:

- 1 Production of, and broadcast arrangements, for TV/radio plugs on s&T Scholarships
- 2 Coordination with various radio programs for interviews of SEI officials and staff

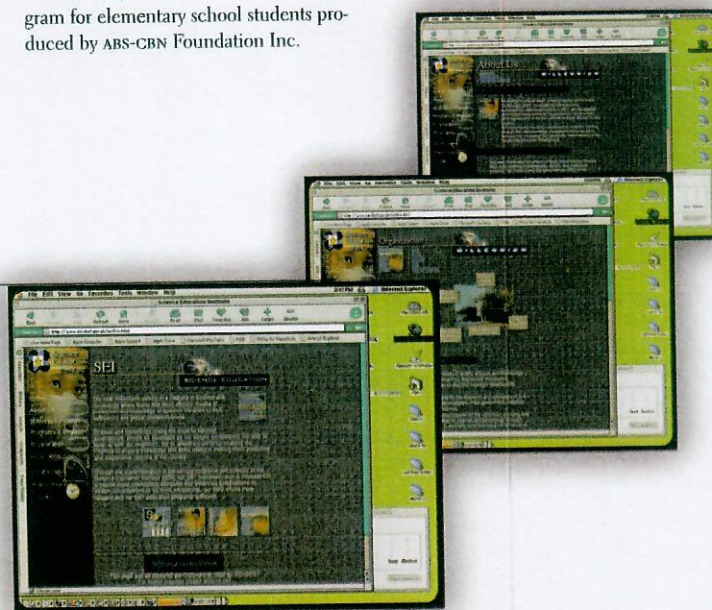
- 3 Production and staging of the 1999 Dr. Juan Salcedo Jr. Science Education Awards Multimedia Presentation
- 4 Preparation of speeches and technical papers on science and mathematics Education for various forums
- 5 Preparation of project proposal and implementation of measures to enable the institute's IT facilities to be Y2K compliant
- 6 Provision of staff assistance for the maintenance of computers in other divisions/Units of SEI
- 7 Monitoring and proposal review of DOST-GIA projects (Science Centurms)
- 8 Provision of Technical Assistance to "Sineskwela," a science education TV program for elementary school students produced by ABS-CBN Foundation Inc.

Contest winners and

other details are

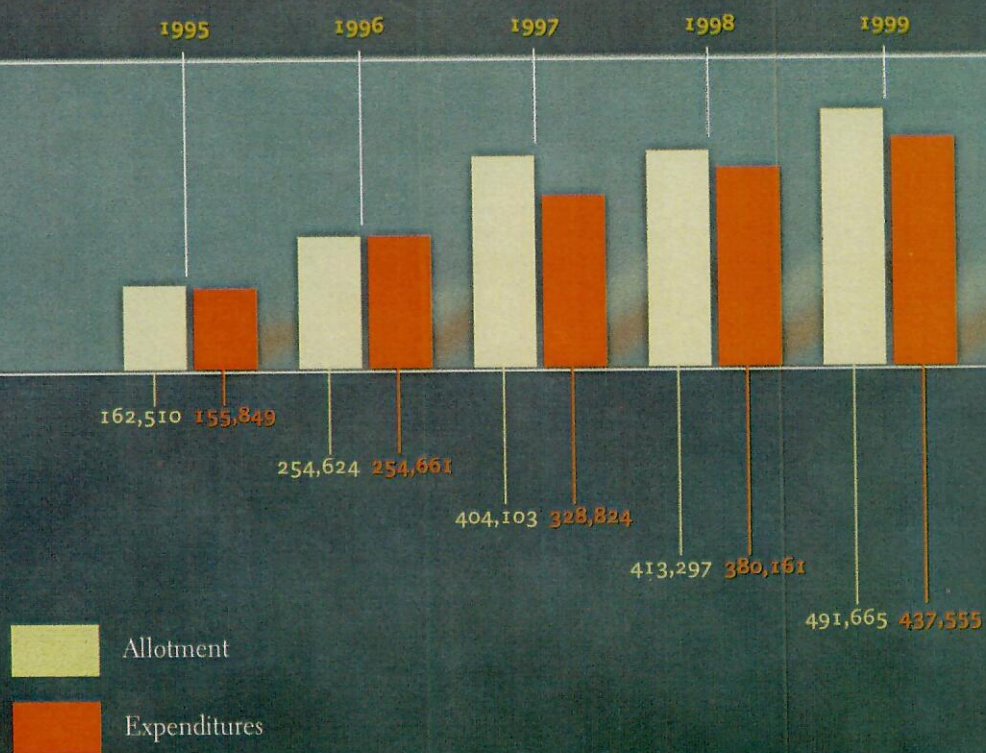
found in

www.sei.dost.gov.ph



Financial Summary

Five-year trend of allotment vs. expenditures (P '000)



Human Resource Management

To successfully carry out its various tasks, the SEI must maintain continually improving levels of competence and professionalism within its ranks, and not just among the educators, professionals and students it is mandated to serve. A key component of human resource management is

the provision of relevant and timely interventions—workshops, fora, seminars, training sessions and similar vehicles of learning and interaction among S&T practitioners and other concerned sectors.

1999 Year End Mandatory Fiscal Requirements in Government Financial Accounts Administration

Traders Hotel, Roxas Blvd., Manila, Nov. 25-27, 1999
Nona M. Docor
Gina M. Laurel

1999 Year End Mandatory Fiscal Requirements in Government Financial Accounts Administration

Mercure Grand Casino Hotel, Davao City
Dec 6-8, 1999
Ma. Belina L. Galacan

19th APEC Human Resource Development (HRD) Working Group Meeting and the simultaneous networks

Santiago, Chile, Jan. 23-31, 1999
Ester B. Ogena

2nd Regional Search for Science Young Scientists (SSYS)

Penang, Malaysia, Jul 5-7, 1999
Levita G. Portugal

20th APEC Human Resource Development (HRD) Working Group Meeting

Hong Kong, Republic of China, May. 9-15, 1999
Ester B. Ogena

26th National Conference on Public Personnel Administration

GSIS Gymnasium, Financial Center, Pasay City
Dec 1 - 2, 1999
Aida T. Ayran
Luz S. Rimorin

31st Management Congress

Manila Hotel Ballroom, Roxas Blvd., Manila
Sep 30, 1999
Aida T. Ayran
Luz S. Rimorin

4th National Research Coordinators Meeting and Standing Committee Meeting

Casablanca, Morocco and Amsterdam
The Netherlands, Feb. 22-26, 1999 & Feb 26-27, 1999
Ester B. Ogena

5th Asian Children's Science Conference

Tokyo, Japan, Oct 8 - 13, 1999
Alicia L. Asuncion

50th International Science & Engineering Fair (ISEF)

Philadelphia, Pennsylvania, USA, May. 2-8, 1999
Angeli O. Cortez

6th Annual National Convention of the Government Organization for Information Technology (GO for IT)

Pryce Plaza Hotel, Cagayan de Oro City
Oct 26-28, 1999
Vergel P. Rebuta

8th Southeast Asian Conference on Mathematics Education

Ateneo de Manila University, May 30-Jun 4, 1999
Lilia R. Lauron
Ester B. Ogena

APEC Forum on Human Resource Development

Chiba, Japan, Jul 13-15, 1999
Ester B. Ogena

Applied Statistics

UP School of Statistics, Diliman, Q.C.
May 3-7, 1999
Lilia R. Lauron
Levita G. Portugal

Disposal and Divestment of Government Properties

Heritage Hotel Manila, Roxas Blvd., cor EDSA,
Pasay City, Nov. 13, 1999
Anthony S. Maulion
Marcelino G. Poliquit Jr.
Jose Rey G. Rosal

DOST Young Leaders Forum

DOST Executive Lounge, Aug 23 - 25, 1999
Ma. Daisy A. Demoni

Effective Administration and Supply Management Program

DECS Ecotech Cebu City, Nov. 16-18, 1999
Jesus Rey A. Bronola
Rodolfo R. Ortaliza

Experts' Meeting for the Project

Vancouver, Canada, May. 3-6, 1999
Filma G. Brawner

Extraordinary Governing Board Meeting of the Regional Center for Science and Math Education (RECSAM)

Penang, Malaysia, Feb. 12-13, 1999
Ester B. Ogena

First Aid

DOST Executive Lounge, Jan. 19-22, 1999
Jesus Rey A. Bronola

First International Conference

Institute for Science and Mathematics Education Development (ISMED), UP, Diliman, QC
Nov 22 - 24, 1999
Violeta N. Arciaga

First Membership Meeting and Induction of GACPA the 1999 Officers

Isla Ballroom, Shangri-La, EDSA Plaza Hotel
Mar. 1, 1999
Marinel L. Asuncion
Nona M. Docor
Gina M. Laurel
Racquel M. Tolentino

Gender Mainstreaming toward the Formulation of Agency GAD Plans

Development Academy of the Philippines,
Conference Center, Tagaytay City
Jun 29 - Jul 2, 1999

Violeta N. Arciaga
Luz S. Rimorin

Human Resource Development at the 1999 Taiwan-Philippines Forum on Economic Cooperation

Taipei, Taiwan, May. 24-26, 1999
Ester B. Ogena

International Conference on Teacher Education (ICTED)

College of Education, University of the Philippines
Diliman, QC, Jul. 1-3, 1999
Filma G. Brawner

Introduction of Database Design & Development Using Microsoft Access '97

SEI Conference Room, Sep. 24, 1999

Susan C. Alagon
Arturo P. Asuncion
Flora R. Beniabon
Edelmira B. Bustamante
Lorna M. Cena
Josephine T. Chua
Ma. Elena Y. Constantino
Ruby R. Cristobal
Aida B. Dasallas
Rodelio G. de Asis
Liez M. de Lara
Ma. Daisy A. Demoni
Susan F. Esquivel
Josephine S. Feliciano
Ma. Lourdes V. Felicitas
Ma. Belina L. Galacan
Kennedy A. Garabiag
Anita E. Gorgonio
Raymund R. Legaspi
Richelle A. Liquido
Edwin B. Lopez
Petronilla C. Maningas
Anthony S. Maulion
Paolo Enrico S. Melendez
Cherlina L. Mirabel
Ma. Corazon M. Mundoc
Anna Karenina R. Nuque
Amparo R. Olarte
Jenny F. Pacis
Marietta T. Palatta

Emma M. Pasatiempo
Benedicto B. Perez
Marcelino G. Poliquit Jr
Vergel P. Rebuta
Marichu R. Ricafrente
Alona R. Rivera
Kristan C. Rodillo
Ma. Cecilia M. Sacopa
Geraldine L. Subida
Marietta M. Sumallo
Dante T. Tulalian
Carmelita C. Viray
Nelvin C. Ylagan

Inventory Control and Warehouse Management

Heritage Hotel Manila, Roxas Blvd., cor EDSA,
Pasay City, Oct 2, 1999
Anthony S. Maulion
Jose Rey G. Rosal

Managing R&D in the DOST R&D and Service Institute

DOST Executive Lounge, Bicutan, Taguig, MM
Nov 9 - 12, 1999
Geraldine L. Subida
Carmelita C. Viray

Multiple Intelligence in the Cooperative Learning Classroom

Science Teacher Training Center, UP-ISMED,
Diliman, QC, Aug 26, 1999
Alicia L. Asuncion
Josefina A. Fernandez

National Research Coordinator's Meeting of the 3rd International Mathematics and Science Study-Repeat (TIMSS-R)

Kuala Lumpur, Oct 18-21, 1999
Ester B. Ogena

Oracle Technology Network (OTN) iDevelop '99

Makati Shangri-La Hotel, Aug 17, 1999
Josephine T. Chua
Marietta M. Sumallo

Organizational Best Practices: Transforming Agencies into World-Class Organization

DAP Bldg., San Miguel Ave., Ortigas Center
Pasig City, Dec. 10, 1999
Alicia L. Asuncion

PAGBA 2nd Quarterly Meeting and Seminar Workshop

Sarabia Manor Hotel, Iloilo City, Jul. 7-9, 1999
Aida T. Ayran
Racquel M. Tolentino

Public Bidding and Government Property Disposal

Heritage Hotel Manila, Roxas Blvd., cor EDSA,
Pasay, City, Aug 7, 1999
Ma. Belina L. Galacan
Amparo R. Olarte
Rodolfo R. Ortaliza
Jose Rey G. Rosal

Radio Production and Broadcasting

Philippine Information Agency Training Room, PIA
Building, Visayas Ave. Q.C., Apr. 29-30, 1999
Aida T. Ayran
Ruby R. Cristobal

Records Disposition

Manila Midtown Hotel, Pedro Gil St cor Adriatico
St. Ermita, Manila, Oct 19 - 21, 1999
Dante T. Tulalian

Sites Module — 2 NRC Meeting

Copenhagen Admiral Hotel, Denmark
Oct 12-14, 1999
Filma G. Brawner

Statistical Data Management

Statistical Research and Training Center, IES Bldg.,
104 Kalayaan Ave., Diliman, QC, May 31-Jun 9, 1999
Geraldine L. Subida

Statistical Research Training and Education Charting the Course for the New Millennium

National Institute of Geological Science (NIGS)
AVR, UP, Diliman Q.C., Oct 15, 1999
Rodelio G. De Asis
Ann Karenina R. Nuque
Vergel P. Rebuta

Training on Microsoft Visual Basic 6.0 Fundamentals

Unit 707 Herrera Tower cor. Valero St., Salcedo
Village, Makati City, Oct 20-22, 1999
Josephine T. Chua
Vergel P. Rebuta

World Conference on Science

Budapest, Hungary, Jun 23-30, 1999 &
Jun 23-Jul 2, 1999
Ester B. Ogena

Shaping the future now.

This is one important task of "shaping" that requires many hands working synergistically. The government must be there first of all, providing the proper environment for the growth of S&T education, through relevant policymaking, sufficient budgetary allocations for the continuance and expansion of S&T programs, and with effective and strategic interagency partnerships. The private sector makes its contribution through various modes of support. Educators, students, concerned local and international organizations, and the general public—they, too, have important roles to play as we shape the future of this country.

All these hands must work together—proactively, cooperatively—to overcome challenges such as:

- the demands of continuous capability building for science teaching institutions, as well as constantly assessing and improving the competency of science and math teachers;
- the need to sustain gains made in terms of students' performance, including those enrolled in the scholarship programs, and those competing in international S&T contests; and,
- fine-tuning projections regarding S&T human resource supply and requirements of both the public and private sectors in the Philippines.

Challenges and Directions

- the need to improve science and mathematics performance in national and international assessments;
- the incredible rise in the number of RA 7687 Scholarship Program examinees, which contrasts starkly with the downtrend in actual availments, due mainly to budgetary constraints;
- the urgent need to reach out to more secondary schools in the provinces, especially for the purpose of introducing them to and familiarizing them with information technology, and ensure that students from these areas eventually catch up with the intense pace of IT developments worldwide;

These are only some of the more urgent issues and tasks that the SET must deal with. Damning as these and the other tasks and challenges are, the SET is actually looking forward to the work ahead. In retrospect, the challenges that faced the institute during its first decade (1988 to 1998) were no less great. Having hurdled them, together with the full backing of its public and private partners, SET can realistically expect to accomplish the same in the decade ahead—again, with all hands working together in shaping the future, and doing it now.

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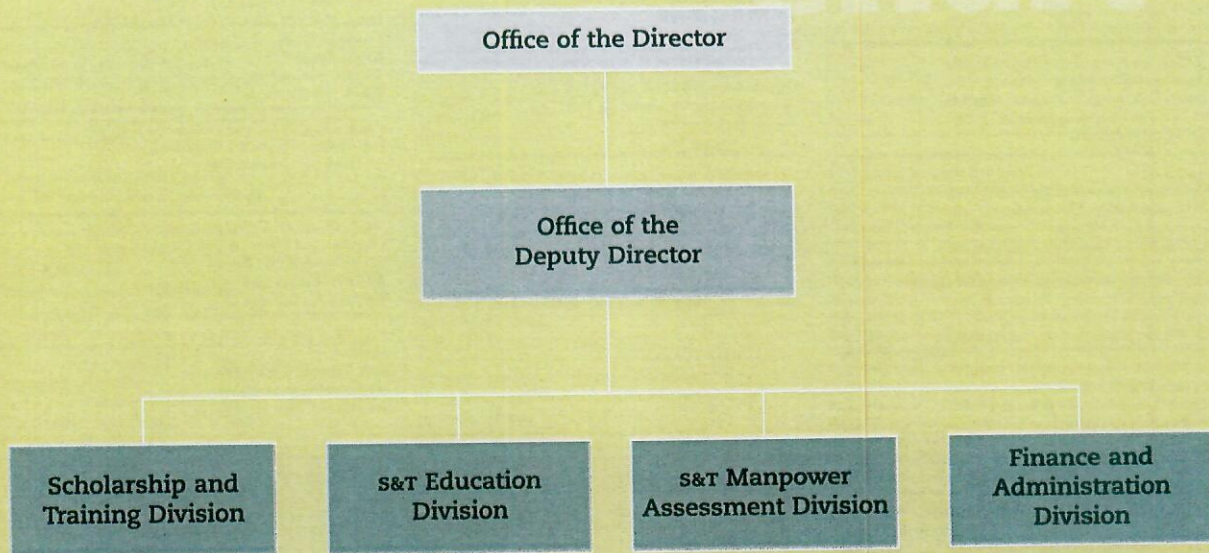
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Organizational Chart





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