A Multifaceted Approach to Teacher Upgrading

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To start, let me quote the greatest teacher of all time.

"If a man keeps cherishing his old knowledge,
so as continually to be acquiring new,
he may be a teacher of others."

-Confucius

"Once a teacher always a student." Learning for a teacher and for other professionals as well, does not end with a diploma. A teacher has to keep on studying to keep abreast of new developments in his/her area of teaching, about present-day learners, about new methods, and about education in general.

Teacher upgrading in the Philippine public school system is a major responsibility of the Department of Education, which has established the National Education Academy of the Philippines (NEAP) to take care of this function. Simulating the bureaucracy of the Department, teacher upgrading usually employs the cascading or "echoing" approach, upgrading top-level management first whose responsibility it is to train the next in rank and so on, which are, the

Regional Directors, the Superintendents, the Division Supervisors, the District Supervisors, the Principals, and the teachers who make up the bottom. With information passing through so many layers, input reaching the teachers are sometimes either diluted, abridged, incomplete, erroneous, or "all of the above." The worst scenario is a breakdown in the chain, such that no upgrading reaches the teachers at all, the most common cause of which is "no more funds." The private schools fare a little better because of its size.

The need for teacher upgrading and the inability of the government to discharge this function fully, has prompted non-government organizations involved in education to pitch in and share in this undertaking. One such organization is the Foundation for Upgrading the Standard of Education (FUSE) established and incorporated on 12 April 1994, formerly with offices at the Allied Bank Building, Makati City. **Figure 1** shows the shared involvement of the government and FUSE in its programs.

FUSE is a non-profit, non-governmental organization formed for educational, cultural, scientific and social development pursuits. It aims to elevate and maintain a high standard of education through improved teacher training, especially in science, mathematics, and English. These three subjects have been identified as the learning areas where Filipino students have fared poorly in the National Achievement Tests (NAT) as well as in international examinations. FUSE teacher upgrading can therefore be considered as **needs-based** because it responds to a need relevant to present-day situation in Philippine education.

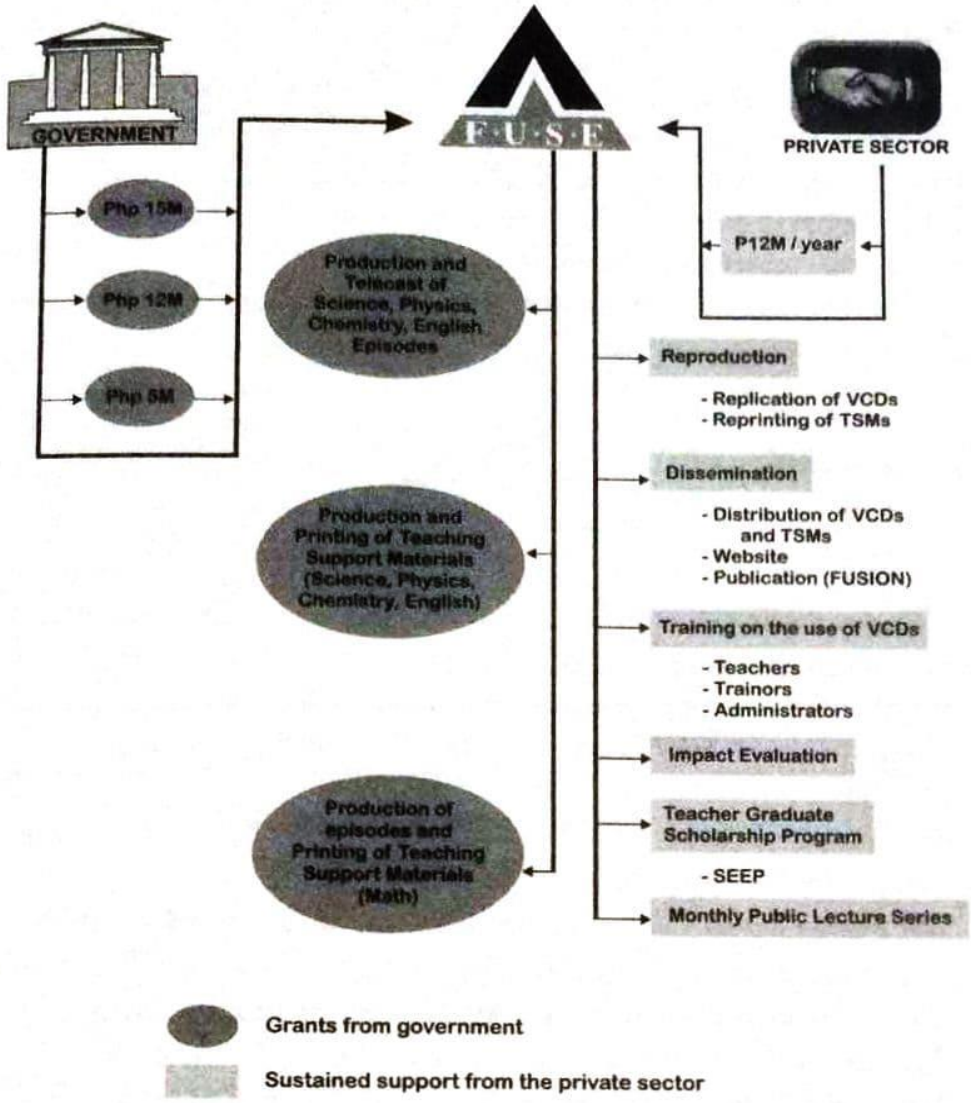

Figure 1: *A schematic diagram of the shared involvement of the government, the private sector and the Foundation for Upgrading the Standard of Education (adopted from FUSE Annual Report, 2005)*

This paper traces the development of the Foundation's commitment to quality education as expressed in its framework ***"Service to teachers is service to the nation."*** In its 12 years of existence (1994 - present), FUSE has been engaged in upgrading teachers, especially in the fields of English, science, and mathematics. **Figure 2** shows the activities of FUSE.

A Multifaceted Approach

Planning training interventions is never likely to be satisfied by rigid adherence to a single approach (Reid & Barrington, 1994). FUSE subscribes to this statement, such that since its establishment in 1994, it has been partnering with government and private educational institutions in providing teacher upgrading, using a multifaceted approach to reach as many teachers and educators in the most effective and efficient way.

Characteristics of the Multifaceted Approach to Teacher Upgrading

The multifaceted approach to teacher upgrading employed by FUSE has the following characteristics:

- Satisfies both FUSE's vision, mission, and goals and its clientele's needs;
- Balanced in terms of learning areas (English, Science, and Mathematics);
- Well-organized, properly sequenced, provides adequately for differing needs and abilities of participants, offers flexibility to trainers and participants, and is responsive to change;
- Developed through a systematic and orderly process
- Evaluated, with provisions for feedback and mechanisms to permit refinement, updating, and continuing effectiveness
- Uses androgochy varied learner-centered strategies vs.
- Encompasses all types and levels of teachers
- Uses a variety of delivery systems suited to teachers' learning styles
- Can be offered in-house or off-site as long as facilities and equipment are available

Figure 3 is a graphic representation of the FUSE multifaceted approach. The figure is like a brilliant-cut gem that shows five facets of teacher upgrading employed by FUSE: varied modes of upgrading, different target participants, priority learning areas, flexible delivery systems, and movable training locales.

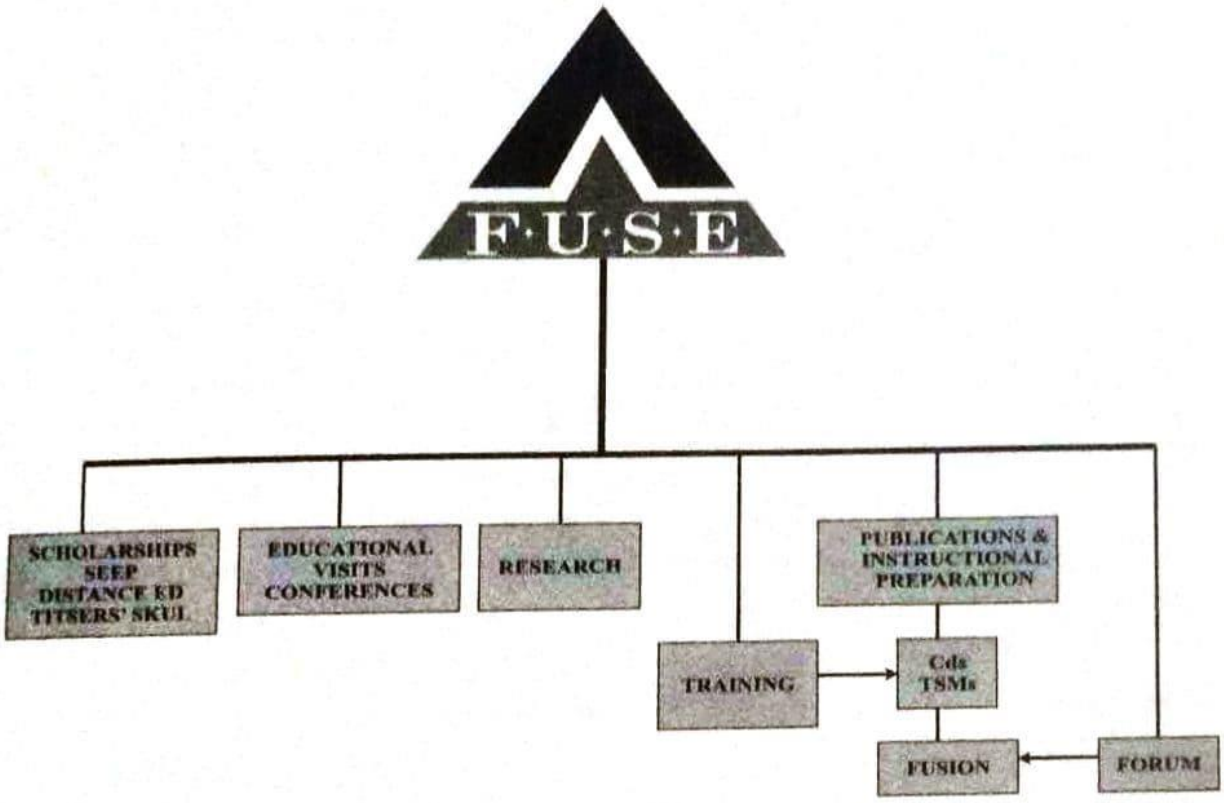

Figure 2: *Activities of FUSE*

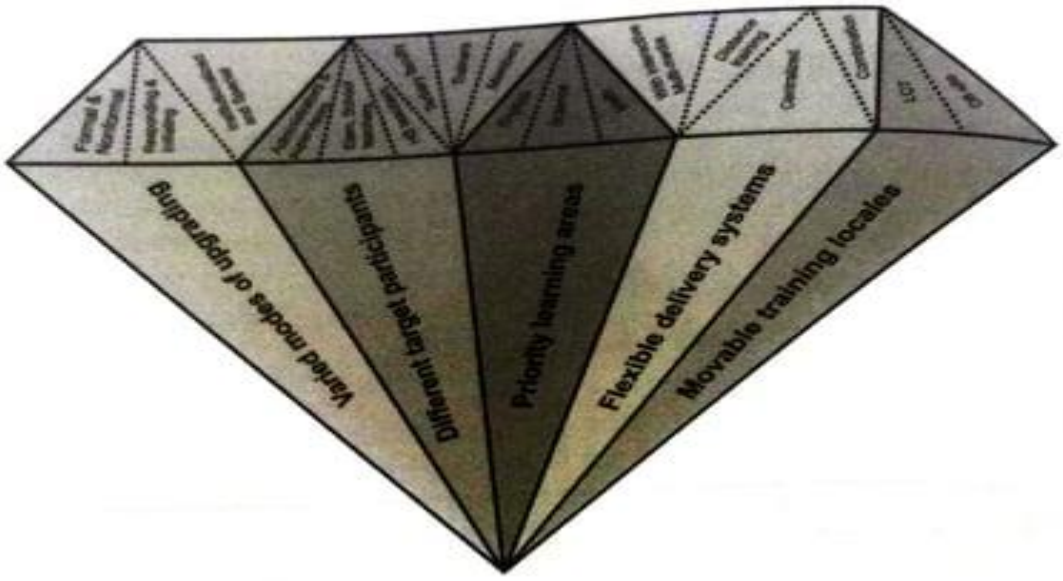

Figure 3: *Multifaceted approach to teacher upgrading*

Varied Modes of Teacher Upgrading

FUSE employs six modes of teacher upgrading: formal and nonformal, responding and initiating, and institutionalized and special.

Formal and Nonformal

Formal upgrading involves enrolling in courses leading towards a degree. FUSE formal upgrading enables teachers of mathematics and the sciences to pursue graduate courses in partner universities as FUSE scholars. The project called Science and Engineering Education Program (SEEP) was established in 2005. Annually, it supports the graduate studies of 80 scholars teaching in the public schools. This enables the teachers to pursue master's degrees full-time either in Physics, Chemistry, Mathematics, or Biology.

Most of the nonformal teacher upgrading offered by FUSE are short-term training courses developed to improve teacher competence in the three target learning areas. The training courses are in the form of seminars or workshops or a combination of both, taken by teachers in one day or several days, either continuously or weekly. The nonformal courses follow syllabi. Examples of nonformal courses are the 12-day FUSE summer English workshops, the half-day Trainors' Professional Development Seminar, and the 2-day FUSE Training Courses on the Use of CONSTEC (Continuing Studies via Technology) DVDs in Teaching English and the Sciences.

FUSE undertakes teacher upgrading and offers the same opportunity to its members in the form of nonformal monthly forum / General Assembly, educational visits, and participation in international conferences. Most of the FUSE members are top-level executives of the Department of Education, heads of universities and colleges, and subject-matter specialists. FUSE members have gone on educational visits to educational institutions in Hong Kong (1997 and 2002), Malaysia and Singapore (1999), and Beijing, Shanghai China (2003). They also participated at the 5th UNESCO-ACEID International Conference on Education (1999) in Bangkok and at the 9th UNESCO-APEID International Conference on Educational Innovations in Shanghai (2003).

Responding and Initiating

The first teacher upgrading courses (Summer English Workshops) were initiated by FUSE. The workshops were conducted for three summers (1994-1996) in different parts of the country and trained more than 1000 high school English teachers.

Most of the training courses that followed were all in response to requests by organizations and institutions that wanted to partner with FUSE, for example, the PELT (Philippine English Language Teaching) workshops conducted in 1997-1998 in cooperation with the Overseas Development Administration of the British Government, British Council, and the Ateneo Center for English Language Teaching (ACELT).

At present, the nonformal training courses being conducted are all FUSE-initiated-- the 2-day FUSE Training Courses on the Use of CONSTEC DVDs in Teaching English and the Sciences.

Institutionalized and Special

Institutionalized training courses are designed to address recurring problems or concerns and are therefore conducted on a regular and continuing basis. The present FUSE courses on the use of CONSTEC DVDs are institutionalized courses that the Foundation has been offering since 1997 to the present.

On the other hand, special courses are one-time programs developed to meet a specific need. The Teacher Training on Classroom Technology Solutions seminar and the ELAN: Training School Heads and Mid-Level Managers are both examples of special courses undertaken by FUSE.

Different Target Participants

FUSE not only upgrades teachers' competence but other educators' as well—administrators, supervisors, trainers, and other people involved actively in education.

Training courses have been designed and held for school administrators and supervisors, elementary and high school teachers, faculty of tertiary level institutions, and FUSE trainers and members. Table 1 below shows examples of such courses and their participants.

Table 1: *Training Courses Offered by FUSE for Different Target Participants*

TARGET PARTICIPANTS	SAMPLE TRAINING COURSES
School Administrators & Supervisors	7-day Trainers' Training on the Supervision of English, Math and Science Instruction
Elem. School Teachers	2-day Division Seminar-Workshop for Elementary School Teachers in Science & Health on the use of CONSTEC DVDs and TSMs (Teaching Support Materials)
High School Teachers	2-day Division Seminar-Workshop for High School Teachers in English, Chemistry & Physics on the Use of CONSTEC DVDs and TSMs (Teaching Support Materials)
Tertiary Faculty	6-day College Algebra Training for Engineering Courses
FUSE Trainers	2-day Training the Trainers' Course in Mathematics, Science and Health, and Physics
FUSE Members	Monthly forum / General Assembly

Priority Learning Areas

The FUSE training courses focus on three learning areas considered the most difficult for students to learn and for teachers to teach:

- English
- Science: Elementary Science and Health, High School Physics, High School Chemistry
- Mathematics (Algebra)

Flexible Delivery Systems

FUSE uses and has made use of four flexible training delivery systems to suit different learning styles of teachers: interactive multi-media, distance training, centralized, and a combination of any two or all of the three.

Interactive multimedia training (IMT)

Interactive multimedia training (IMT), sometimes called interactive training systems (ITS), interactive performance systems,

performance support systems (PSS), or on-demand learning systems, are learner-controlled systems that can match many teachers' preferred learning styles. Multimedia combines a variety of formerly independent sound and visual media, with a computer in control. Such is the nature of the CONSTEL (earlier called Continuing Science Education via Television [1995] then Continuing Studies via Television [(1999]) VHS tapes that FUSE started distributing nationwide and using in its teacher upgrading courses.

Senator Edgardo J. Angara, Chairman of the FUSE Board of Trustees, proudly stated that "the program (CONSTEL) will radically transform the educational system in several ways and make our schools at par with those of other advanced countries."

Each set of VHS tapes has 40 telelessons or episodes in the subject area—Science Made Easy, Chemistry in Action, and Physics in Everyday Life ---or a total of 120 episodes, with corresponding printed Teaching Support Materials (TSMs). The TSMs provide the Science teachers with comprehensive background information about each topic, including varied and interesting learner-centered strategies that develop higher order thinking skills. The TSMs are congruent with the principles and philosophy of the Basic Education Curriculum, integrating Values Education, Core Life Skills, and competencies in other learning areas, especially English. Hence, the skills are integrated, the approach is interdisciplinary, and the activities are interactive. The suggested activities and instructional materials and equipment are likewise culture responsive and utilize resources found in various communities in the Philippines.

From 1996-2004, videotapes were distributed to schools personally by the FUSE officials and members and through the branches of Allied Bank **(Figure 4)**. However, observations made by FUSE officials in visits to recipient schools showed that many teachers were either not using the tapes or using them improperly, that is, just letting the students view the whole episode, which actually are for teachers. So, the Training Committee of FUSE decided to design training courses on the use of the CONSTEL tapes in teaching the learning areas. These training courses have become FUSE's banner courses from 2004 to the present.

The institutionalized training courses on the use of CONSTEC or Continuing Studies via Technology (formerly CONSTEL) VCDs /DVDs in English, Science and Health, Physics, and Chemistry also gave rise to the need for a permanent training site for FUSE. Thus was established the Learning Center for Teachers (LCT) in 2005.

Distance training

Distance training was embarked on by FUSE through the radio simulcast over Cable 77 in cooperation with the University of the Philippines-National Institute of Science and Mathematics Education (UP-NISMED) that offered two sets of distance education programs enrolled in by 45 teachers in some key regions of the country.

Figure 4: ***FUSE across the nation***

Centralized

Centralized or conventional training involves instructors, a group of participants, and a classroom and employs standard strategies, for example, lecture, discussion, demonstration, and practical exercises methods of instruction as well as the use of audio-visual aids.

Centralized training is customized to meet the participants' needs. It is flexible because the instructor can adjust the content and teaching strategy to the participants' needs. It has also disadvantages: its success depends on the competence of the instructor, which is why FUSE trainers are carefully chosen.

Movable Training Sites

Learning Center for Teachers (LCT)

FUSE offers regular interactive multimedia combined with centralized training in its Learning Center for Teachers (LCT) during the school year. The main advantage of training courses held at the FUSE LCT is that it has laboratories for science classes; an audio-visual room; a library; equipment, such as computers, duplicating machines, televisions, VCDs, etc.; and clerical staff to assist in administrative matters.

Off-site

During summer, off-site training courses are held in the provinces in response to requests from the Regional/Division offices of the Department of Education and from private institutions.

A MULTIFACETED APPROACH TO TEACHER UPGRADING: A HISTORICAL PERSPECTIVE

Among countries in the Asia-Pacific region, the Philippines continue to have one of the highest literacy rates—93.5%. Apart from being a highly educated nation, the Philippines also boasts of a society where English is the second official language. And because English is the lingua franca of the civilized world and the international language of science and commerce, Filipinos have a competitive edge over their Asian neighbors. But as Philippine teaching standards have alarmingly declined, the advantage enjoyed by Filipinos for decades is being threatened.

In a visit to Hong Kong in 1994, Mr. Lucio C. Tan saw how Philippine education was lagging behind. Upon his return to the Philippines, Mr. Tan met with former Senate President Edgardo J. Angara and former Chair of the Education Committee of the House of Representative Dr. Salvador H. Escudero III to inform them of how the former Crown Colony had developed a modern and technology-driven educational system, distinguishing itself in English, science and mathematics, disciplines where the Philippines once excelled. Taken side – by - side with the alarming findings of the Congressional Oversight Committee on Education (EDCOM) that elementary school graduates only learned the equivalent of three-and-a-half years of schooling, they resolved to take quick and decisive intervention to assist the government in arresting the deteriorating state of Philippine education.

A Chronology of Significant Events

FUSE has been making a mark in Philippine education for the past 12 years. The historical development of its initiatives in teacher upgrading can be divided into four periods: (1) Lighting the FUSE (1994-1996); (2) Shooting Up (1997-1999); (3) Spreading Outward (2000-2002); and (4) Shining Through (2003-present).

Lighting the FUSE (1994-1996)

Responding to the problem of the declining standard of Philippine education, a group of educators, businessmen, and legislators began a series of meetings, mulling over details, including the funding requirements for a foundation that could help raise the standard of education in the country, with the help of government and the academe. Thus was born the Foundation for Upgrading the Standard of Education, Inc. or FUSE, organized and formally incorporated on 12 April 1994.

Mission statement.

A non-profit non-governmental organization, FUSE was formed for educational, cultural, scientific and social development pursuits. It aims to elevate and maintain a high standard of education through improved teacher training, especially in science, mathematics, and English.

Under its charter, FUSE would assist in upgrading the following fields, which it believed would be the main engine of Philippine economic growth: industry, agriculture and natural resources, health sciences, biological and physical sciences, energy, food and nutrition, environment, engineering, social sciences, and the humanities.

Apart from these undertakings, FUSE would also (1) do necessary research work to optimize use of indigenous Filipino materials and innovative technology; (2) conduct educational programs, including the writing, publishing and production of textbooks and other teaching aids for more effective teaching; (3) promote, through school-related activities, the use of Philippine-made products both in the local and international markets; (4) assist in historical and natural conservation and restoration programs; and (5) promote programs in waste recycling and use of alternative energy sources, like solar power, and encourage the participation of private persons, corporations, and other entities in such programs.

Steered by a 15-member Board of Trustees, FUSE drew up a three-pronged approach to achieve FUSE's goal of elevating and maintaining a high standard of education through the training of teachers:

(1) An intensive and nationwide English training program over the next five years;
(2) A radio-television program for teachers and students;
(3) A monthly forum in which resource speakers would broaden the perspectives of educators, policymakers, and businessmen.

The first centerpiece program implemented by FUSE was the Summer English Workshop for public and private high school teachers in English in 1994. The workshops were held every summer until 1996 and re-introduced in 2001. In 1995, FUSE started partnering with another organization in training teachers—the College English Teachers' Association (CETA). It also joined the Department of Education, Culture, and Sports (DECS), Department of Science and Technology (DOST), the University of the Philippines (UP)-National Institute of Science and Mathematics Education (NISMED), People's Television Network, and the Philippine Normal University (PNU) in producing CONSTEL (Continuing Science Education via Television). Since 1995, FUSE has been reproducing and distributing CONSTEL CD's (formerly videotapes) to schools and institutions all over the Philippines. The distribution used to be done by Allied Bank, which had branches all over the country; at present it is being distributed to institutions through the FUSE training courses.

Shooting Up (1997-1999)

This period is characterized by an upsurge of varied activities in teacher upgrading—more than what were originally planned: the regular Philippine English Language Training (PELT) and eight new courses with seven new partners:

- Center for English for Specific Purposes (CESP) of De La Salle University (DLSU)
- Asia Pacific College (APC) and DECS
- Adamson University and Philippine Association for

Technological Education, Inc. (PATE)
- Philippine Normal University (PNU)
- EduQuest, Inc.
- University of the East (UE)

This period also marked teacher upgrading on the use of CONSTEL tapes in English and Science and the birth of Fusion, a journal published bi-annually featuring the speeches of resource persons during the monthly FUSE forum / General Assembly.

Spreading Outward (2000-2002)

In 2001 FUSE revisited its vision and mission statements. The result is its present Vision: "A Community of Committed Professionals Aware of Critical Education Issues and Taking Voluntary Action to Help Attain Quality Education." The present Mission statements are: (1) valuing integrity and quality education; (2) sharing and integrating knowledge, expertise and best practices and resources; and (3) enhancing professionalism in education. The FUSE Committees tasked to carry out the mission of the Foundation are advocacy, training, research, and resource generation. Teacher upgrading became the responsibility of the Training Committee.

FUSE spread outward and targeted participants at different levels: administrators and supervisors of English, Science, and Mathematics, elementary and high school teachers, college faculty, subject specialists (trainers), and FUSE members. The period is marked by FUSE both initiating teacher upgrading programs and responding to requests from different institutions all over the country. Partnering with the Catholic Education Association of the Philippines (CEAP) and Don Bosco College, FUSE offered the Trainers' Training on Supervision of English, Mathematics and Science Instruction for public and private school administrators and supervisors; the training on the use of CONSTEL English, Science, and Physics tapes for elementary and high school teachers; College Physics faculty; and for FUSE members, an educational visit to Malaysia/ Singapore and Hong Kong.

Shining Through (2003-present)

This period sees FUSE concentrating its efforts on prioritized activities and programs. Such fine-tuning was necessary for FUSE to be an innovative change agent and a high-quality provider of specific teacher upgrading services. In spite of lessening the variety of teacher upgrading activities, it continues to shine in the initiatives it decided to maintain, sustain, and improve the 2-day courses on the use of CONSTEC VCDs / DVDs in the Teaching of English, Science and Health, Physics, and Chemistry. It has also gone one step farther to make the training accessible to teachers in far-flung areas: it went Divisional and held summer courses off-site. The team of trainers traveled from the farthest northernmost province to the far south to give teachers hands-on training in using technology-oriented strategies in teaching English, science and health, physics, and chemistry.

Another significant event that happened is the institutionalization of the FUSE training courses, now being held at the Learning Center for Teachers (LCT)—truly a training and learning site. From its small office cum training room at the Allied Bank Building in Makati City, FUSE moved to a spacious site occupying one floor of the Pearl of the Orient Building on Roxas Boulevard, Manila. Another first during this period is the participation of FUSE in the Science and Engineering Education Program (SEEP), sponsoring graduate studies of selected public school teachers. During this time, also, FUSE was granted accreditation as an NGO—FUSE shining through!

CHALLENGES AND CONCERNS

The rapidly changing social, political, economic, technological and educational climate in the Philippines poses challenges for FUSE's initiatives to upgrade teacher competence, to which it must respond in a proactive manner:

- **Teacher migration.** Filipino teachers, particularly in Science and Mathematics, are in demand abroad, especially in the United States. The Philippines cannot compete with the big

salary other countries are offering, inasmuch as the main reason for migration is economic. What compounds the problem is that teachers who leave are the experienced, trained, and good teachers; otherwise they would not be accepted to teach abroad.

- **Technological advances.** At present, FUSE uses multi-media training with the use of computers and DVDs. Development in technology is so fast that there are now hardware and software that are more powerful in capabilities.

- **Shifting value systems.** The economic situation has changed the lifestyle of the people, affecting their value systems.

- **Rapid population growth.** Class size affects instruction. Teachers have to be resourceful and creative to cope with large classes.

These are but some of the challenges that affect initiatives to upgrade teacher competencies to which FUSE must respond.

FINALLY ...

From humble beginnings as a small group the Foundation's roster of members has grown to over 100, representing prestigious universities, colleges, schools, government, and the private sector.

Mindful of its vision and mission, FUSE has conscientiously carried out its primary objective of training teachers, the pillars of the country's educational system. The Foundation continues to undertake activities designed to upgrade teacher capability in English, Science, and Mathematics. It acknowledges that reforming the country's educational system should begin by improving teachers' skills and teaching methods, knowing too well that quality teachers make quality students.

In the words of the President of FUSE, Dr. Salvador H.

Escudero III, "We are often asked how FUSE could make a difference. In response, I say that while our contributions are modest, we are confident that we are helping make solid ground for the preparation of future leaders through our teachers. We are not satisfied with theories and practices alone. We must see outcomes. That is where FUSE hopes to make a real difference."

"FUSE is a gift to Philippine education. Its members render their services for free and find joy in helping others attain quality education in the country," so stated FUSE benefactor Dr. Lucio C. Tan.

Looking forward, FUSE expects to train more teachers, reach out to a greater number of educators throughout the country, assist the government in shaping and carrying out comprehensive and efficient programs, and to help achieve the vision of government that every Filipino youth, regardless of social status, avail of the privilege of coming on equal terms with the rest of the world.

And that is why FUSE is making history in upgrading teacher competency in the Philippines.

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