PART I. BACKGROUND AND OVERVIEW OF PROJECT APEX

1. Rationale

1.1 Purpose of the Manual. This systems manual is developed as a resource information handbook for the Applied Academics for Excellence (APEX) Project. This is intended to be use for APEX Project briefing and orientation to partners, stakeholders and other parties that are interested to implement APEX. This manual is not a project management handbook but this would also provide users and readers insights on the management system and process used in the implementation of Project APEX.

This manual aims to provide users a substantial understanding and overview of the principles and objectives of APEX as well as the important components and deliverables of the project such as project organization, management process, communication, monitoring and evaluation. This manual also provides important information on the different APEX models that were developed and implemented by the Southeast Asian Ministers of Education Organization – Regional Center for Educational Innovation and Technology (SEAMEO INNOTECH). Each model is anchored on the unique socio-economic condition, educational demands, cultural and political spheres of the different regions where APEX has been implemented. The users of this manual will have a grasp of how the different models of APEX in public secondary education could be adopted as an educational technology that fits-in to different socio-economic conditions and existing educational requirements of the school and the community that the school caters.

1.2 Users of the Manual. This systems manual has been developed by SEAMEO INNOTECH primarily for the use of APEX partners and key stakeholders in and beyond the ASEAN region for the implementation of Project APEX such as the Department/Ministries of Education, local government units, private educational institutions, business and industries, local school boards and government agencies. This systems manual also provides a rich source of information on the implementation of APEX for the following users:
• Private companies and corporations that are interested to implement APEX as a Corporate Social Responsibility Program and would like to know how APEX could contribute to the enhancement of the quality of basic and higher education or how APEX could be utilized as a poverty alleviation strategy through the provision of quality basic education;

• Non-Government Organizations (NGO) that are financing, supporting or implementing development projects in education and poverty alleviation in and beyond the ASEAN region and are interested to support basic education or educational institutions as part of their development agenda for enhancing the quality of basic education, poverty alleviation through the improvement of the delivery of basic education, technology transfer, education for all and life-long learning, and education for sustainable development;

• Other sectors and individuals from the academe, business and industry and donor agencies among others doing a study or research work on effective models of educational innovations and technology transfer in Southeast Asia.

1.3 Considerations in Using the Manual. Although this systems manual is developed as a handbook for project implementers, stakeholders and future institutions and individuals who would like to understand the APEX Project or are willing to introduce the technology of APEX as an educational reform or corporate undertaking, it is important to observe that using this manual and understanding the information presented herein may also provide different points of view and perspectives to different users since each users may have their own unique organizational thrust, purpose, intention, mission and goals of undertaking the project. Thus, one part of this manual has been dedicated to Frequently–Asked–Question (FAQ) to provide users additional details and information about Project APEX.
2. **Overview of Project APEX**

2.1 **Meaning.** APEX is a community-based project developed by SEAMEO INNOTECH that connects secondary schools to the cultural and socio-economic development framework of the community through meaningful collaborations and governance of basic education. Academic teaching and learning utilize the workplace, entrepreneurship and the community as learning contexts to enrich the student’s learning and development, and ingrain in them civic responsibility early on in life.

2.2 **Strategic Direction.** APEX offers a progressive and conscious effort in engaging schools and their communities. It is founded on partnerships between and among the local government units, ministries of education, parents, local business and industries, civic organizations and the wider community. By engaging the local government and community in meaningful collaborations, the Project seeks to position the secondary school within the development framework of the community and in the process, improve the quality of secondary education including its positive contribution in the community through local education governance. APEX aims to produce students who are academically and technically prepared to pursue higher education and/or a career/business of their choice.

2.3 **Project Sites.** APEX has been implemented in Region IV – A (The Laguna Model, 2001 – 2005) as a local government project that aims to enhance the quality of education in public secondary schools where the number of students per class ranged from 70 – 100 students. APEX has proven that its system was an effective solution that provides quality classroom instruction in a school with high teacher-student ratio while at the same time, creates higher academic achievement for students and gratification from academic teachers and technical – vocational instructors.

APEX has been introduced in Region VIII (The Leyte Model, 2003 – 2007) with a new structural framework as deemed more substantive to be implemented in the region due to its socio-economic condition, which is closely attached to its socio-cultural practices and values i.e. dominantly agricultural-based economy. The implementation of APEX in Leyte proved that public secondary schools through their leadership could assume a
highly productive role in engaging the local government and other key stakeholders in the overall framework of producing academically trained and business-oriented high school graduates that will form a new generation of entrepreneurs and business owners.

With the progressing successes and overwhelming experiences of Project APEX in Laguna and Leyte, APEX was introduced with a more dynamic structural framework in Region VII (The Cebu Model, 2005 – 2009) combining the academic, workplace, technical and entrepreneurial models due to the varied socio-economic nature and conditions of communities that the schools are serving. The new APEX Model, with a more enhanced program of innovation has proven its unique features as an educational innovation that could be integrated and suits-in in the public secondary school system without altering the existing structure and delivery framework of the basic educational system. APEX Cebu Model has eventually transpired the general education high schools into technical – vocational high schools due to the results achieved by school principals, teachers and students, but most of all due to the strong leadership of APEX school administrators in bridging the development gaps between the delivery of education and the kind of graduates that educational institutions are producing by anchoring the delivery of education on the needs of the community.

The most recent and most exciting undertaking of APEX was in Region VI (The Semirara Model, 2008 – 2009). APEX was implemented in the island of Semirara, Antique on which the major livelihood of the people is employment to the Semirara Mining Corporation (SMC) while the rest of them generally generate their family income through farming, fishing and livestock–raising. Unlike in Laguna, Leyte, and Cebu, where the APEX Project sponsors were local government units, in Semirara, APEX is fully funded by a private sector organization, the Semirara Mining Corporation.

APEX Semirara model as a project was a new innovative attempt of SEAMEO INNOTECH to address the specific needs of private and public high schools with regards to improving the academic performance of students in Science, Mathematics and English subjects. APEX as a complete solution was implemented not on its entirety but focuses only on the adoption of one of its key components called “Building the
Foundations of Applied Academics” to solve a specific constraint in the delivery of classroom instruction and in improving the quality of the teaching – learning process.

PART II. THE APEX PROJECT

1. Strategic Objectives

1.1 Develop the Basic Workplace and Entrepreneurial Competencies of Students.

Project APEX aims to produce academically and technically prepared students who are ready to pursue higher education and/or a career or enterprise of their choice through the development of basic workplace competencies and increased competencies in Mathematics and Science. A principal motivating factor for this educational reform is the educational program design that will more adequately prepare young people for the job market within the existing economic climate, while providing the human resources necessary to ensure sustainable development of the local community where the school exists.

The basic workplace competency consists of three interconnected skills, namely applied academics, technical and employability skills. While the entrepreneurial competency integrates the applied academics, business and progressive life skills to enable the students to generate, recognize, and seize opportunities to invest and start a business enterprise.

To develop this set of competencies, the Project implements the Applied Academics Preparation and Career Preparation Programs which are heavily focused on strengthening the students’ foundation skills in science and math, together with employability and entrepreneurial skills needed to be successful in the workplace.

The Applied Academics approach to learning involves the teaching of solid academic content like science and mathematics, by means of hands-on real world applications. It enables students to discover how knowledge and information can be used in the context of exploration, discovery and invention. Science, Math and Technology/Livelihood
teachers use a wide range of approaches to gain student's interest and commitment. Particularly effective are the frequent opportunities which students are given to discuss their work in groups. Lessons are carefully planned and purposeful, and take good account of students’ different levels of understanding.

Employability/life skills, which are defined as work habits and social skills desirable to employers and business clients, include traits such as work ethics, working responsibly, communicating ideas and information, collecting, organizing and analyzing information, planning and organizing activities and applying quality tool. These are necessary skills attained not through books, but formed as one goes through the various stages of life.

1.2 Build Strong Institutional Capacity for Program Sustainability

Project APEX also manages the transformation of schools into Applied Academics Schools to ensure its sustainability. The main entry point of the project is the competency development of APEX teachers in using the Contextual Teaching and Learning (CTL) approach in Science and Math and in implementing the Entrepreneurship and Technical Skills Development Program for students. These competencies are further enhanced through periodic coaching and conduct of enhancement sessions for APEX learning teams (composed of science and math teachers) in using the CTL approach, and by the integration of Community-based Adventures through Life-long Learning (CALL) and provision of Teacher’s Guides in applied academics, entrepreneurship and technological preparation for a more experiential and learner-centered approach to teaching and learning. The school heads and subject coordinators are likewise developed by providing them training on project management, bridging leadership, and quality management thru 5S practice.

1.3 Actively Engage Relevant Community Stakeholders

Project APEX engages the active support and collaboration of the project stakeholders—the Local Government Units (LGU), the school administrators and the different local organizations—because they play a critical role in the project’s sustainability. An effective communication system and a school-based Project Management Plan on Applied
Academics and Career Preparation will be installed to facilitate the exchange of information and experiences, as well as to further improve the project implementation.

2. **Principles of APEX**

2.1 **APEX Supports Community Development.** APEX as a secondary school project gives deep consideration on the development environment and the emerging requirements of the immediate community as the larger framework on which an education project is anchored. The local authority has to be deeply convinced that the project squarely contributes to the development and growth of the community.

2.2 **APEX Seeds Learning Communities.** APEX serves not as the expert on education issues of the community, but rather as a nurturing and enabling facilitator of community learning processes.

2.3 **APEX Embraces the Strength-based Approach to Development.** APEX inquires into the possible, and in that sense allows possibilities rather than limitations in secondary education. It capitalizes on what works and on the existing resources present in the community. Using the Appreciative Inquiry (Ai) approach in its processes particularly in classroom teaching, performance monitoring and evaluation, the Project actively involves the students, teachers, parents and other stakeholders in discussions which gives the opportunity of sustaining the climate for collaborative relationship between the school and the members of the community e.g. parents, local community, LGU, business and industry. In these discussions, stakeholders share their experiences in the project, identify their strengths as a school community, and discover further ways of collaboration for project success. It is hoped as well, that by engaging the stakeholders in these processes, a stronger commitment for success of the students in the project among the school and community members would be realized.

2.4 **APEX Generates Positive Choices.** APEX provides high school students with positive options or better life choices as they join the world of work, establish an enterprise of choice, or pursue higher education.
2.5 APEX Connects Around Youth Success. Families and communities are actively engaged in the entire learning process and are interlinked and interconnected to rally around the issue of youth success.

The project understands the need for communities support (local and business community) to participate in the planning, management and delivery of meaningful education. This includes discussions on ways in which high school students learn new forms of organizing learning. Governance reforms involve not just modifications of who decides what, but also fundamental changes in how we think about education; these include questioning the existing model of schooling, and consideration of lifelong learning approaches. Schools then, are seen as open systems, motivated by external pressure and demands. Schools are not "closed systems" that can decide what they want to do and set their standards for success in isolation from their constituents. It becomes clear that schools cannot accomplish their mission without the active support of the community at large, including parents, businesses, and local and national governmental agencies, senior citizens, women’s group.

3. The APEX Models

There are various models being adopted by Project APEX. These models were developed based from the key characteristics of the initial project sites and are so named after these sites. In adopting one or the other model, the socio-economic characteristics of the proposed project site is studied and the most apt model is proposed to the project sponsor or benefactor through school-community consultations, the project deliverables are tailored fit to the current and emerging development needs of the school and communities.

3.1 Developing Basic Workplace Competencies: The Laguna Model

One of the main issues facing suburban industrial provinces of the Philippines like Laguna is the fact that many of its students leave high schools without the necessary occupational and academic skills to succeed in the workplace or in post-secondary education. In response to this challenge, APEX forges ahead to produce students who
are academically and technically prepared to effectively “address the human resource requirements of business and industry sectors by ensuring continuous supply of academically and technically prepared workforce.”

The Basic Workplace Competencies model focuses on improving academics by ensuring that discussions in Science and Mathematics are done within the context of the world of work. Interventions include the training of science and mathematics teachers on the use of Contextual Teaching and Learning (CTL) approach and the development APEX of Teacher’s Guides in Science and Mathematics.

The most crucial component however of this model is the development of workplace competency of students. Workplace competency, under project APEX, is defined as a set of competencies necessary for one to be successful in the workplace, and it covers the academic, technical and employability skills (see Figure 1).

The operating assumption is that the development of basic workplace competency is possible if there is strong academic, technical and employability foundation in secondary school graduates. A career cluster along Engineering and Technology has been adopted as the main area of concentration for the APEX schools in Laguna after a series of consultation with leading business and industry in the province and the conduct of a career profile survey. The training programs designed for the defined career cluster are aligned with: Automotive, Electronics, Electrical Technology, Technical Drawing and Computer Technology,

Given APEX interventions, the school serves as the nucleus for integrating practical work-based learning with the academic and employability/soft skills.
3.2 Developing Basic Entrepreneurship: The Leyte Model

Unlike Laguna where industries and employment opportunity exist, majority of the Philippines provincial economies like Leyte province, are highly dependent on agriculture. Where this is the chief feature of a province, economic and the strategic development directions were the deciding factors in adopting entrepreneurship as the central theme for the APEX Project. Support for enterprise education has to come not only from those involved in education, but also from those interested in the province’s economic well-being. The introduction of entrepreneurship at the schools hopes to make young people more enterprising and more willing to consider starting their own business as a positive career option.

The main purpose of the Leyte Model is to ensure that students are ready to pursue post-secondary education and/or an enterprise of choice. If sustained, the ultimate goal is to develop sustainable agri-based enterprises managed by young entrepreneurs of the province. The most crucial component of the Leyte model was the development of entrepreneurial competency of students which is defined as a set of competencies necessary for one to be a successful entrepreneur. This set of competencies covers the academic, business and progressive life skills (see Figure 2).

This model has adopted ten (10) progressive life skills anchored on the Personal Entrepreneurial Characteristics identified by CEFE (Competency based Economies through Formation of Enterprise) and this includes: opportunity-seeking, self-confidence, persistence, risk-taking, goal setting, commitment to work contract, demand for quality and efficiency, systematic planning and monitoring, information seeking and persuasion and networking.
Through participation in enterprise projects and activities, students are motivated to learn, and are provided with a “real” context in which they can practice and develop many of the skills and qualities that are valuable preparation for adult life and the world of entrepreneurship. Enterprise education as it is implemented goes beyond the classroom and incorporates a more experiential learning- through actual marketing encounters, on-the-job training in business establishment, internship in industries and mentorship with local entrepreneurs.

3.3 Developing Basic Workplace and Entrepreneurship: The Cebu Model

The third model is the Basic Workplace and Entrepreneurship Model or the Cebu Model, taken after the model adopted for Cebu province given its unique socio-economic environment that combines a rich background for both entrepreneurship and technological preparation for its young people.

The principles and practices of APEX bridge the gap between the graduates schools produce and labour market demand. Through APEX, high school students are provided a pathway for career life-long learning, thus they become academically and technically prepared for entry-level skilled jobs to which they aspire. In the fast-paced, unstructured world of the knowledge economy, the only potent force is the depth of one’s knowledge and the ability to use it. This is where Applied Academics comes into play, for it creates possibilities to prepare high school graduates to meet the labour market demand.

The technical programs offered by APEX schools in Cebu are aligned with the requirements of Tourism Industry, Manufacturing and Civil Works. Entrepreneurship is also pursued for school communities where the economy is dependent on agri-based and trading activities.
3.4 Establishing the Foundations of Applied Academics: The Semirara Model

Compared to the three APEX models, the implementation of APEX has been introduced into a building block of educational reform or “solution” considering each component, i.e. “Establishing the Foundations of Applied Academics” to solve a specific concern in the delivery of classroom instruction and in improving the quality of teaching – learning process specifically in Science, Mathematics and English language subjects. This applied reform or solution is not confined only to teaching Science, Mathematics and English language subjects but can be used by the teacher in other academic subjects such as Technology and Livelihood Education, Music, Arts and Physical Education, Pilipino and Social Studies.

The content and substance of the building block approach to solve a specific concern in teaching does not depart from the overall structure and framework of APEX but treated as an “unbundled” model. Like in a jigsaw puzzle, the APEX technology is composed of several pieces of the puzzle called “foundations or components”. Each pieces has a distinct shape and mark on its surface that connects one piece to another and creates a picture or portrait when completely attached to each other.

This makes the implementation of each APEX component more focused, customized and based on the prevailing need of the school to enhance its educational delivery system and improve the performance of students. The “unbundled” version of “Establishing the Foundations of Applied Academics” as one of the strategic goals in the Island of Semirara focuses on improving the academic performance of students by first improving the teaching and classroom management competencies of academic teachers. The project has also integrated intensive coaching and enhancement sessions on contextual teaching and learning that further complemented the implementation of Applied Academics program compared to other APEX models.
4. Project Components and Deliverables

4.1 School Community Preparation

4.1.1 Advocacy and Consultative Meetings

These are exploratory talks between SEAMEO INNOTECH and the key stakeholders. SEAMEO INNOTECH will level off with the stakeholders to clarify and firm-up the project direction and conduct series of consultations to explore the best possibilities in implementing the APEX project with the Department/Ministry of Education chosen beneficiary schools.

4.1.2 Baseline/Benchmarking Studies

Consistent with the goal of aligning APEX with the development needs of the community, baseline and benchmarking studies will be undertaken to identify the core competencies required of the growing economies and industries of the school-community. Projections on the future skills requirements of the human resources of the different school communities will have to be included in these studies. Based on these studies, specific strategies for the school community will be defined.

This activity also aims to locate the core competencies of the school-community by conducting school profiling to identify the areas of strength and the required instructional competencies that need to be further developed.

4.1.3 School Community Orientation and Formation of Project Steering Committee

The project start-up activities usually involve the Memorandum of Agreement (MOA) signing, project launching, school community orientation and project steering committee formation. These will formalize the implementation of the project in the school. All critical project stakeholders will participate in this project inception.
4.2 Academic Preparation: Applied Academics

Applied Academics is an approach to learning which focuses on motivating and challenging students to connect what they learn with their actual experiences and with what interest them. An approach that strengthens academic performance with emphasis in Science and Mathematics, the Applied Academics approach takes on the basic premise that if academic content is made more relevant, participatory and concrete, students learn more and apply learning in their lives.

The Applied Academics approach adopts the Contextual Teaching and Learning (CTL) strategy, which involves the teaching of solid academic contents in Science and Mathematics by means of hands-on real world applications. CTL is well received by both the students and teachers in APEX schools because it enables students to discover how knowledge and information which can be used in the context of exploration, discovery and invention. The overall quality of teaching is high and has improved as a result of the regular monitoring visits. Science, Math and Technology and Livelihood teachers are enthusiastic and use a wide range of approaches to gain student's interest and commitment. Particularly effective are the frequent opportunities which students are given to discuss their work in groups. Lessons are carefully planned and purposeful, and take good account of students’ different levels of understanding, learning abilities, and learning pace.

4.2.1 Training of Science, Math and English Teachers on Content Mastery

While many factors contribute to low student performance, the teacher remains to be the most critical factor. This training intends address specific competency development gaps of secondary school teachers in the core subjects particularly those who have manifested conceptual or content inadequacies in Mathematics, Science, and English based on competency tests.

Cognizant of the important role the teacher plays in the teaching learning process, SEAMEO INNOTECH in partnership with teacher education institutions in Science, Mathematics and English will design and implement a customized training program to strengthen the teacher’s content and pedagogy mastery on the core subjects. Specifically,
it aims to improve their conceptual understanding of basic science and mathematics concepts; demonstrate improved pedagogical content knowledge (PCK) in science and mathematics; demonstrate, capacities for higher order thinking skills, scientific and mathematical habits of mind, values and attitudes; and apply the learner-centered activity based approaches in lesson planning, classroom interaction, and assessment of student learning.

This training will help improve the conceptual foundation of teachers that will translate into improved students’ achievement in the subject areas and will prepare them for the succeeding trainings on pedagogical strategies.

4.2.2 Training of Teachers on Contextual Teaching and Learning (CTL) Approach

The teachers will be trained in the use of the Contextual Teaching and Learning (CTL), the APEX approach in teaching Science, Math and TLE subjects. In this approach, connections are made between knowledge and its application to real life situations. The CTL training will cover seven (7) modules to develop the skills of teachers as learning facilitator, performance evaluator, learning process facilitator, community-based learning facilitator and curriculum designer. This training will heavily employ skills practice sessions in the development of contextualized lesson plans and teachers demonstrations on the application of CTL in a simulated classroom environment.

Part of the CTL training for school administrators and teachers is an in-depth training on the use of authentic assessment tools. Authentic Assessment is a form of assessment where students' abilities in 'real-world' contexts are measured. The assessment focused on the student’s analytical skills; ability to integrate what they learn; creativity; ability to work collaboratively; including written and oral expression skills. Authentic assessment highlights on the learning process as well as the final output of the students either individually or in groups. During the training, the participants will develop authentic assessment materials intended for their respective subject areas.
Another skills-building activity for the teachers during the two-week CTL training is the development of innovative instruction materials. This is a customized workshop anchored on the competency requirements of teachers along the area of instructional materials development. The expected outputs of this activity are student’s learning materials, worksheets and learning kits based on the current requirements of the subject areas particularly in science and mathematics.

4.2.3 Formation of Learning Teams

To maximize the learning potentials of students and teachers, Learning Teams will be formed in the schools where teachers can share innovations in the use of the APEX approach. Teachers will be given training on how to organize and manage learning teams. Learning teams are the most effective, cost-efficient way for teachers to learn what changes are needed in their practice and then to introduce/initiate those changes. It also has the added benefit of building rapport, trust, and support among teachers of various disciplines and the school administrators as well. Within the learning team, teachers could share their own innovations in using the APEX approach and discuss possibilities of integrating the school-community context across curriculum, to their family, and to the school communities.

4.2.4 Development of Learning Materials

Project APEX uses an integrated approach to help students make meaningful connections between the areas of content that are studied in relation to everyday life. To fully support this, the Project has developed a series of learning packages for its project schools called Teachers’ Guides particularly in Science and Mathematics that follow the competencies of the Department/Ministry’s Basic Education Curriculum. The Teachers Guides are presented in a Unit Plan format coupled with a set of lessons plans and student activities using Contextual Teaching and Learning (CTL) principles and strategies in consonance with the Understanding by Design approach. Exclusively designed for APEX teachers, this teaching package serves as a guide to effectively facilitate and lead students to discover, explore and apply science and mathematics in the workplace, business, home or community setting. Teachers’ Guides for the customization of the
Technology and Livelihood Education (TLE) will be developed based on the identified community responsive technology or industry.

4.2.5 Training on the Development of Community Based Learning Projects

This training provides the teachers and school administrators on how to adopt the CALL (Community Based Adventures for Life-long Learning) as a strategy to enhance the teaching of science, math and TLE by integrating the different subject areas using the occupational and other socio-economic contexts. Occupational contexts are sources of real-world problem situations that provide extensive cognitive, social, and physical cues that support application and transfer of the students’ knowledge. In a CALL strategy, purposeful connections are made among subjects areas e.g. the technical/business concepts in a thematic/project unit based approach taught either in a Mathematics, Science, English and other subject areas, and students should be able to explicitly identify the bridge between content areas and technical/business concepts and the practical applications feasible and relevant to students’ interest and within the context and development needs of the community.

4.2.6 CALL Operation’s Manual

The manual provides the basic features of a CALL project. It contains standard procedures and requirements in conceptualizing, formulating and assessing the feasibility of a community-based project. A certain portion of the manual highlights the sample CALL projects of APEX schools. The operation’s manual will serve as standard guide for teachers and students who would like to develop their own CALL projects in the school community.

4.2.7 School-based Coaching Sessions

In a school based coaching session, actual classroom observations are made and teachers are coached on how best to implement the Contextual Teaching and Learning approach and maximize the use of APEX Teachers’ Guides. The sessions also call for the documentation of school-based initiatives on the implementation of the program e.g.
mentoring among learning teams, team teaching, teaching aids development, etc. and the development of teaching-learning innovations.

4.2.8 CTL Enhancement Sessions

This is a 3-day workshop directed towards improving teacher effectiveness in using CTL in their classrooms. The topics covered in this workshop would vary depending on the results of the coaching sessions conducted by the CTL mentors from SEAMEO INNOTECH. Generally, the topics consist of content-update, instructional leadership and classroom management and community-based project enhancement. Enhancement Sessions are customized depending on the immediate needs of APEX teachers.

a) Content-updates – Teachers are given lecture-workshops on Science and Mathematics concepts. This is also an opportunity to check the teacher’s misconceptions and to present new contextual ideas on how to deliver science and mathematics for a broader and deeper understanding of contents. This is oftentimes necessary particularly since CTL is difficult if teachers have content gaps.

b) Instructional Leadership and Classroom Management – This component addresses the technical needs of a teacher in managing and organizing a conducive and friendly learning environment. Particularly, it focuses on enhancing the three aspects of instructional leadership and classroom management such as content management, conduct management, and covenant management. Content management focuses on how the teachers manage space, materials, equipment, the movement of students, and lessons that are part of the curriculum. On the other hand, conduct management refers to the set of procedural skills that teachers employ in their attempt to address and resolve discipline problems in the classroom. Lastly, covenant management focuses on the classroom group as a social system that has its own features that teachers have to take into account when managing interpersonal relationships in the classroom.
This component also delves with strengthening the school support system through the enhancement of learning teams. CTL teachers are given training on the effective management of learning teams. The establishment of learning teams promotes professional and team development within the school community.

c) Community-based project enhancement (CALL enhancement workshop). On top of the basic CALL training, teachers are given workshop sessions on the use of CALL. Teachers will benefit from the inputs of CTL mentors on project development, monitoring, evaluation and reporting. The workshop aims to develop creative ideas on community-based learning, in addition teachers are also trained to assess the feasibility of CALL projects developed by students.

4.3 Career Preparation Program

For secondary education to be more relevant and responsive to the demands of business and industry, the Technology and Livelihood Education (TLE) curriculum will be contextualized to focus on key technical areas, which are required by the industrial base of the region and its specific provinces, and on entrepreneurial preparation to respond to the demands of the local business environment. The APEX Career Preparation Program prepares students for the world of work by exposing them to various programs on technical and entrepreneurial skills development. It is an exploration process designed to discover students’ career interests which maybe in line with technical or enterprise development.

4.3.1 Training on Career Counseling

To fully support the students in identifying their career directions, training for career counseling will be conducted for the school’s guidance counselors. Students have to be assisted early on in their high school preparation on the tracks they intend to pursue after graduation. Assisting students in their career decisions give graduates advice on those careers that are relevant to their communities and will be more likely inclined to stay motivated in their studies as they see themselves actively contributing to the growth of their communities.
4.3.2 Training on Enterprise Preparation (EntreP) for TLE Teachers

Along the area of career preparation thru basic entrepreneurship, TLE Teachers will undergo a month-long Entrepreneurial Skills Enhancement Program in cooperation with EntreP experts/service providers. The EntreP activities also include completion of community career profiles, consultation with business and micro-finance groups, development of an enhanced TLE/EntreP curriculum, provision of EntreP Teacher’s Guides and Gaming Kits and coaching and monitoring of EntreP school-based activities.

4.3.3 Coaching and Monitoring of EntreP Program

Coaching of teachers on the implementation of the EntreP Program also involves actual classroom observations and teachers are coached on how to best utilize the Teachers’ Guides on Entrepreneurship. The school visits also called for the documentation of school-based initiatives on the implementation of the program e.g. mentoring among learning teams, team teaching, teaching aids development, etc.

Concurrent to this activity is the conduct and monitoring of market encounters where the students are given enough time and space in the campus or in the community to sell their products and offer their services. This event gives the students the opportunity to demonstrate their personal entrepreneurial competencies (i.e., their business and progressive life skills).

Monitoring of the performance of teachers is done to identify further areas to strengthen their individual capabilities and EntreP Learning Team for peer mentoring, support in the preparation of learning aids, more effective classroom management, and for discussion of other EntreP related concerns.

4.3.4 Technology Preparation Program

Implementing Tech Prep programs based on market demand may cause concern to school heads especially on TLE/TechVoc teachers if a TechnoPrep program is new and requires the acquisition of new or special skills beyond the interest and competencies of what the TLE/TechVoc teachers currently possessed. A re-training or enhancement
training as well as consultation sessions with teachers and staff is necessary. Technical trainings will be done in partnership with duly-accredited technical-vocational training institutions (e.g., Technical Education and Skills Development Authority) while, on-the-job trainings using the Dual Training System’s (DTS) approach will be done in partnership with the business and industry sector.

4.3.5 Consultations with Business and Industry

Consultations with businesses and industries are conducted as an input to the technical preparation program of the APEX schools. The industries are consulted on the technical competencies that are necessary for one to be successful at the workplace and the specific jobs or entry-level occupations that are required by the industries.

4.3.6 Adoption of the Dual Training System (DTS)

APEX adopts the Dual Training System as a strategy to effectively implement the TechnoPrep Program. DTS refers to an instructional delivery system of technical and vocational education and training that combines in-plant training and in-school training based on a training plan collaboratively designed and implemented by an accredited dual system educational institution/training center and accredited dual system agricultural, industrial and business establishments with prior notice and advice to the local government unit concerned. Under this system, said establishments and the educational institution share the responsibility of providing the trainee with the best possible job qualifications, the former essentially through practical training and the latter by securing an adequate level of specific, general and occupation-related theoretical instruction. The word "dual" refers to the two parties providing instruction: the concept "system" means that the two instructing parties do not operate independently of one another, but rather coordinate their efforts. *(Source: Philippine Dual Training System Act of 1994)*
4.3.7 Certification Program

The certification program is a job qualification standard in ensuring that teachers possess the required technical competencies in teaching specific specialization in technical and vocational subjects. It is the culmination of the technical skills training provided to teachers. The certification program refers to the certification of competencies of a person in a certain job or occupation by a government authority through a qualification assessment e.g., national certification on building wiring installation, welding, food and beverage services, housekeeping, etc.

Those teachers who had completed the technical trades training under the Technical Skills Enhancement Program (TSEP) will be encouraged to undertake the national competency assessment by a government authority (e.g., Technical Education and Skills Development Authority) for competency certification and recognition of qualifications to teach the technology preparation program. The assessment process seeks to determine whether the teacher as trainer could perform the standards expected in the workplace based on the defined competency standards promulgated by an authorized government institution.

4.3.8 Coaching and Monitoring on the Technology Preparation (TechnoPrep) Program

Coaching of teachers on the implementation of the TechnoPrep Program also involves actual classroom observations and teachers are coached on how to best utilize the Teachers’ Guides on TechnoPrep. The school visits also called for the documentation of school-based initiatives on the implementation of the program e.g. mentoring among learning teams, team teaching, teaching aids development, etc. Technical assistance on how to establish linkages with the business and industry sector and how to implement the DTS is also provided to ensure that the schools will have formal linkages in terms of implementing students’ industry–based attachment program.
4.3.9 Linking APEX Schools to Post Secondary Schools

APEX schools can be connected with post-secondary institutions such as Community Colleges and Technical and Vocational Education and Training Institutions within the framework of a combined secondary and post-secondary program which leads to a two-year associate's degree or a two year certificate. The Project can provide strong technical and entrepreneurial preparation in at least one field of engineering technology or trade, agriculture or business by building students’ competence in mathematics, science using applied academics through a sequential course of study and eventually leads to placement in employment.

The Community College or teach-voc institutions and APEX schools could work along resource-sharing partnership in terms of developing the technical skills of students and the provision of advance credits or academic promotion for graduates of APEX schools. Once the APEX students had completed the technology preparation programs with nationally certifiable competencies, they are entitled to receive advance academic credits in college if they plan to enroll in an associate or baccalaureate degree such as related to engineering and technology courses. The credit-banking system is made possible using the equivalency pathway or recognition of prior learning (e.g., Philippine National Qualifications Framework). With the articulation of programs between the APEX schools and the community college, students make a smooth transition from secondary education to post-secondary education without experiencing delays, duplication of courses, or loss of

The community college plays a very important role in advancing the academic and technology preparations of APEX students and graduates, more especially on the development of a career and the pursuit of an associate or baccalaureate degree of an APEX graduate.

4.3.10 Creation of School-Community Learning Resource Networks

To address the perennial issue of project sustainability, schools must be seen as a great resource to the community. It should be able to dispense services and expertise beyond its walls and facilitate convergence of ideas, resources and efforts of community
members. Further, it must serve as a learning hub for the whole community and center of community activities and youth involvement. This way, it is much easier to solicit and motivate ownership of the project. Through Project APEX, the school becomes a promoter of business initiatives in the community as it trains students in the workings of technology and entrepreneurship education. The students are also trained the habit of savings and its role in capital build-up and in developing self-reliance among learners.

4.4 Institutional Capacity Building for Secondary Schools

Project APEX, as a development initiative that links education with business, industry and the community, is a complex project that needs sound organization and management. It is thus equally important that the schools leading this initiative are equipped with the institutional capacity to mount, implement, and execute programs and activities for sustaining an Applied Academics School.

4.4.1 Training on Management of an Applied Academics School

The school heads, teachers, subject coordinators and the school APEX coordinator will be trained on project management, which covers competency building in goal-setting, project planning, management of time, task and resources including monitoring and evaluation. Equipped with these project management skills, school heads can plan new education projects such as the initiation of curricular innovations; the improvement of existing school programs; organizing school events; fundraising activities; identifying, communicating, and implementing school-community project goals and results to the wider community. The output of this training is a set of realistic and workable project plans initiated by the APEX school-community. The development of school-based managerial competencies of school administrators will enable them to effectively implement project APEX in cooperation with their local partners.

4.4.2 Trainer’s Training on Contextual Teaching and Learning

This training aims to enhance the training and facilitating skills of APEX teachers. Teachers will also learn how to design, evaluate and follow-up training programs specifically on the use of CTL. In effect, this prepares the school to venture into
partnership with other high schools for possible transfer of the CTL technology. After the training, CTL teacher-trainers are expected to formulate and implement a training plan for APEX expansion to partner schools.

4.4.3 Training in Quality Management

Quality Management as a component of Project APEX is intended to develop the schools’ capacity to observe industry standards of quality, orderliness and cleanliness. Quality Teams will be formed in each school and these teams will formulate and implement a quality management plan for the school. The teams will also monitor the implementation of the plan and seek support from the school community in its application.

4.4.4 Formation of Industry Coordinators in the School Community

Industry coordination between the schools and the industries is a competency that calls for extensive skills in public community relations, relationship building, stakeholder communication management, and networking among others. As such, the school will have to be trained in establishing linkages with the industry and its other partners. The identification of industry coordinator/s for each school will critically support the project goal of bridging the competency needs of the industry with the workplace competency development program of the school.

4.4.5 Technology Transfer Program for APEX Sustainability and Institutionalization.

4.4.5.1 Goal of Technology Transfer Program.

APEX technology transfer is the process of transferring the capacity to teach, share and implement the APEX technology and everything therein to the school that adopted APEX. Since the strategic approach of the Department/Ministry of Education and private corporations is to pilot the implementation of APEX in a school or schools either in a regional or provincial level, APEX schools through the Department/Ministry of Education in the project sites should have the capacity to
cascade or replicate APEX in other schools either government of private, converting its gains into broader sustainable economic development.

Successful APEX technology transfer means that the necessary skills, abilities, knowledge, processes, goods and services that include organizational and operational measures are well installed in the school as a functioning system. The APEX technologies start from the very beginning of the project implementation until its post project implementation, but it does not automatically mean that an APEX school could easily or readily cascade their learning and experiences at once to other non-APEX schools in a region or province where it is situated. There are still some gaps in the capacity of teachers, school administrators and education supervisors that should be filled-up and strengthened in order to make the technology transfer process a successful undertaking. Thus, SEAMEO INNOTECH developed a Technology Transfer scheme for APEX schools to address these “capacity gaps” so they could act as trainers and project managers for the transfer and adoption of APEX in many schools as possible.

4.4.5.2 The Technology Transfer Process

The key components of the APEX technology transfer process are broadly based on the skill, knowledge and attitude acquired by teachers, administrators and education supervisors from their actual or “real world” experience on the implementation of APEX. The technology transfer process makes use of these real world experiences of APEX implementers and transforming these experiences into broader and sustainable actions with tangible results using some level of expertise. The process of enhancing knowledge and developing expertise of APEX schools in order to have the capacity to transfer the APEX technology to others forms an integral part of the project and has been a focus of concern during Project Management Team meetings, ocular visits, monitoring and evaluation.

Successful technology transfer process necessitates to put in place structures such as coordination amongst APEX project implementer and beneficiaries as in collaboration between the technology developers and users; provision and installation
of technical resources such as systems manuals and teacher’s guides, links or flow of information and communication; capacity building of teachers, administrators; education supervisors and other key participants in APEX; recognition of academic and technical competencies through national certification; and provision of policies or legal means that would facilitate the replication or cascading of APEX technology to other schools.

Also, an effective mainstreaming/cascading plan is needed to prepare the school heads and teachers and their subject supervisors for the eventual institutionalization of Project APEX in their respective districts. The roll-out plan shall engage the school in a bigger way by assuming more responsibility in managing the APEX schools. SEAMEO INNOTECH’s role focuses on providing quality assurance in the mainstreaming process.

4.5. Engagement of Stakeholders and Development Partners

The experiences of APEX schools reveal the critical role that stakeholders play for the success of the project.

4.5.1 Parents

Parents particularly, are in the best position to motivate their children in their studies and along a career path. They can also provide technical advice moral support and guidance in the implementation of school projects as this impact in their community.

4.5.2 Local Government Units

There are positive indications that the greater the role of local government units in education projects, the greater is the likelihood that project gains will be sustained in the long term. Local government needs to be actively involved in the planning, management and monitoring of local education projects; this is to foster a greater sense of accountability and ownership.
4.5.3 Business and Industry Partners

Business and industry partners, on the other hand, can be seen as the end users of the supply of graduates that the education system produces. Early on at the secondary level, business and industry partners can already be tapped to provide the information on the competency requirements of the industries and be engaged in supporting the technical formation of these students who will eventually enter the workforce.

Business and industry must become a focal point to bring about needed improvements in the scientific and technological literacy of students. In the case of Laguna, this sector played an active role in defining and projecting the current and future academic, technical and employability competency requirements. However, there is a need to deepen this relationship so that industry can show students that they're not being taught mathematics and science in a vacuum; that there is a relationship between what’s learned in the classroom and the workplace. Bringing high school students to manufacturing facilities for tours and discussions with management, skilled technicians, and shirt-sleeve engineers is one way to show that mathematics is alive and well outside the classroom. Business, when we think about it, is the principal "end-user" of education. Therefore, it must become a prime mover in improving secondary education.

4.5.4 Project Sustainability Planning Workshop

The workshop aims to train and assist the school administration in drafting a sustainability plan for the next 5 years. The process of creating a sustainability plan can also strengthen community partners and stakeholders’ buy-in and understanding of the efforts needed to keep the project operating, improving and expanding to other partner schools. The outputs of this workshop are set of propositions to sustain the gains of the project, action initiatives to fully realize the intended project goals and design other possibilities to expand, improve and intensify the level of implementation of APEX in the school and in nearby school-communities.
4.5.5 Project Monitoring and Assessment

This activity will provide information from which meaningful decisions could be made as this impact on the quality of student learning, school competence and allocation of resources. The sponsoring agency has to derive conclusions as to the benefits and opportunity costs of the investment of funds. Project APEX utilizes the Appreciative Inquiry (Ai) as an approach to evaluation where key stakeholders of the project are periodically gathered through focus group discussions to share their experiences about the project and assess the factors that bring about these experiences. Periodic monitoring through school visits which call for class observations, meetings with learning teams and school head, ocular inspections of facilities are also conducted. Monitoring reports from these activities are provided to the major sponsors and decision makers in the Project. By these activities, the project management, implementers and stakeholders are timely and accurately informed of project progress.

The Ai as a research tool also help capture and document best practices in school-community partnerships, education innovations and strategies being adopted by APEX schools, in the hope that these practices could be shared and replicated in other schools, in other parts of the country and in South East Asia.

4.5.6 Project Evaluation

Program-Evaluation will focus on the contribution of the project in improving the performance of high school graduates in the academics as well as in applying their acquired life skills in community either through employment or in the creation of enterprises. Tracking of secondary school graduates may need to form part of the evaluation of the project. An End of Project Evaluation will be conducted to institutionalize the APEX system in schools. Specifically it aims to: (1) generate report on the actual against planned immediate gains of the project; (2) address specific questions of concern on expansion and sustainability; and (3) identify lessons from this project to guide decisions on future interventions of similar nature.
5. Capacity Building through Unbundled Solutions

The implementation of APEX Project based on the experience of SEAMEO INNOTECH has most often dealt on solving the different aspects of educational and instructional delivery needs of public and private schools by implementing a long-term package of solutions to different educational challenges that would improve the overall performance rating of students and the school in general. This set of solutions aims to respond to the varying needs of the school-communities and to address the different gaps between the (i) existing condition of the school including all those involve in implementing and receiving education and (ii) how the school and everyone and everything in it including the community could enhance the overall quality of education in the next years to come in order to achieve better results and higher performance rating for students and graduates.

The APEX long-term solution is composed of sets of innovations (i) from classroom instruction to development of teaching guides for teachers to facilitate higher achievements of learning for students, and (ii) from classroom management for academic and technology and livelihood education teachers to bridging leadership and management competency enhancements for school administrators including the key stakeholders to enhance the overall performance of the school.

However, to reach a greater number of school-beneficiaries, or due to resource constraints on the part of local communities, the Center may unbundled the package of services by limiting the interventions to a discrete component or series of services which the client/sponsor currently needed in the short term but providing the same level of performance and based on standard costs.

5.1 The Unbundled APEX Solution

SEAMEO INNOTECH has seen the need to offer the possibilities of “unbundling” APEX as a flexible technology by implementing only a specific part of APEX as a solution to solve the specific need or requirement of different schools in Asia. This scheme makes the APEX technology more flexible and accessible especially for small private and public schools as in the case of the APEX Semirara Project in the Province of Antique. Using a limited scope agreement, for one year the Applied Academics Program
was implemented in Semirara as an introductory phase to build a strong foundation in applied science and mathematics using contextual teaching and learning and development of pedagogic content mastery.

The unbundling approach allows the school and/or sponsor to stay in control. They decide which package of services is to be performed and the extent or depth to which INNOTECH will perform the services. They decide when to discuss the next step or phase of the project. Unbundling encourages sense of ownership by the school-community. Such an approach would free up valuable school's resource in self-managing the individual components of project APEX

5.2 Quality and Benefits of Unbundled APEX

One of the questions that may arise in implementing an independent component of APEX in solving a specific teaching - learning or management need of a school would be the quality of that component of APEX being implemented. The quality of implementing a distinct APEX component, e.g., Building the Foundations of Applied Academics in terms of character and substance in effect will be more enhanced since the process of implementation or intervention and evaluation is more focused and customized. The duration of implementing a component of APEX could be also made flexible since the time of teachers and school administrators are basically filled-up with teaching preparations, classroom instructions and other related functions. Implementing an unbundled APEX gives the following benefits to schools and project beneficiaries:

- It can be more cost effective since investments and resources for the project may be focused only on what is being implemented by the school;

- Schools or beneficiaries are given more time to assess and evaluate the outcome of the APEX technology after the project implementation or completion since the next component of APEX would be implemented only once the initial requirement of school has been satisfied;
• Project constraints that may arise which have a direct connection and relevance with the achievement of project results for the project component being implemented can be more easily addressed;

• Schools and project beneficiaries can train other teachers and share the acquired APEX technology at a school-wide level before proceeding to another APEX component.

5.3 Limitations of Unbundling Project APEX

The examples of APEX interventions which can be unbundled include Contextual Teaching and Learning, Entrepreneurship, Technology Preparation, and Project APEX Management. However, the key pedagogical disadvantage of providing unbundled APEX is in terms of skill development of high school students because they may not receive the complete basic workplace and entrepreneurship learning experiences that they need to prepare them for college, for work and for life.
PART III  THE PROJECT DELIVERY SYSTEM

1. Project Organization

Broadly, the project organization is a web of relationships that takes on its membership from the project sponsors (local government units, the Department/Ministries of Education); stakeholders and target beneficiaries (parents, students); implementers (school principal, teachers, Ministry/Department of Education) and the Project Management Office from within the SEAMEO INNOTECH, with the Project Steering Committee as the main decision making body. Project administration however, is with the Project Management Office lodged at the Capacity Development Unit (CDU) of the SEAMEO INNOTECH. Project management and administration may be moved however, depending on the organizational directions set forth by SEAMEO INNOTECH management.

1.1 Project Management Office

At the institutional level, the APEX Project Management Office is headed by the Director of SEAMEO INNOTECH. At the level of project administration, this is headed by the APEX Project Manager in collaboration with a pool of project associates and internal and external consultants. The APEX Project Manager reports directly to the Head of CDU who reports to the Deputy Center Director, who in turn reports to the Center Director. The Center Director represents the project to the Project Steering Committee which is composed of Project Sponsors e.g. LGUs, Department/Ministry of Education, among others.

The project management team handles the day-to-day management of project implementation and the conduct of project activities, and ensures the timely delivery of project outputs. It establishes close communication links with other project implementers – Department/Ministry of Education officials, school heads and teachers – and other stakeholders and partners.
The APEX Project Management Team is normally composed of at least one project associate each for training and development, curriculum development, career preparation, and project monitoring and evaluation. The exact roles and responsibilities established for APEX will differ for each project site and for each year of implementation. Factors such as availability of resources, deployment strategy and project team performance all have an effect on the structure of the office.

1.2 Project Steering Committee

The Project Steering Committee is composed of the executives of the project sponsor groups e.g. LGUs, business and industries, Department/Ministries of Education and the APEX Project Management Office head i.e. Center Director. Members could be Congress officials, the Governor (from the sponsoring provincial local government unit), Mayors of municipalities and cities, City/Municipal Administrators or Councilors (as designated by the LGU executives), and/or the Department/Ministry of Education executives. Membership of the Project Steering Committee may vary depending on project site and depending on the agreed terms and conditions with the Project Sponsor.

The Project Steering Committee sets the strategic directions of the project site and ensures that project activities are aligned with the goals of the project and to their expectations as sponsors of the project. The Committee shall also endorse the project to the local government school boards and education committees. It shall also stimulate and assure collaboration across other local government agencies and the businesses and industry to maximize its value as an inter-local government unit network. Finally, it shall seek active participation in monitoring project implementation and coordinate with the project management office to ensure that goals are met according to its standards as project sponsor.
1.3  Project Stakeholder Groups

1.3.1  Project Sponsor

The Project Sponsor may be a public or a private institution that expressed interest in endorsing and/or financing the Project for selected school/s in a given site/s. The Project Sponsor takes on the primary decision on whether or not to continue with the Project. In an education project like Project APEX where most of the partner beneficiaries are public schools, the Department/Ministry of Education is most often the leading organization in advocating and endorsing the project to a project benefactor or financing agency. The financing agency on the other hand maybe the Local Government Unit whose executive in the person of the Provincial Governor, Congressman, or the Mayor of a city or municipality endorses the Project to the Provincial or Municipal Council for public funding.

But it is quite different with the private sector as in the case of APEX Semirara. As the sole project sponsor, the Chief Executive Officer and/or its representative, the Vice President for Administration of the Mining Corporation provides hands-on leadership and takes on the primary decision on the current and future direction of Project APEX implementation in the private school particularly owned and managed by the Corporation.

1.3.2  Partner Beneficiary

The school as Partner Beneficiary is the recipient of the project interventions and as such, expected to manifest the accomplishment of the immediate project objectives. The Partner Beneficiary ensures the application of the Project APEX technology, monitors and evaluates results of its application, and shares these with the Project Management Office. In a sense, the Partner Beneficiary is also a project implementer in that the success or failure of the project intervention is largely dependent on the continued and consistent application of the project interventions.
The project sponsor primarily identifies the partner beneficiaries – school/s along with its members e.g. school head, teachers, and students – given suggested criteria from the Project Management Office. Some of the criteria are: relevance of the project to the needs of the school community, ensured continuity of school leadership, content preparation of teachers, class size, accessibility, presence of post-secondary school, among others. These criteria may change depending on the nature and conditions of the project site.

1.3.3 Project Partner Organization

A Project Partner Organization is any public or private agency, profit or non-profit organization that expresses support and joins in partnership with the Project Sponsor in the implementation of the Project. The Project Partner Organization is identified and its membership formalized by the Project Steering Committee. Project partner organizations may include the Parent-Teacher-Community Associations, other academic or research institutions, NGOs and other community based organizations, cooperatives, business and industries, Chambers of Commerce, other local government agencies e.g. techvoc regulations agencies (e.g., Technical Education and Skills Development Authority), coordinating councils, and other agencies that support the objectives of Project APEX. Assistance from the Project Partner Organization may take the form of expert and technical advice, equipment and supplies support, advocacy, event sponsorship and other forms as may be deemed appropriate.

1.3.4 Project Implementer

The key implementing arm is primarily the Project Management Office that oversees the design, delivery, monitoring and evaluation of project interventions. The project implementer manages the network of stakeholders – project sponsors, partner beneficiaries, and other partners – for effective and efficient delivery of project outputs and activities.
### 1.4. Roles and Expectations of Project Stakeholder Groups

<table>
<thead>
<tr>
<th>Stakeholder Group</th>
<th>Role and Expectations</th>
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<tbody>
<tr>
<td><strong>Project Steering Committee</strong></td>
<td>PROJECT SPONSOR</td>
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<tr>
<td></td>
<td>• Endorse Project APEX to the Provincial and Municipal School Boards or to the CEO/BOD for private business groups/sponsors.</td>
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<td></td>
<td>• Provide overall direction of the project</td>
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<td></td>
<td>• Identify and formalize membership into the project steering committee of project partner organizations</td>
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<td></td>
<td>• Coordinate with the local development council e.g. regional development council and other identified project partner organizations on the development directions for the project site</td>
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<td></td>
<td>• Give the general advice pertaining to the interface between the project and its institutional and wider environment</td>
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<td></td>
<td>• Set the number of steering committee meetings per year</td>
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<td>• Provide time for project consultations</td>
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<td></td>
<td>Establish network alliances with relevant groups</td>
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<tr>
<td><strong>Local Government Units</strong></td>
<td>PROJECT SPONSOR</td>
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<tr>
<td></td>
<td>• Endorse Project APEX to the Provincial and Municipal School Boards</td>
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<td></td>
<td>• Allocate funding for the project</td>
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<td></td>
<td>• Actively participate in the monitoring of project implementation per municipality and school</td>
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<td></td>
<td>• Perform evaluation of the impact of the project on the economic performance of the community</td>
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<td><strong>Department/Ministry of Education</strong></td>
<td>PROJECT SPONSOR</td>
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<td></td>
<td>• Move for the issuance of a DepED/MOE memorandum designating the Regional/District APEX Coordinator</td>
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<td>• Initiate policy reform on the development of relevant curriculum</td>
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<td>• Ensure the APEX technology transfer in the entire school system for program sustainability</td>
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<td></td>
<td>• Provide standards on the implementation of the project</td>
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<td></td>
<td>• Endorse Project APEX to the Local Government Unit and/or Local School Boards</td>
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<td></td>
<td>• Allocate logistics resources for the project</td>
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<td></td>
<td>• Actively participate in the monitoring of project implementation and provide expert advice on the use and integration of APEX technology in the school system</td>
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<td>Stakeholder Group</td>
<td>Role and Expectations</td>
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<tr>
<td><strong>School Administrator</strong></td>
<td>• Perform management and monitoring of project implementation</td>
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<td></td>
<td>• Provide instructional support to trained teachers</td>
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<td></td>
<td>• Establish linkages with the community for support of Applied Academics</td>
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<td></td>
<td>• Mobilize the Learning Teams and Quality Teams</td>
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<td></td>
<td>• Initiate review and update of the Project Management Plan</td>
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<td></td>
<td>• Implement activities outlined in the Project Management Plan</td>
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<td>• Document innovations and processes adopted</td>
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<td><strong>Teachers</strong></td>
<td>• Actively apply the APEX methodology</td>
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<td></td>
<td>• Utilize the APEX learning materials and contribute toward its improvement based on experience and application in the classroom</td>
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<td></td>
<td>• Actively work toward mobilization of the learning teams</td>
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<td>• Actively seek the participation of parents in student development</td>
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<td>• Update oneself on new content, technologies, strategies, and methods on CTL</td>
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<td>• Document innovations derived from the use of the APEX methodology</td>
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<td>• Document project experiences and share these to other stakeholders</td>
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<tr>
<td><strong>Students</strong></td>
<td>• Actively apply the APEX skills learned</td>
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<td></td>
<td>• Participate actively in APEX classes, projects, and activities</td>
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<td></td>
<td>• Participate in project activities e.g. monitoring, evaluation, as necessary</td>
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<td></td>
<td>• Share their experiences on the project activities</td>
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<td></td>
<td>• Give suggestions on improving project activities</td>
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<td></td>
<td>• Document project experiences and share these to other stakeholders</td>
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<tr>
<td><strong>Parent Teacher Community Association</strong></td>
<td><strong>PROJECT PARTNER ORGANIZATION</strong></td>
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<td></td>
<td>• Actively seek participation in school planning</td>
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<td></td>
<td>• Monitor development performance of the school according to the school plan</td>
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<td></td>
<td>• Assist the school managers in sourcing resources for school improvement projects</td>
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<td></td>
<td>• Participate in consultations regarding the APEX Project</td>
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<tr>
<td>Stakeholder Group</td>
<td>Role and Expectations</td>
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</tbody>
</table>
| **Technical and Vocational Education Regulatory Agencies and Training Institutions** | PROJECT PARTNER ORGANIZATION Regulatory Agencies  
- Provide expert advice in the development of relevant curriculum  
- Provide standards for implementation of technical curriculum  
- Accredit the technical competencies of teachers and students  
- Participate in consultative meetings.  
**TVET Training Institutions**  
- Provide expertise on technical and entrepreneurship skills development for teachers  
- Assist in implementing the technical skills training program for teachers  
- Share teaching and learning materials on technical skills preparation training for teachers.  
- Provide technical trainers and competency assessors for the conduct of the competency assessment on identified/priority technical trades/occupations.  
- Provide expert advice in improving the quality of techprep program implementation in APEX schools. |
| **Business and Industries** | PROJECT PARTNER ORGANIZATION  
- Provide expert advice on current employment trends in the industry  
- Provide the school with industry competency standards  
- Participate in the school planning sessions of the school  
- Assist the school in defining the required skills development tools  
- Assist the school managers in sourcing additional resources for school improvement projects  
- Assist the Department/Ministry of Education in identifying the competency requirements for curricular innovation |
| **Academic Institutions** |  
- Provide expert advice in the development of relevant curriculum  
- Provide training on continuing professional development of teachers on pedagogic content knowledge to enhance content mastery in science and mathematics  
- Assist in coaching and mentoring to improve the performance of teachers in science and mathematics  
- Assist in monitoring the performance of teachers |
**Stakeholder Group**

**Role and Expectations**

**Project Management Office / SEAMEO INNOTECH**

- Create a project management office for the administration of the project
- Provide technical assistance in the implementation of the project
- Manage the linkages between and among the project implementers and stakeholders and partners
- Monitor the project implementation in all the project sites and provide feedback to key stakeholders
- Conduct baseline studies and other assessments relevant for the project
- Design and implement a technology transfer program for the Department/Ministry of Education

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2. **PROJECT MANAGEMENT PROCESS**

2.1 **Contracting and Implementation Process**

The project management process of APEX is patterned after the standard project cycle management process and involves the following processes:

2.1.1 **Project Request**

SEAMEO INNOTECH receives the request from a potential project sponsor. The request could start with an informal notice e.g. thru a phone call, e-mail, SMS, etc. after which a formal letter of request has to be received by SEAMEO INNOTECH thru a letter addressed to the Center Director.

2.1.2 **Project Concept Note**

Upon receipt of the informal notice and/or the formal request, the project management office designated by the Center Director may already develop a concept note. At this point, consultations with the project sponsor will already be undertaken to generate inputs in tailoring the project to the specific requirements.
of the proposed project site. A draft project budget proposal may already be included in the concept note for initial submission to the client/sponsor.

2.1.3 Project Initiation Workshop

Once the concept note has been accepted by the client/sponsor, a Project Initiation Workshop participated in by the Project Sponsors is conducted to review and firm-up the objectives, deliverables, time frame, coverage and selection of project schools. Stakeholder expectations are also leveled out during this workshop including other community requirements. The main outputs of this initiation workshop are the key deliverables and expected outcomes of the project, including the roles and expectations of the stakeholders. The cost parameters are also assessed at this stage and a budget proposal may already be prepared for inclusion in the project proposal.

2.1.4 Preparation of Project Proposal and Draft Memorandum of Agreement (MOA)

Based on the results of the consultation and project initiation workshop with the key stakeholders and participating partner institutions, a full-blown project proposal will be drafted. Depending on the extent and depth of consultations, a draft memorandum of agreement between SEAMEO INNOTECH and the project sponsor may already be prepared as well. The completed draft project proposal and the draft Memorandum of Agreement are then submitted by SEAMEO INNOTECH to the project sponsor for evaluation.

2.1.5 Revision of Draft Project Proposal and MOA

Should the project sponsor desire to include other items or activities, the proposal and/or MOA are revised to suit the requirements and these are then resubmitted to the project sponsor for re-evaluation.
2.1.6 Finalization of the Project Proposal and MOA

Should the proposal meet the requirements and standards of the project sponsor, the draft proposal and MOA are then finalized and signed by SEAMEO INNOTECH and the project sponsor. It is at this point that the members of the Project Steering Committee are identified.

2.1.7 Preparation of Project Implementation Plan

Once the MOA is signed, a project implementation plan (PIP) will already be developed that will detail the activities to be undertaken on specific dates and the corresponding outputs/deliverables. This PIP is provided to the Project Steering Committee for their comment and approval.

2.1.8 Implementation and Monitoring of the Project

When the PIP is established, the activities for the project are then executed as planned by the Project Management Office. Monitoring of these activities is regularly undertaken and feedback is given to project sponsors and stakeholders thru the Project Steering Committee meetings, school visits and consultations.

2.1.9 Submission of Project Monitoring and Completion Reports

Reports are regularly submitted to the Project Steering Committee and to other concerned project stakeholders. End-of-task reports are prepared at the end of each activity and furnished to project sponsors should these be requested, and a summative report is also prepared and submitted on specific dates to the Project Steering Committee as indicated in the terms of agreement between SEAMEO INNOTECH and the project sponsor. At the end of the project life, a completion report is submitted to the project sponsor along with the end-of-project evaluation report.
2.2 Funds Management

The Project Fund is primarily sourced by the Project Sponsor and remitted to SEAMEO INNOTECH on agreed schedule as documented in the Memorandum of Agreement. This fund shall be managed and administered by the Finance Office of SEAMEO INNOTECH. Disbursements shall be based on the duly approved work and financial plan and within the limits prescribed therein. Each disbursement shall be supported by official receipt, properly approved and received disbursement voucher, or any proof or document to support the expenses incurred.

The Finance Office of SEAMEO INNOTECH shall undertake the accounting of all expenses by the Project Management Office.

3. PROJECT MONITORING AND EVALUATION

The approach to project monitoring and evaluation has slowly evolved over the years yet the themes have remained fairly stable. Regardless of the evaluation strategy taken, monitoring and evaluation of projects and other development efforts in general, provides government officials, development managers and civil society with better means of learning from past experience, improving service delivery, planning and allocating resources and demonstrating results as part of accountability to stakeholders (The World Bank, 2004).

3.1 Monitoring and Evaluation Objectives

3.1.1 Provide Information for Management Decisions

Project APEX, whether sponsored thru public e.g. taxes or private funds, is expected by default to provide information from which meaningful decisions could be made as these impact on allocation of limited resources. The Project Sponsor has to derive conclusions as to the benefits and opportunity costs of the investment of funds.
3.1.2 Contribute to Learning, Improvement and Innovation-Focused Processes

Project APEX, being an innovation, carries with it the inherent expectation to show marked improvements in the delivery of quality secondary education. Essentially, the project has to be able to demonstrate the contributions it promises to deliver. It has to be able to generate significantly positive results to inform policy review and development particularly on curriculum development and assessment. Evaluation then has to be able to feed into a process that allows for continuous learning, improvement, and innovation-focused actions.

3.1.3 Involve Stakeholders in the Monitoring and Evaluation Process

With Project APEX, the secondary school takes the development framework of the community as the context for building workplace and entrepreneurial competencies of its younger members. The school could thus be envisioned as a laboratory where the future socio-economic builders of the community are formed. It should be able to build a learning culture that empowers students to take more responsibility for their future and develop strong linkages with business, industries and the wider community. Hence, the project has to be able to provide active involvement in the decision-making of relevant stakeholders as it impacts on the current and future choices of the community and its members.

3.1.4 Strengthen the capacity of the Department/Ministry of Education to mainstream and expand the implementation of Project APEX through technology transfer.

To ensure that the APEX technology and innovations in teaching and learning are accessible to a wider range of students, the APEX trained teachers, school heads and supervisors should take the lead in the expansion of APEX to other schools. In this sense, the Project should be able to build the capacity of the Department/Ministry of Education in transferring the technology to other secondary schools through sharing of skills, knowledge and technologies in
applied academics using contextual teaching and learning, entrepreneurship and technology education and training.

The Project has to able to create a sustainable mechanism for APEX implementation by designing a Technology Transfer Program for the APEX trainers and supervisors. Its success though, would likely depend on the continuous support of the community, local government and the private sector. The Schools Administrators and Supervisors will have the important role of maintaining meaningful partnership with all key stakeholders to provide support for technology transfer.

Given these objectives, the primary approach to project monitoring and evaluation of Project APEX is the Appreciative Inquiry (Ai) framework, a strength-based approach to monitoring and evaluation. Compared to the problem-focused approach of finding out what is wrong and fixing it, the appreciative inquiry approach focuses on what’s right, positive, and possible.

The differences between the two approaches can be summarized in this table*

<table>
<thead>
<tr>
<th>Problem Solving Approach</th>
<th>Appreciative Inquiry (AI) Approach</th>
</tr>
</thead>
<tbody>
<tr>
<td>“Felt Need” – Identification of problem</td>
<td>Appreciating and valuing the best of “What is”</td>
</tr>
<tr>
<td>Analysis of Causes</td>
<td>Envisioning “What might be”</td>
</tr>
<tr>
<td>Analysis of possible solutions</td>
<td>Dialoguing “What should be”</td>
</tr>
<tr>
<td>Action Planning</td>
<td>Innovating “What will be”</td>
</tr>
<tr>
<td>Assumes: Organization is a problem to be solved.</td>
<td>Assumes: Organization is a mystery to be embraced.</td>
</tr>
<tr>
<td>What is in the way of what you want?</td>
<td>What do you want to create?</td>
</tr>
</tbody>
</table>

*Gina Hinrichs, Ai in Education, 2006
### Monitoring and Evaluation Methodology

<table>
<thead>
<tr>
<th>Evaluation Area</th>
<th>Indicators</th>
<th>Data Gathering Tool / Method</th>
<th>Evaluation Data Source</th>
<th>Schedule of Evaluation</th>
<th>Target Respondent</th>
</tr>
</thead>
</table>
| Increased workplace / entrepreneurial competency of students | • Greater appreciation of science, math and technology & livelihood education  
• Higher achievement scores in science, math and technology and livelihood education  
• Students with certifiable skills  
• Improved self-confidence and interest in learning  
• Awareness of career options  
• Higher attendance rate  
• Greater classroom participation  
• Higher completion rate  
• Higher Cohort Survival Rate | ▪ Change in Mean Percentage Scores in science and math  
▪ Student interview  
▪ Teacher interview  
▪ National Certificate or Certificate of Competency on Technical Trades | ▪ Interview documentation  
▪ National, Regional and Division Achievement Tests  
▪ National Career Assessment Examination  
▪ Technical Competency Assessment | • Annual  
• Quarterly | • Students  
• Teachers |
| Improved teaching skills | Trainings on Contextual Teaching & Learning and Career Preparation  
• Teachers trained on CTL and/or Career Prep trainings  
• Teachers applied the CTL approach (Evaluation Sheet attached)  
Coaching Sessions on CTL  
• Teachers completed coaching sessions  
• Motivated to seek and contribute learning  
• Prepared/modified lesson plan using CTL approach  
• Best practices documented | ▪ CTL Training evaluation  
▪ Classroom observation  
▪ Teacher / Principal Interviews  
▪ Coaching sessions evaluation | ▪ End-of-Task Report  
▪ Observation checklists  
▪ Survey results  
▪ Coaching session documentation | • Quarterly  
▪ End of each training / enhancement conduct  
▪ Quarterly | • School Heads/ Principals  
• Teachers  
• Students  
• Teachers  
• Department Heads |
<table>
<thead>
<tr>
<th>Evaluation Area</th>
<th>Indicators</th>
<th>Data Gathering Tool / Method</th>
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<th>Schedule of Evaluation</th>
<th>Target Respondent</th>
</tr>
</thead>
</table>
| Enhancement Sessions on CTL          | • Teachers completed enhancement sessions  
• Motivated to seeks and contribute learning  
• Prepared/modified lesson plan using CTL approach  
• Best practices are documented                                                                                                           | • Enhancement session evaluation                                                             | • Enhancement session documentation                                                  | • Quarterly             | • Teachers  
• Principals |
| Teacher Guides                       | • Aligned with Revised Basic Education curriculum  
• Enhanced content and improved instruction  
• Facilitated work of the teacher  
• Facilitated the development of higher-order thinking skills of students                                                                 | • TG Evaluation Survey  
• Teacher interview                                                                               | • Survey results  
• Interview documentation                                                               | • Quarterly             | • Teachers  
• Principals |
| Learning Team                        | • Had regular membership  
• With plotted schedule in the school calendar of activities  
• Had documentation of the team’s innovations, sessions and agreements  
• Teachers attended the learning team sessions  
• Had a plan of action for addressing teacher learning and support needs                | • School Head interview  
• Teacher interview / Focus group discussion  
• Secondary data review                                                                                                                   | • Interview documentation  
• Learning team session documentation                                                     | • Quarterly             | • Teachers  
• Principals |
<table>
<thead>
<tr>
<th>Evaluation Area</th>
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<th>Schedule of Evaluation</th>
<th>Target Respondent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Built School’s Capacity to Sustain Program</td>
<td>• School served as resource for the community</td>
<td>▪ Mid-Project Review</td>
<td>▪ Evaluation Studies</td>
<td>▪ Mid-project implementation</td>
<td>• School principals</td>
</tr>
<tr>
<td></td>
<td>• School could identify and mobilize resources</td>
<td>▪ End-of-Project Evaluation</td>
<td>▪ Interviews – School principal, teachers, students, PTCA, local government, Department or Ministry of Education</td>
<td>▪ End-of- project year</td>
<td>• Teachers</td>
</tr>
<tr>
<td></td>
<td>• School could continue implementing project objectives beyond project life</td>
<td>▪ Secondary data review</td>
<td></td>
<td></td>
<td>• Students</td>
</tr>
<tr>
<td></td>
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<td></td>
<td></td>
<td></td>
<td>• PTCA/PTA</td>
</tr>
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<td></td>
<td></td>
<td></td>
<td>• Local Gov’t.</td>
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<td></td>
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<td></td>
<td>• Dept’/or Ministry of Education in all levels</td>
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</table>

Improved competencies of school principals

School Principals
• Trained on project management training
• Implemented a project management plan
• Tracked a plan of action on instructional supervision, among others
• Initiated strategies to support APEX implementation

Project Management Plan
• Had school’s long term and short-term goal and targets
• Had a clear plan of action
• Had mechanisms for monitoring and evaluating progress
• Had a sustainability plan

<table>
<thead>
<tr>
<th></th>
<th></th>
<th>Data Gathering Tool / Method</th>
<th>Evaluation Data Source</th>
<th>Schedule of Evaluation</th>
<th>Target Respondent</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>▪ Pre-implementation</td>
<td>▪ Evaluation Studies</td>
<td>▪ Quarterly</td>
<td>• Dept’/or Ministry of Education in all levels</td>
</tr>
<tr>
<td></td>
<td></td>
<td>▪ Quarterly</td>
<td>▪ Interviews – School principal, teachers, students, PTCA, local government, Department or Ministry of Education</td>
<td></td>
<td>• Local government</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• School Principal</td>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td>• Teachers</td>
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<td></td>
<td></td>
<td></td>
<td>• School principal</td>
</tr>
<tr>
<td>Evaluation Area</td>
<td>Indicators</td>
<td>Data Gathering Tool / Method</td>
<td>Evaluation Data Source</td>
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<td>Target Respondent</td>
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</tr>
<tr>
<td><strong>School maintains quality</strong></td>
<td>5S Training • School head, teachers and students are trained on 5S • Quality teams are formed • 5S practice observed and applied by everyone in the school</td>
<td>▪ School visit ▪ Secondary data review ▪ School head / teacher/student interview</td>
<td>▪ End-of-visit/task report ▪ Interview documentation ▪ Quality audit report</td>
<td>Quarterly</td>
<td>▪ Principal ▪ Teachers ▪ Students ▪ Parents</td>
</tr>
<tr>
<td><strong>Quality Management</strong></td>
<td>• Quality management goals defined • Had clear plan of action • Had a monitoring and evaluation plan • Had a sustainability plan • Included plan for stakeholder participation</td>
<td>▪ School visit ▪ Secondary data review ▪ School head / teacher/student interview</td>
<td>▪ End-of-visit/task report ▪ Interview documentation ▪ Quality audit report</td>
<td>Quarterly</td>
<td>▪ Principal ▪ Teachers ▪ Students ▪ Parents</td>
</tr>
<tr>
<td><strong>Engaged relevant stakeholders</strong></td>
<td>• Collaboration with business and industries maintained and enriched • Partners are committed to support the development plan of the school • Partners advocate Applied Academics</td>
<td>▪ Mid-Project Review ▪ End-of-Project Review</td>
<td>▪ Evaluation Studies ▪ Interviews ▪ Secondary data review</td>
<td>Mid-project implementation year ▪ End-of-Project</td>
<td>▪ Schools ▪ PTCA ▪ Dep’t/or Ministry of Education in all levels ▪ Local government ▪ Business, Industry partners</td>
</tr>
<tr>
<td><strong>Functional relationships are established</strong></td>
<td>Study Tours/Missions for Education Officials and local government executives • Resolutions formulated • Policy initiatives undertaken</td>
<td>▪ Secondary data review ▪ Project Steering Committee (PSC) Meetings</td>
<td>▪ PSC Meetings documentation ▪ Resolutions</td>
<td>Bi-annual</td>
<td>▪ PSC members ▪ School heads ▪ Teachers</td>
</tr>
<tr>
<td>Evaluation Area</td>
<td>Indicators</td>
<td>Data Gathering Tool / Method</td>
<td>Evaluation Data Source</td>
<td>Schedule of Evaluation</td>
<td>Target Respondent</td>
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<td>---------------------------------------------------------------------------------------------</td>
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<td>------------------------</td>
<td>---------------------------------</td>
</tr>
</tbody>
</table>
| Consultations with Business / Industry| • Potential partners identified  
• Agreements formed and implemented                                          | • Secondary data review  
• School head interview                                                                   | • MOAs  
• Interview documentation                                                  | • Annual                             | • School Head                  |
| Consultations with other Partners     | • Agreements formed and implemented                                         | • Secondary data review  
• School head interview  
• LGU/PTCA interviews                                                          | • MOAs  
• Interview documentation                                                  | • Annual                             | • School Head  
• PTCA  
• Local Government               |
3.3 Project Monitoring and Evaluation Roles

<table>
<thead>
<tr>
<th>UNIT</th>
<th>Descriptive Roles</th>
</tr>
</thead>
</table>
| Project Steering Committee                     | • Set the general directions of the project  
• Provide feedback on progress reports  
• Actively participate in the monitoring of project implementation in the project sites  
• Act as a mechanism to disseminate project learning to a wider audience |
| Local Government Units                          | • Provide time for project consultations  
• Attend the project steering committee meeting  
• Assist the Project Management Office (PMO) in conducting monitoring and evaluation visits to the school/s |
| Department/Ministry of Education (Region/Division Levels) | • Define with the PMO the evaluation criteria and performance indicators  
• Assist the school heads in implementing the APEX activities  
• Provide expert advice on improving teacher performance on CTL  
• Assist the schools in the conduct of monitoring and evaluation visits / activities  
• Document best practices  
• Design mechanism for disseminating project learning to the academic community through a technology transfer program.  
• Lead in APEX mainstreaming in the school system and in APEX expansion to other schools. |
| School Head                                     | • Define the goals of the school on APEX  
• Spearhead the monitoring and evaluation in the school  
• Document performance outcomes  
• Track utilization of teacher’s guides  
• Document and share the APEX management experiences with other school heads |
| Teachers                                        | • Update the personal development plan  
• Track student progress along the APEX competencies  
• Maintain records of student progress  
• Evaluate usefulness of teachers’ guides  
• Document and share with co-teachers, the innovations and modifications done in using the APEX technology |
<table>
<thead>
<tr>
<th>UNIT</th>
<th>Descriptive Roles</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students</td>
<td>• Document lessons which had the most impact on them&lt;br&gt;• Share their learning experiences with the Project</td>
</tr>
<tr>
<td>Parents, Teachers, Community Association</td>
<td>• Actively participate in monitoring and evaluation activities of the Department/Ministry of Education in the Region, Division, School or Project Management Office&lt;br&gt;• Actively seek opportunities to get involved in their children’s education.</td>
</tr>
<tr>
<td>APEX Team</td>
<td>• Initiate the Appreciative Inquiry (Ai) process for monitoring and evaluation&lt;br&gt;• Define the progress and performance indicators&lt;br&gt;• Conduct school monitoring visits&lt;br&gt;• Conduct validation interviews with teachers, students, school head, parents&lt;br&gt;• Prepare progress reports&lt;br&gt;  ▪ Training and Development: teacher development on Contextual Teaching and Learning and student competency development in Science and Mathematics&lt;br&gt;  ▪ Curriculum Development: review of Teacher's Guides&lt;br&gt;  ▪ Career Preparation: teacher and student competency development on Techno Prep and Entrepreneurship&lt;br&gt;  ▪ Monitoring and Evaluation: project implementation tracking and outcomes monitoring&lt;br&gt;• Document best practices&lt;br&gt;• Consolidate school monitoring reports&lt;br&gt;• Coordinate with the Region, Division, Schools and local government units on the conduct of monitoring and evaluation activities&lt;br&gt;• Transfer the APEX Technology to Department/Ministry of Education supervisors and master teachers through trainer’s training.</td>
</tr>
</tbody>
</table>
4. **PROJECT COMMUNICATIONS**

Project communication is critical for the success of projects like APEX where project involvement includes multi-stakeholder participation. This project communication plan outlines the types of project information and its mode of distribution to its target audiences. By having this communication plan, the project organization and its stakeholders are expected to have smooth, consistent flow of project information relevant for effective conduct of project implementation.

<table>
<thead>
<tr>
<th>Target Audience/Stakeholder Group</th>
<th>Type of information needed</th>
<th>Communication Process and/or Documentation</th>
<th>Person/s in charge</th>
<th>Frequency/Due date</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Within the SEAMEO INNOTECH</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Center Director and Center management committee</td>
<td>• Status of project deliverables and activities</td>
<td>• Project status and accomplishment report</td>
<td>• Project Manager</td>
<td>As needed</td>
</tr>
<tr>
<td>Project Management Office</td>
<td>• Center directives on project directions and overall strategy</td>
<td>• Memorandum • Project meeting • Minutes of the meeting • Financial Status Report</td>
<td>• Head, Capacity Development Unit • Deputy Center Director (Programs) • Budget Officer, Finance Office</td>
<td>As needed</td>
</tr>
<tr>
<td>Project Manager</td>
<td>• Status of project component deliverables • Status of project activities</td>
<td>• Project meeting • Minutes of the meeting • Monthly Flash Report • End-of-Task Report</td>
<td>• Project Associates</td>
<td>Every 10th of the month / End of activity</td>
</tr>
<tr>
<td><strong>Between Project Management Office and Project Stakeholders</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Project Steering Committee (PSC)</td>
<td>• Project plan of activities • Overall project progress and status • Status of project deliverables</td>
<td>• Project Steering Committee Meeting • Project implementation</td>
<td>Center Director or Designate</td>
<td>As stipulated in Memorandum of Agreement (MOA)</td>
</tr>
<tr>
<td><strong>Target Audience/ Stakeholder Group</strong></td>
<td><strong>Type of information needed</strong></td>
<td><strong>Communication Process and/or Documentation</strong></td>
<td><strong>Person/s in charge</strong></td>
<td><strong>Frequency/ Due date</strong></td>
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</tr>
<tr>
<td></td>
<td>● Project accomplishments</td>
<td>● Project accomplishments plan</td>
<td></td>
<td>and/or as needed</td>
</tr>
<tr>
<td></td>
<td></td>
<td>● Project status and accomplishment presentation</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>● Minutes of the Project Steering Committee (PSC) meeting</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Project Sponsor Executives (e.g. local government and Department/Ministry of Education)</td>
<td>● Project accomplishment</td>
<td>● Special meetings</td>
<td>Center Director or Designate</td>
<td>As agreed in the MOA and/or as needed</td>
</tr>
<tr>
<td></td>
<td>● Status of project deliverables</td>
<td>● Project implementation status report</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>● Status of project activities in the project site (school/s)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Department/Ministry of Education (Regional and/or Division APEX Coordinator/s)</td>
<td>● Schedule of project activities</td>
<td>● Special meetings</td>
<td>Project Manager</td>
<td>Annually, at the end of the year / as needed</td>
</tr>
<tr>
<td></td>
<td>● Performance of teachers and students in the implementation of the project</td>
<td>● Progress report</td>
<td></td>
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</tr>
<tr>
<td></td>
<td>● School performance in the implementation of the project</td>
<td>● Completion report</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>● Schedule of project activities/school visits</td>
<td>● Letter/Memo from the APEX Project Manager</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>● Status of project activities</td>
<td>● End-of-Task Report</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Schools Division Superintendent/s</td>
<td>● Schedule of project activities</td>
<td>● Letter/Memo signed by the Project Manager</td>
<td>Project Manager</td>
<td>At least one (1) month before conduct of activity / visits</td>
</tr>
<tr>
<td>School Head</td>
<td>● Schedule of project activities / school visits</td>
<td>● Special meetings</td>
<td>APEX Division Coordinator/ Project Manager / Project Associates</td>
<td>At least 3 weeks before the project activity / school visit</td>
</tr>
<tr>
<td></td>
<td></td>
<td>● Letter/Memo signed by the Project Manager</td>
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<td></td>
</tr>
<tr>
<td><strong>Target Audience/ Stakeholder Group</strong></td>
<td><strong>Type of information needed</strong></td>
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</tr>
</tbody>
</table>
| Teachers                             | • Skills and techniques for project implementation | • Special meetings / project visit  
• Monitoring/ coaching report | Project Associate/s | Every school visit |
| Students                             | • Skills and techniques for project implementation | • Project visit / focus group discussion  
• Monitoring/ coaching report | Project Associate/s | Every school visit |
| Parents, Parents, Teachers, Community Associations, Non-Government Organizations, other community partners | • School progress on project implementation  
• Objectives, requirements of the project, and support needed by the project | • Project visit / focus group discussion  
• Monitoring report | Project Associate/s | Every school visit |
| Business and industry                | • Objectives, requirements of the project, and support needed by the project | • Consultation / special meetings | Project Manager | Upon implementation of the Career Preparation program |
| Other government agencies e.g. Technical Education and Skills Development Authority | • Objectives, requirements of the project, and support needed by the project | • Consultation / special meetings | Center Director or Project Manager | As indicated in the MOA / As needed |
| Project Management Office            | • School performance on the implementation of the project  
• Teacher and student performance  
• Teacher and student experiences with the project  
• Impressions on the project by stakeholder groups e.g. parents, local government units | • School project status report  
• Focus group discussion  
• Monitoring reports | • APEX Regional/ Division Coordinator  
• School Head  
• Project Associate | • Monthly  
• Every school visit |
4.1 Types of Project Reports

4.1.1 Project Implementation Plan

The Project Implementation Plan details the project activities that will be undertaken by the Project to complete project inputs for the accomplishment of project deliverables/outputs. The milestones are defined in this implementation plan and the timelines when these milestones need to be accomplished. This report is submitted to the Project Sponsor and to other identified stakeholders at project start and/or every start of phase of the project as indicated in the Memorandum of Agreement.

4.1.2 Project Implementation Progress Report

The Project Implementation Progress Report is submitted to the Project Sponsor and to other key stakeholders for their information on the condition of the project in relation to its desired objectives. It also includes a status of the project in relation to targeted timelines.

4.1.3 Project Accomplishment Report

The Project Accomplishment Report outlines the key achievements of the Project in relation to its targeted outputs or deliverables. This Report is submitted to Center Management and to the Project Sponsor according to an agreed time schedule or furnished to other concerned stakeholders as may be requested. The Project Accomplishment Report may define accomplishment given a specified time period or accomplishment from start to date.
4.1.4 Monthly Flash Report

The Monthly Flash Report is prepared by a Project Associate assigned in a project component i.e. training and development, and outlines the progress of targeted activities for the month related to the project component. This Report is submitted to the Project Manager and noted by the Head of the Capacity Development Unit and/or by the Deputy Center Director for Programs of the SEAMEO INNOTECH.

4.1.5 Project Monthly Status Report

The Project Monthly Status Report provides a status of all project activities in all project components. This Report is consolidated from all Monthly Flash Reports.

4.1.6 End-of-Task Report

The End-of-Task Report is prepared at the end of every project activity and provides a full documentation of the project activity from design to actual implementation. It contains the design of the activity, process and photo documentation of the activity, and all administrative documentation for its conduct. The End-of-Task Report is usually prepared by the lead Project Associate in charge of the project component activity.
PART IV. LIST OF APEX SCHOOLS AND PROJECT PARTNERS

1. APEX Schools

1.1 Region IV – A (Laguna)

1.1.1 Aplaya National High School, Santa Rosa City, Laguna

1.1.2 Biñan Secondary School of Applied Academics, Biñan, Laguna

1.1.3 Calamba Bayside National High School, Calamba, Laguna

1.1.4 Pulo National High School, Cabuyao, Laguna

1.1.5 San Pedro Relocation Center National High School, San Pedro, Laguna

1.2 Region VI (Semirara Island, Antique)

1.2.1 Divine Word School of Semirara Island, Inc, Semirara, Caluya, Antique

1.2.2 Semirara National High School, Semirara, Caluya, Antique

1.2.3 Tinogboc National High School, Caluya, Antique

1.3 Region VII (Cebu)

1.3.1 Cansojong National High School, Cansojong, Talisay City

1.3.2 Consolacion National High School, Consolacion, Cebu

1.3.3 Mandaue Comprehensive National High School, Mandaue City, Cebu
1.3.4 Marigondon National High School, Marigondon, Lapu - Lapu City, Cebu

1.3.5 Naga National High School, Naga, Cebu

1.4 Region VIII (Leyte)

1.4.1 Alangalang National High School, Alangalang, Leyte

1.4.2 Baybay National High School, Baybay, Leyte

1.4.3 Dulag National High School, Dulag, Leyte

1.4.4 Kananga National High School, Kananga, Leyte

1.4.5 LIDE Learning Center Inc., Isabel, Leyte

1.4.6 Matlang National High School, Matlang, Leyte

1.4.7 New Ormoc City National High School, Ormoc, Leyte

1.4.8 Tanauan National High School, Tanauan, Leyte

2. Project Partners

2.1 Local Government Units

2.1.1 City Government of Calamba, Laguna

2.1.2 City Government of Lapu - Lapu, Cebu

2.1.3 City Government of Mandaue, Cebu

2.1.4 City Government of Ormoc, Leyte

2.1.5 City Government of Santa Rosa, Laguna

2.1.6 City Government of Talisay, Cebu
2.1.7 Municipal Government of Alangalang, Leyte
2.1.8 Municipal Government of Baybay, Leyte
2.1.9 Municipal Government of Biñan, Laguna
2.1.10 Municipal Government of Cabuyao, Laguna
2.1.11 Municipal Government of Consolacion, Cebu
2.1.12 Municipal Government of Dulag, Leyte
2.1.13 Municipal Government of Isabel, Leyte
2.1.14 Municipal Government of Kananga, Leyte
2.1.15 Municipal Government of Matlang, Leyte
2.1.16 Municipal Government of Naga, Cebu
2.1.17 Municipal Government of San Pedro, Laguna
2.1.18 Municipal Government of Semirara, Antique
2.1.19 Municipal Government of Tanauan, Leyte

2.2. Philippine Department of Education (DepED)

2.2.1 DepED Region IV - A

- DepED District of Biñan
- DepED District of Calamba City
- DepED District of Cabuyao
- DepED District of San Pedro
- DepED District of Santa Rosa City
- DepED Schools Division of Calamba City
- DepED Schools Division of Laguna
- DepED Schools Division of Santa Rosa City
- DepED Office of the Regional Director

2.2.2 DepED Region VI
- DepED Schools Division of Antique
- DepED Office of the Regional Director

2.2.3 DepED Region VII
- DepED Schools Division of Cebu City
- DepED Schools Division of Lapu - Lapu City
- DepED Schools Division of Mandaue City
- DepED Schools Division of Naga City
- DepED Schools Division of Talisay City
- DepED Office of the Regional Director

2.2.4 DepED Region VIII
- DepED Division of Leyte
- DepED Division of Ormoc City
- DepED Office of the Regional Director

2.2.5 NETRC (National Education Testing and Research Center)
2.3. Institutional Partners

2.3.1 Department of Education (DepED) ECOTECH Center, Lahug, Cebu City

2.3.2 Banilad Center for Professional Development (BCPD), Lahug, Cebu City

2.3.3 British Council, Philippines, Pasig City

2.3.4 Center for Industrial Technology and Enterprise (CITE), Talamban, Cebu City

2.3.5 Don Bosco Technology Center (DBTC), Punta Princesa, Cebu City

2.3.6 National Institute of Science and Math Education Development, University of the Philippines (UP-NISMED), Quezon City

2.3.7 Science Education Institute, Department of Science and Technology (SEI-DOST), Taguig City

2.3.8 Semirara Mining Corporation (SMC), Semirara, Caluya, Antique

2.3.9 Technical Education and Skills Development Authority (TESDA) Region VII

2.3.10 West Visayas State University (WVSU), Iloilo City
PART V. FREQUENTLY ASKED QUESTIONS

1. What is APEX?

APEX stands for Applied Academics for Excellence. It is a community-based project that connects secondary schools to the development framework of the community through meaningful collaborations and local education governance. It provides students with basic workplace and entrepreneurship education through applied academics particularly in science and mathematics, which are the prerequisites of technology. APEX exposes students to hands-on applications, interactive peer learning, and exciting activities, thereby strengthening the student’s academic foundation and technical and life preparation skills, the skills necessary to pursue post-secondary education and/or their career of choice.

2. What is the mission of APEX?

APEX was conceptualized to achieve the following goals:

• Develop basic workplace and entrepreneurial competencies of students with strong foundation skills in applied science and mathematics.

• Build strong institutional capacity for program sustainability; and

• Actively engage relevant stakeholders in the community.

3. Why should schools be interested in APEX?

APEX has a lot to offer from which schools and other stakeholders can benefit in the long run. The benefits of implementing the project include the following:

• Students acquire life preparation skills necessary to be productive members of the community.

• APEX enriches student’s learning and development, and ingrain in them civic responsibility early on in life.

• APEX helps transforms the school-community


4. **What is the APEX curriculum? How does it differ from the Basic Education Curriculum?**

Project APEX adopts the regular high school curriculum in Science, Math, and Technology and Livelihood Education (TLE). However, in Project APEX the Basic Education Curriculum is enhanced and enriched by aligning the learning content and teaching strategies to the development goals of the community.

For instance, the specialization in TLE subjects were designed based on the needs of business and industries through a series of consultations to help us identify the jobs that high school graduates could be gainfully employed given the technical preparations required by employers in terms of entry-level competency requirements. Companies were very supportive during said consultations and were offering to share their trainers and facilities for technical skills training in order for the public schools not to spend too much for equipment and facilities.

APEX is a support component of the revised basic education curriculum because it enhances the instructional delivery of academic subjects particularly in science and mathematics.

5. **What are used as learning contexts for the project?**

Academic teaching and learning utilize the workplace, entrepreneurship and the community as learning contexts to enrich student’s learning and development, and ingrain in them civic responsibility early on in life.

6. **Who will work with public high schools on this project?**

SEAMEO INNOTECH in partnership with other training institutions, the government tech-voc regulations agency, non-government organizations will provide technical assistance in building the capacities of public high schools as an applied academics school. However, Department/Ministry of Education needs to solicit the support of the community, local government units and/or private business corporations to provide financial assistance in implementing and sustaining Project APEX.
In particular, the stakeholders could support in building the employability skills of high school graduates, such as provide resources in setting-up a TLE laboratory, computer facilities, workshop for electronics, welding, carpentry and other TLE courses to be offered for the school community.

7. **How much financial support do project sponsors provide?**

The APEX Program in Schools is fully funded by the project sponsors such as Local Government Units, private sector organizations, or other donor organizations. The Department/Ministry of Education has a counterpart through the provision of support services, which are beyond project scope. This includes teaching materials, visual aids, and repair of learning facilities, among others.

The project sponsors have to be deeply convinced that the project is not an unnecessary overhead and a redundant activity but an initiative that squarely contributes to the development and growth of the community.

8. **Does APEX involve working with the local community?**

APEX engages secondary schools with support from their communities. It is founded on partnerships between and among the local government units, the Department of Education, parents, local industries, civic organizations, and the wider community. By engaging the local government and the community in meaningful collaborations, the Project seeks to position the secondary school within the development framework of the community. In the process, it improves the quality of secondary education through local education governance.

9. **How does APEX contribute to community development?**

APEX as a secondary school project gives deep consideration on the development of the environment and the emerging requirements of the immediate community as the larger framework on which an education project is anchored. APEX serves not as the expert on education issues of the community, but rather as a nurturing and enabling facilitator of community learning processes.
10. **What are the other benefits available to the school community?**

The project understands the need for communities to participate in the planning, management, and delivery of meaningful education. It uses the Appreciative Inquiry (Ai) approach in its processes particularly in project monitoring and evaluation to actively involve stakeholders in discussions which gives the opportunity of sustaining the climate for collaborative relationship between the school and the members of the community, e.g., parents, local community, and LGU. In these discussions, stakeholders share their experiences in the project, identify their strengths as a school community, and discover further ways of collaboration for project success. It is hoped as well that by engaging the stakeholders in these processes, a stronger commitment for success of the students in the project among the school and community members would be realized. APEX provides high school students with better life choices as they join the world of work, establish an enterprise of choice, or pursue higher education. Families and communities are actively engaged in the entire learning process and are interlinked and interconnected to rally around the issue of youth success.

11. **Who are the beneficiaries of APEX? How are they selected?**

The school beneficiary is the recipient of the project interventions and as such, expected to manifest the accomplishment of the immediate project objectives. The school ensures the application of the Project APEX technology, monitors and evaluates results of its application, and shares these with the Project Management Office. In a sense, the school is also a project implementer in that the success or failure of the project intervention is largely dependent on the continued and consistent application of the project interventions.

The project sponsor primarily identifies the partner beneficiaries–school/s along with its members, e.g., school heads, teachers, and students–given suggested criteria from the Project Management Office. Some of the criteria are: relevance of the project to the needs of the school community, ensured continuity of school leadership, presence of Technical-Vocational Education and Training (TVET) institutions and accessibility among others. These criteria may vary depending on the nature and conditions of the project site.
12. **What are the major programs offered through APEX?**

There are several major programs offered through APEX. Among these programs are the following:

- **Contextual Teaching and Learning (CTL)** - This approach involves the teaching of solid academic content by means of hands-on real-world applications.

- **Content Enhancement in Science, Mathematics and English** – This involves the development of pedagogical content knowledge of teachers to sharpen their content mastery in the core subjects of applied academics.

- **Enterprise Preparation Program (EntreP)** - Training, coaching and mentoring on, and monitoring of Enterprise Preparation for Technology and Livelihood Education (TLE) Teachers.

- **Technology Preparation Program (TechnoPrep)** - Training, coaching and mentoring on, and monitoring of Technical Preparation for Technology and Livelihood Education (TLE) Teachers.

- **Project Management** - Training on planning, implementation and completion of school-based projects.

13. **What student support is available?**

APEX develops the students’ academic, employability and life skills through technical support and advice on applied academics, entrepreneurship, career guidance and counseling, marketing encounter, etc.

14. **What is the preferred size and scope of an APEX class?**

To make the teaching and learning more manageable, ideally the class size is not more than 50 students per class.
15. What educational resources does APEX represent?

APEX educational resources include Teachers’ Guides in Science, Mathematics, Enterprise Preparation and Technology Preparation. The schools are also provided with APEX manuals on career preparation, school quality management, project management, and community-based project implementation, among others.

16. What is the focus of career preparation?

Career preparation focuses on key technical areas, which are required by the industrial base of the region and its specific provinces, and on entrepreneurial preparation to respond to the demands of the local business environment. The APEX Career Preparation Program prepares students for the world of work by exposing them to various programs on technical and enterprise development. It is an exploration process designed to discover students’ career interests which maybe in line with technical (occupational) skills or basic entrepreneurial skills development.

17. What is the difference between courses offered through the regular techvoc and APEX TechnoPrep courses?

Basically, the technical vocational education specializations of the Department/Ministry of Education are enhanced and patterned after the training regulations of an authorized agency (e.g., Technical Education and Skills Development Authority-TESDA) to ensure the acquisition of certifiable competencies. In the Philippines, these specializations are based on DepED Order No. 48 Series of 2007. The APEX Tech Prep course content and design are also patterned after the training regulation of TESDA due to the acquisition of certifiable competencies, but the course design are anchored on the development needs of the community, including the competencies therein. APEX courses are designed and tailored to the entry-level competency requirement of companies for job employment of high school students.
18. **What are the similarities and differences between TechnoPrep and Technology and Livelihood Education?**

TechnoPrep and TLE are the same in terms of subject delivery and schedule. Both are identified as specializations. TechnoPrep is an improved version of TLE and does not attempt to introduce a new system in the basic education curriculum. In this case, TLE is the title of the subject while TechnoPrep is the content and delivery of TLE.

The main difference of TechnoPrep from TLE is the course structure and content since it follows the entry-level skills requirement of the employment sector and designed in such a way that competencies acquired by high school graduates are certifiable by an authorized regulations agency in techvoc, thus ensuring higher chances for employment. TechnoPrep also builds several job competencies that provide graduates more access and opportunities to be employed in several job positions.

19. **Who advises and counsels students on career prep of APEX?**

The guidance counselors give advice to students on the careers that are relevant to the community. To fully support the students in identifying their career directions, training on career counseling in identified schools are conducted for the guidance counselors.

20. **Where are the TLE classes held and when?**

The workshop facilities of school, business, and industries are used for students’ work-based learning, apprenticeship and/or on-the-job training.

21. **What is the class format of EntreP or TechnoPrep?**

The schedule of EntreP or Techno Prep classes may vary from site to site. The class format should fit to the needs of students and the course design of each technical trade. For APEX Cebu, the EntreP class is 4 hrs a week, say every Friday. TechnoPrep is an improved version of TLE subjects in general high schools. In these schools, TLE has a duration of 50 to 60 minutes four times a week (4 hours) compared to Technical Vocational Education (TVE) high schools which has a duration of 120 minutes (2 hours) daily or 10 hours per week. The ideal daily class
duration for TechnoPrep in order to effectively train students is two (2) hours per meeting or 10 hours per week. This will also depend on the type of technology to be offered in TechnoPrep. For example, if schools are teaching machining operation or carpentry, then it will require at least three (3) hours per meeting due to the time needed to finish an exercise.

22. **How do students enroll in TechnoPrep classes on career preparation?**

Right now, a student does not need to enroll in a TLE class since TLE is part of the Philippine revised basic education curriculum and mandated in all public high schools. In Career Prep, students had to consult a Career Counselor or Career Coordinator before choosing or taking-up a TechnoPrep class. The Career Counselor or Career Coordinator helps students to choose a technology that best fits their level of ability, personality and interest to a future career. At the end, students are the ones who choose what TechnoPrep class to attend to.

23. **Are students required to take up any standardized test before they are admitted?**

No. APEX does not require any standardized testing for admission.

24. **Will out-of-school students be able to attend APEX classes?**

This has not happened yet but is very possible through the Alternative Learning System (ALS) of the Department/Ministry of Education. APEX implements CTL in Science, Mathematics, and entrepreneurship and/or TechnoPrep in TLE at different levels. CTL is a very effective teaching approach if used in ALS because of its active-experiential learning nature. As long as the ALS teachers are trained in CTL, all out-of-school students enrolled in ALS can experience the APEX activities in Science, Mathematics, and TLE. And, upon completion of the prescribed curriculum, ALS students can be able to successfully earn a high school diploma Department/Ministry of Education. The teaching-learning approach in APEX classes is designed to make learning easier especially for slow learners and classes with higher teacher-student ratio that is happening now in most public schools.
25. **What are the learning support mechanisms under APEX?**

Learning teams form the support mechanism under APEX. They focus on teacher learning as a way to address student needs and improve student learning.

26. **What is the structure of the learning team?**

The structure of the learning team is voluntary but could be organized by the school principal. The team is composed of teachers from varied and/or same subject areas. The most important thing is that they are willing to meet regularly at the same time in order to go through the learning team process of sharing educational innovation and learning experiences.

27. **What is the learning team process?**

There are six steps in the learning team process:

1. Reading and reflecting upon new ideas.
2. Shaping the ideas into classroom applications.
3. Crafting the Learning Plan
4. Experimenting, observing, drawing inferences about what does and does not work.
5. Summarizing learning and conclusions to share with team.
6. Meeting to discuss ideas and practices; learn more.

28. **How can a teacher become a certified APEX facilitator?**

At this point, there is no formal certification process for a teacher to become a certified APEX facilitator but SEAMEO INNOTECH may consider the process of developing the accreditation system.

29. **What is the management structure of Project APEX?**

Project APEX forms the Project Steering Committee (PSC) which provides the overall direction of the project. It oversees and directs the program within the larger framework of socio-economic development. In general, the objectives of the PSC include bringing the partners together, engaging new allies, and mobilizing resources. The PSC also provides executive
decisions to the project, and authorizes the project to proceed or change direction as needed. The Project Management Office based in SEAMEO INNOTECH serves as the PSC Secretariat.

30. **Who are the institutional partners of APEX?**

The institutional partners of APEX are the schools (students, parent-teacher associations, etc.), the Department of Education Schools Division Superintendent, the sponsor of the project, the Local Government Units, and SEAMEO INNOTECH (represented by the Center Director and the APEX Project Manager), the Community-College, Teacher Training Institutions and other educational organizations, Technical-Vocational and Education (TVET) institutions, authorized techvoc regulation agencies (e.g. TESDA), Non-Government Organizations, Business and Industries, and other human resource development and training institutions.

31. **How is APEX different from other projects for secondary school?**

APEX aims to improve the job and livelihood prospects of high school graduates by equipping them with a strong academic foundation, and entry-level occupational skills early on in life. It promotes Applied Academics as an approach to learning which focuses on motivating and challenging students to connect what they learn with their actual experiences and with interests them. The project, if sustained, can contribute to long-term economic growth anchored on a highly responsive secondary education by developing future leaders who are equipped with basic workplace and entrepreneurship competencies, positive work values, and civic responsibility.

32. **How are students’ learning assessed for APEX?**

Part of the training on Contextual Teaching and Learning for school administrators and teachers is an in-depth training on the use of authentic assessment tools wherein students’ abilities in “real-world” contexts are measured. The assessment focuses on students’ analytical skills, ability to integrate what they learn, ability to work collaboratively, including written and oral expression skills.
33. **Is Project APEX also appropriate for elementary schools?**

Project APEX is a pedagogic strategy which can be applied to elementary schools because the key principles of APEX are locally adaptable. The APEX technology is learner-centered, utilizes active and experiential learning and adopts the participatory (collaborative/cooperative) approaches to teaching and learning which could make learning more meaningful and enjoyable for primary school children.

34. **How can I get more information about APEX? How can I get a copy of the APEX catalog/brochure?**

The Capability Development Unit (CDU), Programs Office of the SEAMEO INNOTECH can be reached at the following numbers: 632-924-7681 to 84 local 145 or through its website at seameo-innotech.org.