Becoming Enterprising
Technical Guidelines

Compiled by The Asia-Pacific Centre of Educational Innovation for Development (ACEID)

UNESCO PRINCIPAL REGIONAL OFFICE FOR ASIA AND THE PACIFIC
Bangkok, 1994
UNESCO. Principal Regional Office for Asia and the Pacific.  
144 p. (Asia-Pacific Programme of Educational Innovation for Development)

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PREFACE

The Guidelines presented here reflect a non-prescriptive spirit.

They also attempt to generate explorations.

Thereby the Guidelines raise optional directions for possible design action in Enterprise Education. For example, sample Alternative approaches to identifying attributes of, and intended learning outcomes in, Enterprise Education; considerations of several different types of facets of methodological strategies for Enterprise Education, have been referred to.

Designers may wish to consider the Guidelines as facilitating catalysts to enhance the vigor of exploration of the entry of "being enterprising", of "becoming doers", pervasively into the entire scope and sequence of general education, and not merely for "money making".

Nevertheless several foundational strands run through the Guidelines:

1. "Becoming doers" requires learners to be exposed to a wide variety of learning situations, in different subject matter contexts, and over the total period of learning so that, in particular, the affective components associated with refusing to remain passive, merely letting circumstances rule and swamp and overcome, become "second nature".
2. "Becoming doers" requires "doing in real life", and not merely in academic or contrived in classroom situations. This "doing in real life" itself, is a rich source of acquiring proficiencies for "becoming doers", such as social proficiencies, or dealing with crises, that contrived learning situations, however well designed, would be deficient in. This is specially so when the doing is focused upon improving the quality of life of the learner and those in the learner's environment.

3. The proficiencies involved are usable for morally and ethically appropriate purposes. They may also be used, just as effectively, for opposite purposes. The learning designs have to be cast in appropriate moral and ethical frameworks, to ensure that the proficiencies acquired are associated integrally and unambiguously with the accepted and required dimensions of morals, ethics and values.

4. In many countries, several of the proficiencies associated with Enterprise Education have been included already, but usually in separate subject matter areas, and only in the narrow contexts of these subject areas. Critical thinking, problem solving, application of learning are common examples. The perspective of entry into general education in a pervasive and integral manner, is only a further extension of an already initiated movement of quality improvement.
The primary methodological strategies are providing learners opportunities to exercise their initiative, making the learning learner-directed; and converging learning and action in real life.

The primary purpose is the generating of enterprising citizens of the future, and the nurturing of an "enterprising culture", both of which are essential requirements for living in the years beyond 2000.

We would like to acknowledge the receipt of curriculum specifications from Australia, New Zealand, Philippines and Thailand. For our reference collection, we would appreciate receiving curriculum specifications and materials from other countries also.

The Asia-Pacific Centre of Educational Innovation for Development (ACEID), which is an integral part of the UNESCO Principal Regional Office for Asia and the Pacific (UNESCO PROAP), would welcome reactions to the Guidelines.
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In all walks of life, in many life situations, we can't help seeing enterprising people. Their enterprising nature is most sharply visible, embossed on crisis situations. They refuse to remain passive, merely letting circumstances rule, and swamp, and overcome them.

The "enterprising nature" surfaces itself not only in "money making" situations, but also in many other events that have important implications for their life rhythms.

If we observe carefully and sensitively, we can identify a vast array of situations in which very large numbers of human beings, of various ages and in various circumstances, even without any formalized "training", manifest qualities of "being enterprising".

The following garland of stories comes from real life. The stories have not been "manufactured", (although names of persons involved have been changed). The garland, with its pervasive fragrance of "being enterprising", may help stimulate the recognition of many more such people who live amongst us; and of the particular attributes that are manifested by people we identify as being enterprising.
The stories have been drawn from the lives of "ordinary" people, and not from the lives of those who operate at the dizzy heights of the social and economic mountains of countries. All of the persons involved have some attributes of being "disadvantaged", of lacking inherited or other forms of social power or economic clout. All the more, the life crises and problems that they faced were not "small" ones, for them. The problems represented a major turmoil in their lives. Yet the people faced up to these problems positively.

**KANCHI**

Kanchi still practises, in case she forgets, the four letters of the alphabet she learned from the daughter of the rich landlord. She frequently looks for these four letters when any printed materials come her way. Even if she cannot read anything else in these materials, just finding the four letters gives her great joy.

Of course, she would have loved to go to school too, like the children of the rich. But she knew that the very poor could not afford to - certainly not at the expense of house work.

It was fortunate Kanchi learned this house work early. When she married at age 14 years, she had to live in her husband's poor remote mountain village, without anyone to help her - not even her husband, who had to be away for months, labouring in the valleys many days of walking from the village. The nearest neighbour was many steps up the mountain.
A garland of stones

When her baby son was small, she devised a stirrup for him to ride on her back, while she roamed the mountain sides for hours, looking for firewood or herbs, or went down to the stream to fetch water. Kanchi’s stirrup did not have to be tightened periodically, as happened in the case of the traditional cloth-bag baby carrier, and she could use both her hands, and bend as well, quite easily. Others usually searched the mountains for firewood and herbs, at random, trusting to luck. Kanchi always praised the gods aloud, like the others before she started off, and she also had an "area map" in her head, of likely places to find firewood and herbs, and searched the mountain sides systematically, one area each day. Her monthly collection of firewood and herbs was frequently more that of her neighbours.

But now her son was more than two winters old. His weight, and his restless struggles made her fall and injure herself several times. It was dangerous for him and for her, to carry him on her back anymore. He could not walk the long distances she went. There was none at home to care for him.

Kanchi thought of this for several nights, and decided to do what other women did in the village - tie up the child securely to the central pillar of the house, with enough slack on the rope for him to move about ten hand-spans. She would also leave a shallow pot of water nearby for him to drink.

For several days, she was very apprehensive, and conscience-stricken about confining the child like a dog. On some days, Kanchi rushed back home in panic, with only a little firewood collected, thinking that the child may have strangled
himself with the rope. But each time her fears were unjustified. He had cried a great deal, and had urine and excreta on him and on the floor, but he was safe. Gradually, her spells of panic disappeared. The child seemed to cry less, too, when she was away, specially after she had left a tin with stones and some wooden spoons, for the child to play with.

A month later, Kanchi was plunged into terror. Maya, her 16 year-old neighbour, carrying her own baby daughter, ran up the mountain to her, panting the dreadful news that the son was badly injured. Kanchi dropped the firewood she had collected, and screaming all the way for help from the gods, raced back home. Seeing the son in a pool of blood, she fainted. The loss of a son would never be forgiven by her husband - not like losing a daughter. If her husband chased her away, she would become a non-person, despised by him and his people, and unwanted by even her own father and mother. Another husband would be impossible.

She recovered from her faint, only when her neighbour threw cold water on her face. The faint had pushed her terror beyond feeling. She examined her son and he was not dead only badly cut on the thigh, with a knife. The cut was long, but not deep. Obviously, the gods had heard her scream and seen her sincere action, and had therefore lessened the crisis. Even the bleeding had almost stopped, and the son was not crying. The gods had caused him, too, to faint so he won't feel the pain.

With her neighbour's help, she washed away the blood, and bandaged the wound with crushed herbs wrapped in a
piece of cloth she tore from her only other skirt cloth, which she had washed the day before. All the time, she loudly thanked the gods for their graceful help.

The crisis event had certainly shown that her precious son was developing fast. It was his unexpectedly advanced finger dexterity that had permitted him to untie the knots on the rope and free himself. The gods had to be thanked for this too.

Her fault, it was, that she had not put out of reach such dangerous items as the knife. It made her locate other possible items of danger within reach of her son, and place them away safely.

Then a further bout of panic overtook Kanchi. What would she do tomorrow? No firewood! No water! What would she do from now on about her son? People who have known the fire-embers of hunger blistering their stomachs, can bear up many misfortunes. But this was survival - hers and, more importantly, her son's. All night she pondered various possibilities: mounting him on her back with his legs tied in front of her; carrying him on her shoulders; securing him to the house pole, but returning home every half hour to see if he was alright; and so on. None of them was adequate. They all had serious shortcomings.

Nor was her son's accident an isolated event in the village. Several other small children, similarly left alone, had to suffer serious injuries, and some even death. Yet almost all mothers had to leave home for tasks essential for survival. How many mothers? Eight of them, not including herself. All
of them placed their children under risk at the same time, for the same period, each day.

Suppose she remained behind to look after one other child too, would the mother of the child help her with firewood gathering and fetching water? The mother may do it once or twice, but not everyday. What if the mothers took turns to look after a few children in addition to their own? The additional foraging tasks would be distributed, and would be less onerous. But would the mothers entrust their children to others? Trusting another mother or leaving the child unattended! So, long into the night, Kanchi made up various alternatives, evaluated them, rejected them, and finally returned to the idea of the "mothers' co-operative".

And then her doubts raised themselves up again. She would have to speak to the other mothers! Kanchi had never done anything like this before. But the sight of the wound on her son's leg squashed her doubts. For the rest of the darkness hours, she planned carefully what she would say to the other mothers; whom to begin with; to how many. She decided to start with those four young mothers who were about her own age, in their teens. They, like her, had less experience of life than the older ones. They could have greater empathy with the perplexing complexities faced by her. A sharp, joyful, pain of achievement seeped through her at her recognition of her decision, and that she will act to solve her problem and that of others as soon as the Sun God blessed the East.

With a clear, loud prayer of appeal, a washed excited face, well-combed hair, and carrying her still-sleeping son,
Kanchi set out to the four homes of the teen-age mothers. She entered the compound of the first, only after placing her sleeping son on the ground outside the fence, and then with a soft, melodious chant of praise to the gods. It was important that the awakened did not see inauspicious, distressful sights, first thing in the morning!

Not only did Maya, her neighbour, agree with her about her idea, but she said she would accompany Kanchi to the next house, and to all the other three homes.

From this humble and tentative beginning, today there is an active child care centre in this village, entirely run by a rotating panel of mothers. The initiatory actions by Kanchi and the other young mothers attracted outside experts who trained the mothers in child care practices.

More so, the little children are cared for in safety. The mothers still continue their strenuous tasks essential for survival in that harsh, poverty-stricken environment, and all give grateful praise to the gods everyday, for without the help of the gods nothing would have succeeded.

**BUA**

Mr. Bua had long observed that selling noodles to passing consumers on a busy road, particularly taxi drivers, was a promising business that needed relatively little capital investment. He talked to several noodle sellers. None would volunteer all the necessary information he needed to get
started. But collectively, from several such sellers, he was able to put together a package of information on the various operations involved, their attributes, and their resource requirements. The evidence suggested chicken noodle soup to be an optimum item to start.

His wife losing her employment acted as the final trigger to motivate him to initiate the self-employment action. His capital reserve was insufficient for the initial investment. With two loans from two sources, he was able to have enough capital for a cart, utensils, gas for cooking, and money for buying the raw materials. He started small, with only 3 chickens, and found that it was difficult to break even on the income-expenditure balance. But he persisted, with further search for information on specific details, like improving the taste to match his main clients, the taxi drivers who stop for a quick and cheap meal. His friends provided him both advice and encouragement. Within six months, he was making a handsome profit.

The business was progressing very well until he started having rivals who had similar ideas to his. His profit is less now, though it is still reasonable. He has curtailed expenses by himself, his friends and his wife sharing the tasks, (and sharing in the profit). He had reduced chicken meat in making the soup stock, and substituted it with the much cheaper chicken bones and feet, with no adverse effect on taste. He has improved the appearance of the served portion with pieces of (cheap) green vegetables. This also improves the nutrition value of the soup. If he can make the noodles and the additional "extras" put into the noodle soup himself, he can cut
down costs more. He can also consider producing soup to meet the
tastes of possible customers other than taxi drivers. He is now investi-
gating these possibilities, especially where to learn to make noodles
and the "extras" put into the noodle soup.

FAREEDA

During the Gulf war, Fareeda wanted to send a "Happy
Anniversary" telegram to her husband who was in the army. But war-
time restrictions in her country prevented the transmission of
non-essential messages. So her telegram was refused She returned later
with another telegram, which was sent without question. It read
"ANXIOUS TO CONTINUE PARTNERSHIP STOP DESIRE TO ENLARGE FIRM EARLIEST
CONVENIENCE".

MERLY

By Grade 2 Merly had quite a tom-boy reputation for climbing
tamarind and santol trees. It was unusual that she regularly picked
fruits, but did not eat them. She would sell everything in the market,
together with the snails and baby crabs she could occasionally harvest
from nearby rice fields.

Her mother died when she was in Grade 5. Recounting her
mother's depression and emotional aggravation, she blames her father's
infidelity as the cause of her mother's illfate. The father, a Village
Headman, remarried and bore another four children.
Merly Duyag is the third of six in her father's first family. She grew up and stayed for fifteen years in her birthplace. After finishing her elementary education, she transferred to a town where her eldest sister married and settled. Her sister gave her first market vending job in the metropolis.

Merly came from a family of entrepreneurs. Her eldest sister currently runs a beauty parlour, a canteen, a store and a "pool" game area. The second in the family has a fruit and vegetable stand. The fourth, the sister whom Merly is very close to, has a beauty parlour as well. The fifth has a piggery, while the youngest opted to be an elementary school teacher.

The Duyag children grew up as a working team, sharing house and farm chores. Burdened with responsibilities, the children learned the value of discipline through prioritising. Merly looked after the needs of her three other young sisters and a brother when their mother died. On weekends, she helped in their farm. At this tender age, Merly was able to juggle her studies and duties. Through all these efforts, she adapted, and to this day, treasures, the estimable results of time management. She easily developed commitment to work.

When Merly reached high school, she had no other choice but to finance her own education. She earned her diploma by toiling through the only job she has been proficient in - selling. She would wake up very early in the morning to peddle fresh fish in the market. By mid-morning, she would finish up her merchandise and proceeded to her class. As a high school student, her dream was to own and manage her business. She much preferred being her own boss than
working for another. She learned the business of selling through a relative's glassware enterprise, where she worked as a sales lady.

Two years after graduation from high school, she married Lameck Bahian, a tinsmith, and raised five children. As the family grew bigger, the couple expanded the house, and rented out the five additional rooms. The room-rental has generated a monthly P300 per room for the past three years.

But for Merly, it was not enough. She would still sell fruits and vegetables in the same market she used to sell in when she was younger.

To attain her goal of establishing a business, she was aware of the need to learn a skill. She grew particularly fond of a tenant who was making ready-to-wear garments. She admired the excitement of business living. In a few months, she enrolled in a seven-month dress-making course at the Manpower Training Center. But she wanted to learn more about the garment industry. She yearned to get all the information she needed to start her own garment business. To be able to do this, she thought of working in a garment factory. For one whole year, Merly learned all the secrets of the manufacturing process. She took patterns of different sizes of pants and dresses to her home to study further.

However, her business path took a different turn. While attending a church service, Merly was given another opportunity. The church sponsored free training in slipper-making. Without hesitation, she attended the programme. Soon Merly's enthusiasm to start her own slipper-making
enterprise was immense. Her first task was to look for capital. She approached a friend of her husband and asked if he could be a business partner. Believing in Merly's business acumen, the friend bought a second-hand sewing machine and gave an initial working capital of P500. Within a week, she was able to produce 60 pairs of slippers garnering gross earnings of P1,000. Part of the earnings was used to pay back the friend, while the balance was used as her operating capital.

She started with the design she learned from the programme. As customers asked for variety, she designed two more pairs. It was at this time she was able to buy another machine from her savings from the room-rental income. Merly hired her neighbour as a seamstress to assist her, since production had increased enormously. The hired help would take home her job orders.

After six months, Merly wanted to quit partnership with her husband's friend. She estimated that the P250-300 profit shared with the friend could very well be her own. She told her friend that she could not handle the production, and that she was taking a rest from the business. Merly returned the sewing machine to the friend. A few months later, however, she resumed her production. It did not worry her that she had lied to the person who had helped her to get started. That was business!

Her sales grew by word of mouth. She distributed her goods to the market in the city, and to walk-in customers.

As the orders were growing continuously, Merly needed to maintain her seamstress. At the same time, she ensured that
her family became part of the business, by teaching them the value of entrepreneurship. After school, the children drew the patterns. From work, her husband came home early to cut the soles. Lameck was very supportive of her endeavour. He had long begged her to think of an income-generating project which she could operate at home. This particular enterprise was just ideal for both of them. Merly does not find much difficulty in running her business. What she claims as the only hindering factor is the balancing act between business and family chores. She intends to hire a housemaid to help her in the house so that she could concentrate on the business.

Merly considers her business as her bridge to her dream. It is one which has provided income for her family and one which has brought them closer. She can feel the influence of the business on her children. They, too, dream of owning their business some day. Merly's oldest son can go to the market to sell slippers and come home that same afternoon with all the merchandise sold out. The eldest daughter has taken it upon herself to teach the younger ones their responsibilities in the business.

Merly takes pride in her contributions to the community. By employing her neighbours as contracted seamstresses, she was able to preach slipper-making to them and give them income. Three individuals whom she taught, now have their own enterprises.

After one year of operation, Merly qualified for and attended an entrepreneurship training programme conducted by the Institute for Small Scale Industries. From this training,
Merly claims that she reinforced the basis of her business experiences of the past years. She was able to validate her own business principles with the foundations of entrepreneurship.

Merly expects her business to expand in the next five years. She feels the enterprise growth and physically anticipated it by constructing a second floor for their home. The designated sewing area is the ground floor, while the living quarters have been moved to the second level. She hopes to get a loan for the expansion of her business. From the loan, she intends to add one more sewing machine and purchase raw materials stock. Within the next five years, she also hopes to buy a vehicle to transport her goods.

Even though she is doing well with her business at the moment, she found and entertained another business opportunity. Near her residence, construction of a factory is underway. She now wakes up early morning to cook for and sell short meals and snacks to the workers.

Aside from her business and family obligations, Merly is actively participating in church activities where she serves as the Secretary. She takes a lead in several church projects such as tree-planting campaigns. These activities also generate for her new customers.

Merly simply dreams that her business will be much bigger and that she would not be in the production line any more. She sees herself as the big boss, making big decisions. She wishes that her children will continue the business which she started.
UPALI AND HIS PUPILS

It started as an introductory lesson on maps in Geography. Being concerned that children should develop adequate concepts about maps, rather than treat them mechanically, Upali, the young social studies teacher of Grade 4, developed assignments for his pupils to relate real-life situations to this concept formation process. Drawing the positions of the classrooms, the principal's office, the playing field, and other locations in the school compound, was one such assignment. Important buildings and locations in the village was another. To this he added "time and motion" as the next step: time to walk to these locations from a "zero point", and then distance from the zero point. Going from the school compound to the village changed "upwards" the scale of the drawings, since the size of the drawing paper used remained the same. To change the scale "downwards", he thought of representing the home on a "map".

When children brought back the drawings of their homes with "time and motion" marked, and the products discussed, in some 60 per cent of homes at least, there seemed to be a great deal of walking to and fro for various purposes inside the home. In some cases it appeared that the already hard-working mother had to walk some six kilometres inside the home, doing various house tasks!

"Was all this walking necessary? Can we save our mothers some tiring effort?" asked Upali. This stimulated a concerned and lively discussion.
Upali and the children worked out that with a few space reorganisations, (such as moving the drying place for clothes nearer the clothes washing place; placing the stack of firewood closer to the kitchen; planting chilli and herb plants very close to the kitchen), a significant amount of "unnecessary" walking may be reduced, saving the already overworked mother from unneeded effort.

This was all very well inside the classroom, but how could this be done in practice in the several homes? Upali was able to mobilize the children's concern for their mothers, to motivate group planning, facilitated by him, which culminated with a plan of action for the task, starting with speaking to the parents that the children wished to contribute towards their mothers' welfare.

The next week was hectic. Speaking to elders; making further detailed maps of spatial reorganization; getting agreement from mothers about changing their habituated routines, were only some of the activities, all of which had to be done during out-of-school hours. The mathematics and science teachers were also "co-opted" into helping in the various measurement aspects. The sincerity of the children wanting to help their mothers, (the "Buddha in the home"), was clearly visible, and well appreciated. This acted as a trigger to generate co-operative action by many people in the village.

Another week of persistent effort. More co-operative effort for moving things, re-establishing new positions. Although there were many physical problems to overcome, the
enthusiasm prevailed, and much laughter wafted around the village with the cool evening breezes.

Already, by the following week itself, the mothers were recognizing a reduction in their tiredness. A new smile appeared in their eyes.

And the smile lit up the hearts and minds of the children too.

**ALI**

On a hot, sunny day on the beach, icecream is very popular. Ali went with his little four year-old sister, to the icecream stall, to buy themselves the refreshing delicacy. There were several people in the queue, and the seven year-old Ali and his little sister looked puny in the line which contained several adults accompanying children.

Six people ahead of Ali, a father and his little son, reached the counter. The boy wanted vanilla icecream, but this was all finished. The father tried to explain to his son that there was no more vanilla; that next time he would give the son two vanillas; that there was no point crying, but to no avail, not even to his stern voice! The father bought two strawberry icecream cones, and gave one to the still crying boy. He screamed louder and threw the cone on to the sand - and got smacked by the father, whose own cone fell too in the altercation, leaving a sticky pink stain on his shirt.
Ali saw the father dragging his still screaming son back, leaving a trench of sand where the boy's reluctant heels resisted the rough pull of the father.

Too bad! Especially because vanilla ice cream was exactly what his little sister adored, and wanted. Would she also create an ugly face-loss scene? Even if she did, he would not smack her. He couldn't. He loved his little sister so much.

When he came to the counter, he asked for two strawberry ice-cream cones, and gave one to his little sister saying "Pink vanilla". And they both left, happily kicking sand with their toes, and contentedly licking their cones.

**MR. ALFRED WONG**

In July 1991, Mr. Alfred Wong was awarded the Endec Entrepreneurship Excellence Award. His company, Noel Hampers and Gifts, established in 1976, is now the largest company of its kind in his country, with about 40 per cent of the market share. For Mr. Wong, success has not come easy. After he graduated in civil engineering in 1973, he joined his father's construction company, hoping to make his fortune in five years' time. Unfortunately the business collapsed. The bitter blow forced Mr. Wong to examine his goal in life. Mr. Wong turned his attention to the family hamper business, then a mere sideline. He discovered, when he surveyed the market, that the simply packed hampers were dull and unattractive. The quality of the goods and the delivery system were
inconsistent. Instead of marketing their ideas, people in industry expected the customers to approach them.

The early days were tough. There were only three people in the company, and they had to do everything. Mr. Wong was also going from door to door selling his gift ideas to factories and offices, sometimes being chased away. But his customers appreciated the trouble he took to see them personally, and advise them on the kinds of hampers suitable for an occasion.

Today, the company has expanded to floral arrangements and gift packages for special occasions. Always on the lookout for improvements, Mr. Wong talks to people and reads brochures on new management practices. He feels that, apart from business integrity and hard work, an entrepreneur must be able to set a vision for the business, and constantly monitor his goals to keep up with changing times. Sound financial planning is also essential. The entrepreneur must be able to build and nurture a core team, and in turn, he must be prepared to communicate his ideas with the core team and have their reactions. Goal sharing with the workers helps to foster identity and closeness among the staff.

**SRI RAM**

What was the point of teaching cleanliness and sanitation in school, if the entire hygiene situation in the village and environment of the school were so depressingly bad? This thought worried Mr. Sri Ram, Principal and his close
associates, many times, ever since they were transferred to the school. The fatal epidemic of typhoid in the village stirred their collective conscience so powerfully, that they decided that actions had to be taken to improve fast the sanitary conditions in the village. This decision sank them in a complex mixture of situations, ranging from convincing local people, especially the old, authority figures, at least not to obstruct actions; to discussions with health authorities as to where to start and what gradient of action to proceed with; to negotiate with education officials regarding participation by pupils and the rearrangement of the timetable; to searching and acquiring the necessary tools and implements. Such situations arose as imperatives of the planning Mr. Sri Ram, and close community members and teachers undertook regarding the task.

As further detailed planning proceeded, even more situations arose which needed action, for example poverty as the root cause of the sanitation problem, hence the need to reduce poverty at least to a level that people could function independently. Many times, the planning had to be modified to provide the flexibility for operating under a variety of resource constraints as well as conflict situations. Even then, the stress and strain on the small group, facilitated by Mr. Sri Ram, increased rapidly as soon as planning went beyond thinking, into action. Many situations, such as how to drain water without causing erosion; how to make compost; how to use solar heat; how to keep accounts; how to maintain motivation, required new learning, and after so many years since learning in their own schooling, they had to learn how to learn.
Fortunately they maintained a degree of humility, and honestly evaluated each mini-step regarding immediate and direct products, as well as indirect effects, and had enough discipline to overcome their natural egos, admit errors, and make corrections based on the evaluation evidence. The conviction of the importance of their mission for the lives of the people in the community, and for their own lives, motivated them to remain optimistic and persevere, and identify and seize all opportunities to proceed with action.

After some six years of effort, the health and sanitation situation improved greatly, as shown by reduced infant mortality and sickness, and absence of epidemics. The root problem of poverty, though not solved, was at least laid bare in many of its parameters. Some of them, such as moderate self-sufficiency in vegetables for homes via home gardens; gainful occupations for unemployed youth, did find solutions in the actions facilitated by Mr. Sri Ram and his group. The highest achievement was that the community had become more cohesive, and sensitive to its own problems than before, and had discovered that, with only some facilitation, the community could at least attempt to solve some of their own problems. Their task continues.

**SUNI**

Six months after Tom left, with tears in his eyes and profuse promises of sending money monthly for her, and of his returning soon to take her to his country to be "properly married", he stopped writing altogether. Beautiful 25 year-old Suni was yet another discarded "minor wife". Fortunately she
did not have any children by him, or else there would have been the added burden of half-breed children growing up in the village. So "risking" taking the new three-month contraceptive injection had paid off. She was not bitter about the breaking of Tom's promises, for she knew he did not love her, just as she did not love him. Fair enough that she provided a service in return for money and goods.

She did write to him twice after the stoppage of his letters - or at least, she had a friend write in English, what she expressed. Although she could speak English, she could not write it. Her relative fluency in spoken English was because of Tom and his friends who visited their home, permitting her to practice. She also learned "western ways" of cooking, eating, and behaving at table.

Many of her similarly discarded friends served in night clubs in the city, to use some of their perfected competencies for money making. Suni had no moral compunction about such jobs, if the money was good, but recognised the risk of disease from serving multiple clients. So she investigated how else her own competencies from the partnership with Tom may be utilized for monetary return. Maid service in the city was the best answer. Waitressing, another employment channel, also, frequently involved being forced to have clients. Maid service had the benefit of free board and lodging. With many visits to different employment agencies, she learned to distinguish the "genuine" from the "fraudulent", and did finally get a job as a maid in the home of a continental businessman and his wife and two children. Her hard work and diligence, her honesty, her kindness to the children, were soon
recognized and rewarded with bigger and bigger annual rises of pay, and she began to put back into the gradually reducing savings built up during the episode with Tom. It was the innocent seeking of help from her by her employer's children, in their English school lessons, that triggered her attending a high quality institution for a "proper" English course, which she completed successfully in one year, assisted by her fairly fluent spoken English.

She was happy at this house, happier than at any time in her poverty-ridden life (except of course the first year with Tom, before the quarreling started and his behaviour turned from gentle but inelegant, to coarse and brutish). There was Pai too, the neighbour's driver, also from a village in her province with whom early relationships were merely to give vent to the urge to hear and speak the same dialect. They married. They had two children quickly, and both continued to hold their respective jobs. And then he died in a motorcycle accident. Strange she should feel so bitter and betrayed, when the betrayal by Tom left her only mildly affected. The two children were already with her mother, upcountry. This proved most useful when she was selected for the newly opened employment possibilities in the Middle East - again as a result of her enlarging the competencies acquired in the Tom episode. Her careful use of money left a significant sum in her savings account, and this grew even more from her earnings in the Middle East and from the bank interest. Although several friends counselled her to give her money on loan at the usual high interest rates, two factors inhibited her. The risk of losing all was not worth the possible gain. Second, those who
borrowed in desperation, prepared to pay a high interest, were people from corresponding poverty backgrounds she herself came, and she felt for them.

After two spells in the Middle East, she refused a third assignment because of her children, who both had attained puberty, and she had seen what had happened to de facto motherless children in her village - dragged into the hell of prostitution. So again she analyzed her further enriched competencies, and the result was her taking up laundry duties, on an ad hoc basis, from foreigners, usually single men, living in apartments and condominiums near her dwelling, which she chose purposely to be within close proximity to such buildings. Her children are with her, and she helps them in their studies, especially English, and they help her in her laundry work. She has remained single. She has a financial partnership with two friends, one doing dress making and the other selling cosmetics. The perusals of English fashion magazines at good bookshops give her dressmaking ideas to pass on to her friend. She also reads advertisements on cosmetics in these magazines, copies down the descriptive advertising words, translates them for her other friend to use in her door-to-door sales of cosmetics.

She is now planning to open a dress/cosmetics shop cum cafe, and is spending her time, and mobilising her two friends' time, to locate a site with good potential for customers. She looks to the future with a smile.
DEVIKA

The effects of Malthion, a powerful and much-used insecticide, had been a topic of discussion at the school, as part of the Grade 8 lessons on the environment and its protection. Malthion's danger to human life, as well as to beneficial life forms in the ecosystem, like bees, birds, frogs and earthworms, had impressed Devika. Her friend Kamala's elder brother committed suicide in a fit of frustration, by drinking this insecticide, which had become readily available in the village. Grandfather now calls it Maraya, the Prince of Death.

Devika had argued with, and convinced her parents and grandparents, not to use or store the insecticide. As the only "educated" member of her extended family, this was not too difficult.

And now, in their cabbage plot, there were caterpillars eating away the leaves, and the little profit the family would get from the cabbages. Of course Malthion was the solution everybody advocated. It had been found to be swiftly effective. And Devika still resisted its use, but only just. The last time the argument came up, perhaps it was only her effective, tactical -weeping that melted the hearts, and she won a temporary victory. So painstakingly, each early morning before school, with the help of her little brother Anil, she would move from cabbage plant to cabbage plant removing the destructive caterpillars manually. There was some reduction of destruction, but it was very hard work. She increased the attack on the caterpillars by having Anil repeat the culling after lunch, and rewarded him with a sweet fruit or a piece of sugar cane.
when she returned from school. Other members of the family also participated in the caterpillar watch whenever they were free.

Because actions on the caterpillars had got routinized, she had won some time in finding a better solution to the caterpillar problem than returning to Malthion. But routinization also tends to shift concerns to the penumbra of attention.

Reflecting on her experiences in the cabbage patch, she recalled that she had seen some other insects attack the leaves, and they would fly away when she moved the leaves to pluck the caterpillars. So now there were two sources of destruction.

The mosquito net at home prevented flying mosquitoes biting her. Perhaps a net can protect the plants too. But how to mount the net? Her spare moments were occupied with this problem, and she finally thought she had a solution, of placing a frame of bamboo over the plants and fixing the net to the frame - and there was some old netting at home that she could use.

Although she was, by now, confident enough to try this technique, she wanted to consult her school teacher who had always been enthusiastically supportive of any new ideas. Because her parents, in particular, respected her teacher greatly, merely saying her teacher supported her idea, would add substantial weight to her arguments to convince her parents and grandparents to try the new technique which nobody in the village had used before.
The teacher not only supported her idea joyfully, but gave very useful details, such as soaking the old mosquito nets in the warm liquid obtained from boiling thrown-away skins of ripe banana, a few crushed betel nuts, and a handful of crushed margosa fruits, to strengthen the net fibres. The teacher also reminded Devika that the caterpillar problem still remained; that the net would make the manual removal of caterpillars more cumbersome; that perhaps in the "life cycle" and habitat studies Devika had done in school (of the fly, the butterfly, etc.), there may be hints that may trigger a possible solution to the caterpillar problem, especially if attention is focused on eliminating the greatest numbers with the least effort.

Indeed, her preoccupation with the flying insect problem had also shifted her mind away from the more serious caterpillar problem, and the teacher's facilitation re-ignited her reflections. She thought about the caterpillar's life cycle. It suddenly came to her that before becoming caterpillars, they were eggs all in one place, and if these were located, a very large number of future caterpillars would be eliminated with little effort. Then she saw the meaning of the teacher's hint about habitat. Where were the eggs laid? So started a search with Anil, in collections of rubbish and leaves nearby, for eggs, and she found hundreds of them. A little Kerosine oil and a small fire removed, in a few minutes, hours of future toil. The amount of rubbish around triggered a new sequence of actions, to establish compost making, which had been discussed, also, in school, and demonstrated on a small scale. That would be another idea to discuss with her teacher.
Devika's actions produced results. There were very few cabbage plants damaged. No poisonous insecticides were used. Compost-making was started.

Indeed, thanks to her teacher, Devika was able to share her experience with her peers at school, and with their parents as well. In Devika's village, it is now a common sight to see old mosquito nets over plants, and rubbish being placed in compost-making pits.

**TOMO**

Depicting the powerful clashing of cultural waves lashed by rapid change, as modernisation meets peak to peak with ancient tradition, required the conflicting visual counterpoint among the true-to-life, surrealistic and impressionistic forms of expression.

Tomo felt in him a raging anger at the loss of the old beautiful. Simultaneously, he felt, too, the exciting expectation that the new, though culturally coarse, could eradicate hated, inhuman poverty around him, through technology.

The explosiveness of his emotions found vivid expression in a triad of paintings, that became nationally recognised.

But the versatile human frame, so capable of producing profound artistic creativity, was no match for the physics of a speeding motorcycle. His crushed hands were amputated.
If only he had enough money, he could have technologically advanced artificial hands. This became his obsessive ambition, consuming his waking, and sometimes even his sleeping hours.

Deliberately, stubbornly, persistently. he set about substituting for his hands, to continue painting. Surely his lips, teeth, tongue can be made to work for him. The delicate operation of removing the pulp around the seed of a small fruit, he could perform since childhood, with his tongue and teeth.

So practice, practice, and more practice memorizing each effective stroke of the brush he wielded in his mouth.

And then the toes. Surrealistic expression required accuracy of emotion via colour, line and form not true-to-life photographic images. So practice, practice, and more practice, memorizing each effective stroke of the brush he wielded with his toes.

People now came to watch him "perform" with his mouth and toes. He feels the revulsion of being treated as a freak. But if this sadistic curiosity helps sell his paintings to give him money, to give him artificial hands, he will suppress revulsion and smile.

And then he would not be an exhibition. Only his paintings will.

At the present rate of money collecting, that could be only three years ahead - a fraction of a life time.
Over the years, Shanti Lionel Yoland Perera, (SLYP to his close friends, and SLY to others), had developed for himself a lasting and formidable reputation as an excellent manager of Government Departments. His main strength was in his versatile and highly adaptive techniques for decision avoiding. Through this, he never permitted the "boat to be rocked", and thus pleased all his bosses. The fact that hardly any developmental results or products ever emanated from any of the Departments he headed, was irrelevant to the bureaucratic mores of his time.

As he would heatedly point out, (though only to very close friends), decision avoiding was totally different to the mean and despicable practice of decision delaying. This latter was a passive, degenerative, negative activity, that may even have been immoral.

"An effective manager will not sit back simply avoiding decisions", he said. "He will be on his feet when decisions are asked for. He will avoid them aggressively. He will keep the initiative in his hands. He will never allow decision by default".

It takes enterprise and ingenuity to initiate effective actions to avoid decisions, since each situation is different. It needs merely cowardice to delay decisions!

One of Mr. Perera's important avoidance techniques was to avoid himself having to avoid decisions. He had quickly learned, when he was on lower rungs of the bureaucracy, that it
A garland of stories

was essential to be "out of focus" if something went wrong, and the bosses inevitably sought a scapegoat to place the blame on.

Let someone else do the avoiding. The "Task Force" or "Committee", Mr. Perera recognized, was an excellent vehicle for this. But experience showed that even such a team may, at some time, be tempted to make a decision. Mr. Perera's cleverness was in his astute and careful planning for the team and its operations, taking many factors and probabilities into account, so that making a decision was well nigh impossible. His well-tested techniques included:

a) make internal chaos in the team, by making the team large. Teams of 40 or more rarely made decisions;

b) make the chances of physically coming together as a team difficult, such as by placing on it members who were already very busy in other teams, members who were geographically dispersed, members who were sure to be abroad frequently, and also establish a high quorum rule;

c) make the chances of coming together substantially remote by making several mutually sworn enemies members of the team, in particular ones who would rather fight each other than consider decision problems facing the team. This kind of hostility was, fortunately, infectious as well, and the team soon disintegrates into a collection of cliques;

d) make the chances of continuity of discussion dim, by having only mechanical, procedural minutes of the sessions, with subtle over-emphases given to
controversial discussions, which would then be argued about anew at each new session, and not the substantive aspects before the team.

If the team still seemed to be moving dangerously towards a decision, Mr. Perera would pointedly drop one or two unimportant team members (specially planted in the team because of their disposable attributes), and spread the rumour that the VVVIP thought the dropped ones had not been-in harmony with HIS thinking. The others in the team will be distracted totally, trying to find out what the VVVIP really wants, and decision-making will be forgotten. The adding of a special consultant, whose terms of reference are made sufficiently ambiguous, is a further safeguard. The consultants report performs the useful functions of confusion-and hostility-rousing, further distracting action, or even thought, on the original decision problem.

Casting the decision into the ethereal realm of "Policy Matters", was another of Mr. Perera's powerful techniques. Mr. Perera's enterprising mind could promote any, even a trivial, situation into a "policy matter", and certainly a Department Head is not expected to make policy decisions! For example, changing two 25w bulbs to 40w, in the dim corridors, could involve a policy decision on unit recurrent costs of departmental management, which itself, would involve, among others, comparative surveys of recurrent costs in other departments. The demand that Mr. A should see all in-coming acknowledgement letters before Miss B and Mrs. Can would involve a policy decision on time and motion efficiency of
administrative operations in that department, and in corresponding departments elsewhere.

Mr. Perera knew well that such issues were received with great delight at the higher levels, for they gave endless opportunities for electron-microscopic splitting of even non-existing hairs. His own decision is legally and validly avoided, and the boat is not rocked.

There were scores of other organizational techniques, ones which exploited the potentials of the bureaucracy, that Mr. Perera had developed, perfected and used. He always matched carefully the technique or combinations of techniques, to the analyzed attributes of the scenario that required a decision, so that the net result was the avoidance of a decision.

At the personal action level too, Mr. Perera had perfected, both by acute observation of other skilled decision avoidance operators, and by practice, many more techniques, and these, too, he used with careful selectivity according to the characters of the persons in the scenario. Among his well-tested techniques were an angry, disgusted, tantrum outburst to intimidate; or double talk cloaked in administrative jargon such as via a warning not to mistake a symptom (on which a decision was asked for), for the fundamental, underlying disease which should first be thoroughly investigated; or pitching back the problem to the initiators via his deep dedication to devolution of authority and decentralised management; or a confidential, kind, empathetic warning of how dangerous it is for the organization to waste time on
imaginary problems, when none exists; or indicating complete support, but to support thoroughly asking for more (and more later, and still more still later) details. This latter was his forte, and there would be endless "further details" required, even for a mere repair of the odorous toilet that the clerical staff use, such as size, volume, materials, quality, legal aspects of contract tender, not to speak of (in the interest of a good job to be done) the frequency of use, male/female mix, social and health dangers and on and on.

This highly enterprising person not only survived in the bureaucratic jungles, but also was acclaimed. He became indispensable, thus ensuring his job security, even after retirement, as a consultant. There is talk that an international assignment is also on the way.

The manner of being enterprising exhibited by the various people in the stories, may appear different. Yet there are many common characteristics that are easily identified. Some of these are indicated below:

Which of the following characteristics may be identified, in which of the people, in the stories above? Are these characteristics seen in other enterprising people too? Are they seen in successful people called Outstanding Entrepreneurs' in the business world as well? Are there other important characteristics not included? What could a definition of an Enterprising person be?
In these diverse life scenarios, the people involved responded positively, even optimistically, and with a future orientation, to problems they faced. Some of the problems in the stories were of small magnitude, and of short duration. Others spread over nearly a life time. Some were heartrending and encapsulated excruciating pain of body and mind, and others were fleeting. Nevertheless, the people involved faced up to them as challenges, rather than only fearing them as possible sources of further continuing calamity.

The motivation to achieve was strong, and sustained. Opportunities for the purpose were recognized and seized. Reflective thinking, rather than impulse, and translating thinking into taking initiative, making decisions, and accepting (at least tacitly) responsibility for the decisions, were also characteristics of the people in the stories. Dependency was dissolved out.

Of course, fear and doubt were always there. This is just being human. But the fear, the doubt, and even the pain, were overcome, to do something about solving the problem. In spite of fears and doubts, and recognized obstacles, morale did remain high, at least high enough to try to take some action without remaining passive and becoming a victim of stress and circumstance.

The persons in the stories were certainly "self-starters" and prudent risk takers. There were always plans, strategies, tactics, assessments, and preparatory work. Existing resources of various kinds (including the supernatural!) were mobilized,
and, frequently, added to. There was continuous learning with identified goals in mind.

Innovation, creativity and flexibility were intrinsic to the people in the stories, as well as independence and self-confidence. Breaking with tradition and routine followed.

Advocates of facilitating the growth and development of enterprising people, and through people, an enterprising culture, have attempted several definitions of the enterprising person, one example of which is provided below:

“An enterprising individual has a positive, flexible and adaptable disposition towards change, seeing it as normal, and as an opportunity rather than a problem. To see changes in this way, an enterprising individual has a security borne of self-confidence, and is at ease with dealing with risks, difficulty and the unknown. An enterprising individual has the capacity to initiate creative ideas, develop them, and see them through into action in a determined manner. An enterprising individual is able, even anxious to take responsibility and is an effective communicator, negotiator, influencer, planner, and organizer. An enterprising individual is active, confident, and purposeful, not passive, uncertain and dependent “.

Chapter Two

ATTRIBUTES OF ENTERPRISE EDUCATION

Scope and Aims

The enterprising people in the stories showed that they had recognisable characteristics in common, though the story scenarios were widely different. In particular, all of them took action under their own volition.

Do such characteristics and proficiencies have their origination purely in genetics, and/or social learning? If this be the case, it could be that only a certain, selected few, within a portion of a kind of "Gaussian distribution", will, in any case, be capable of having such characteristics and proficiencies. If so, the domain of contrived education, (formal or non-formal), would be well-nigh helpless in generating these.

While it is certainly true that a combination or convergence of, even fortuitous circumstances, may produce, and indeed have provided individuals with the above characteristics and proficiencies, evidence from many countries, (hence from different socio-cultural settings), indicate that such characteristics and proficiencies are learnable through contrived education, provided the methodologies used are compatible and adequate.

The proficiencies exhibited by enterprising individuals, as active autonomous citizens, as people who refused to remain passive and permit circumstances to overwhelm them, have been learned by them. This learning has involved changes in
knowledge, skills and attitudes in the individuals. Changes in knowledge, skills, attitudes involve educational acts, and these acts are then the integral and composite components of Enterprise Education.

The proficiencies were utilized by the individuals for improvement of the quality of their lives. A significant goal of Enterprise Education is indeed the development of individuals who are active, purposeful, creative, self-confident, and capable of improving their quality of life.

Because the acquisition of the proficiencies fortifies individuals for active existence throughout life, the potential scope of the results of Enterprise Education is life-long.

The situations that demand enterprising behaviour are also wide in scope, and not confined to the peculiarities or specificities of any one subject area. Enterprise Education is then not confined to one subject area. All subjects can have situations that may be used for the development of enterprise proficiencies. The exposure of learners to the utilization of enterprise proficiencies in a variety of subject matter contexts provides them the versatility of manifestation of the proficiencies in a diversity of content contexts. It also highlights for the learners the flexibility of the same proficiencies, irrespective of the content contexts in which they may appear.

Invariably, learning for taking action in regard to the proficiencies must involve real-life problem situations. Thus, Enterprise Education becomes flexibly "formal" and/or "non-
formal", according to the situation that demands enterprising behaviour.

Being enterprising demands adaptive and innovative functions from the individual. Thereby, Enterprise Education includes the provision of opportunities for the learners to be adaptive and innovative in diverse situations.

Since, in addition, positive, optimistic attitudes are required to initiate and sustain enterprising behaviour and actions, Enterprise Education accepts the grooming for such attitude change, as a long-term task requiring extended periods of exposure to relevant learning situations. Thus Enterprise Education starts early in the education journey of the learners, and is maintained over the entire "education period'. Enterprise Education is not confined to any particular age or time of learning.

With attributes such as the above, Enterprise Education can act as a major organizing principle for education, and perform a "valuable" corrective function to "academic" learning, and its genesis source, the philosophy of "storage" or "banking" of knowledge.

**Intended Learning Outcomes**

Before designing and developing learning sequences in Enterprise Education, aside from recognizing the scope and other attributes of Enterprise Education, the specific intended learning outcomes have also to be identified and stated.
The profiles of enterprising people, such as those sampled earlier, are rich sources for the purpose. From such sources, a number of intended outcomes to be achieved by learners through Enterprise Education may be listed. The following list includes some of these outcomes:

The learner will be able to:

- locate, gather, retrieve, process, interpret relevant information, and identify trends/patterns;
- identify, define, analyse and solve problems;
- select and apply relevant components of already acquired knowledge and proficiencies in appropriate situations;
- form judgements, test hypotheses/hunches, make generalizations, on the basis of available data;
- demonstrate reflective, non-impulsive approaches/strategies;
- make appropriate and responsible decisions;
- plan, make preparations maximising opportunities/resources, and execute plans, in action;
- work both independently, and with others;
- set personal goals and persevere to reach them with consistent effort;
- exhibit flexibility, adaptability, initiative, creativity;
- exhibit positive, optimistic, future-oriented, action-focused attitudes;
- demonstrate willingness to break with routine, stereotypes and tradition;
- show willingness to take prudent risks;
- practise willingness to learn anew and continue to learn as required.

No doubt more such intended learning outcomes for Enterprise Education may be derived from case examples of enterprising people. Even the above intended learning outcomes (for example related to learning to learn or to problem solving) may be further resolved into sub-categories, and this may need to be done in many cases before actual learning/teaching episodes are designed and developed.

Particular situations that demand being enterprising may require particular sub-sets of the above (or expanded) list of intended learning outcomes, and not necessarily all of them. Yet, with the scope of being foundational to life-long practice of being enterprising, the learning sequences in Enterprise Education would need to include as many of these as possible, and ensure that their appearance in the learning sequences take place in as many diverse situations and subject areas as feasible. The outcomes, by themselves, are not subject matter specific, but may be considered pervasive to all learning.

Additional characteristics may be identified in such lists of intended learning outcomes for Enterprise Education:
a) they must necessarily include ones in the affective domain, especially since action is triggered by the learner's self-volition;

b) the intended learning outcomes, though appearing to be behaviorally discrete when listed in the above manner, are, very frequently, mutually integrated and interacting, and have to be treated holistically (for example, plan, make preparations, work independently, demonstrate willingness to break with routine etc.);

c) some of the intended learning outcomes would need to be achieved at a level of practical proficiency before venturing into the achievement of other intended learning outcomes that implicitly require the former. For example, the intended learning outcome of being able to learn to learn includes (among others) sub-outcomes such as the following:

The learner is able to:

- identify one's learning needs, and plan, conduct and evaluate study;

- profit from different learning strategies such as learning under the guidance of a teacher/resource person of learning alone, inter-learning, exchanging teacher-learner roles;

- use a variety of learning media, and tools of learning and specific methods of inquiry in different subject areas;
- comprehend the nature and structure of different disciplines of knowledge instead of their content only;

- perceive learning in school and outside as interconnected and mutually reinforcing.

The above would need to be achieved prior to attempting to achieve the solving of problems in real-life situations that are likely to require learning anew. Undoubtedly these problem solving learning sequences would hone further the already acquired proficiencies in learning to learn.

An alternative, nevertheless convergent, path to the intended learning outcomes is to consider the unit operations involved in "taking action" in regard to a particular situation that requires being enterprising. This approach underlines the paramount importance of the "action" component in learning sequences for the development of enterprise proficiencies.

Broadly, the action scenario has four components, namely:

- the triggering of action

- the empowering for action

- the operations for action

- the sustaining of action
Becoming enterprising - technical guidelines

This blueprint for action may be depicted diagrammatically as follows:

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<table>
<thead>
<tr>
<th>Proficiencies for</th>
<th>Proficiencies for</th>
<th>Proficiencies for</th>
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</thead>
<tbody>
<tr>
<td>TRIGGERING OF ACTION</td>
<td>OPERATIONS FOR ACTION</td>
<td>EMPOWERING FOR ACTION</td>
</tr>
<tr>
<td>Such as:</td>
<td>Feedback</td>
<td>Such as:</td>
</tr>
<tr>
<td>Self concept</td>
<td>Recognizing opportunities</td>
<td>Information seeking</td>
</tr>
<tr>
<td>Awareness</td>
<td>Evaluating</td>
<td>Occupational skills</td>
</tr>
<tr>
<td>Ambition</td>
<td>Planning</td>
<td>Social skills</td>
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<tr>
<td>Initiative</td>
<td>Executing</td>
<td>Operational/</td>
</tr>
<tr>
<td>Risk taking</td>
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<td>Management skills</td>
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<td>Flexibility</td>
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<td>Perseverance</td>
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<td>Networking</td>
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<td>Follow-through</td>
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<td>Discipline</td>
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<tr>
<th>Proficiencies for</th>
<th>SUSTAINING OF ACTION</th>
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<tr>
<td>Such as:</td>
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<tr>
<td>Coping with success</td>
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<tr>
<td>Coping with failure</td>
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<tr>
<td>Moral and social obligations</td>
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<td>Futures planning</td>
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For taking the component actions, a number of required proficiencies may be identified in each of the components (examples of which are provided in the diagram). The proficiencies are in all the domains of the cognitive, affective, intuitive and psychomotor. The proficiencies then become the intended learning outcomes of the learning sequences for the development of enterprise proficiencies.

The derived proficiency list (and the list of intended learning outcomes) would include the following:

<table>
<thead>
<tr>
<th>A. Triggering for action</th>
<th>Proficiency</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Self concept</td>
<td>- Controlling one's life through a positive outlook on self.</td>
</tr>
<tr>
<td>- Awareness</td>
<td>- Perceiving realistically the environment around one's self and within which one is to take action.</td>
</tr>
<tr>
<td>- Ambition</td>
<td>- Driving to reach a goal and to do things in a manner that meets or beats existing standards.</td>
</tr>
<tr>
<td>- Initiative</td>
<td>- Taking actions that go beyond the routine requirements or demands of the situation.</td>
</tr>
</tbody>
</table>
B. Empowering for action

- Information seeking - Seeking information; seeking advice on who to approach for help in a particular matter.

- Occupational skills - the necessary skills/expertise to perform an identified type of work.

- Social skills - Relating with other people effectively.
Attributes of enterprise education

- Operational/Management skills

- Managing the tasks involved in management skills an endeavour.

C. Sustaining action

Proficiency

- Coping with success

- Not losing one's perspective even when successful.

- Coping with failure

- Accepting failures and redefining goals.

- Moral and social

- Seeing individual success in obligations the context of social good.

D. Operations for action

Proficiency

- Hunch

- Decision making intuitively.

- Recognizing

- Recognizing and identifying opportunities opportunities relevant to the action.

- Planning

- Developing and using logical step-by-step plans to reach a goal; setting clear and specific short-, medium- and long-term objectives.
- Executing - Implementing one's plans of action.

- Evaluating - Monitoring progress and achievement of goals and the quality of performance.

- Feedback - Using suggestions and criticisms to improve or continue tasks.

The listing above included "moral and social obligations". In one sense, enterprise proficiencies are "amoral" and "neutral". Criminals and other anti-social individuals have been very enterprising people. The use of the powerful tool of enterprising proficiencies must necessarily be cast in a conscious and responsible framework of social and moral obligations, as an integral component of Enterprise Education.

**Appearance in Current Curricula**

Already, in many countries of the region, and elsewhere, these proficiencies have been specified in national curricula as intended learning outcomes, though not necessarily holistically for Enterprise Education. For example, planning, rational and critical thinking, problem solving, communicating effectively, showing co-operative interpersonal skills, being independent and responsible, being innovative, being able to self-learn are among the specified intended
learning outcomes of new curricula in many countries of the region, especially in the last decade.

However, generally, such specifications appear in the context of specific subject matter content domains (the earliest to manifest these being in the domain of science Earnings).

Nevertheless, the fact that, in several countries, so many subject matter domains (science, social studies, language, work education, etc.) already carry intended learning outcomes focused upon the above characteristics and proficiencies, points to the reality that educational designers do consider these characteristics as learnable and as integral and required components of general education. It also points to the recognition that the recommended mode for such characteristics and proficiencies to be developed is for them to be learned in different scenarios of learning, i.e., via the different learning scenarios of the subject matter disciplines, and over time (across the several years of general education).

Thus, de facto, many countries in the region have taken policy decisions already, whether formally stated or not, for the incorporation of such characteristics and proficiencies in the educational designs of their countries, for all learners, and not for a selected few, even though, in practice, they may as yet make token "appearances" only, in the learning situations of these subject domains.

Now that the focus has returned to these proficiencies, for example, as a result of the new emphasis on entrepreneurship, the above design and policy decisions still
hold good - that the establishment of the above characteristics and proficiencies requires their nurturing over time, and over different learning situations.

Attempts to develop them merely in the context of entrepreneurship may not be sufficient. Even if their practical utilization, to begin with, may possibly be exclusively in entrepreneurial scenarios, these characteristics and proficiencies would still need to be generalized into a variety of situations. Such a position would lead to their being included in the scope of general education, (even if they are only for the narrow interests of entrepreneurship), rather than only in "enterprise education" related to entrepreneurship.

The importance of these characteristics and proficiencies, however, transcends "money-making" entrepreneurship. They become essential for survival in the future. Thereby, these characteristics and proficiencies return to the very heart of general education itself, and reassert themselves powerfully once again in the spirit of the policies already established by so many countries in the region.

Some examples of their appearance in national curricula are indicated below (one across the entire elementary level curriculum, and the other in individual subject areas):
NEW ZEALAND

Work and Study Skills

The curriculum will enable all students to:
- work both independently and in group situations;
- display sound work habits and qualities;
- make the preparation and effort necessary for achieving goals;
- acquire the qualities of enterprise and initiative;
- develop the ability to continue learning throughout life;
- make career choices on the basis of realistic information and self-appraisal.

Social Skills

The curriculum will enable all students to:
- relate easily to others, and work in co-operative ways to achieve success;
- take responsibility for the well-being of others and of the environment;
- develop desirable social qualities such as integrity, reliability, trust, fairness, and courtesy;
- participate effectively and productively as responsible and informed citizens of New Zealand's democratic society and economy.
Problem-solving and Decision-making Skills

The curriculum will enable all students to:

- identify, describe, and solve problems;
- inquire, explore, generate, design, measure, and make;
- form judgments, test hypotheses, and make generalisation on the basis of supporting evidence and sound argument;
- exercise imagination, initiative, and logic in the solution of problems;
- make appropriate and responsible decisions.

Self-management Skills

The curriculum will enable all students to:

- strive for and achieve standards of personal excellence, self-discipline, and responsibility;
- set personal goals and work towards their attainment;
- develop adaptability and initiative;
- develop self-appraisal and self-advocacy skills;
- take responsibility for personal health, safety, and well-being;
- develop constructive responses to stress and conflict, success and failure;
- develop practical life-skills.
THAILAND

Mother Tongue:

- Being able to apply the experiences gained from studying the mother tongue, to thinking, making decisions, solving problems, and analysing and diagnosing various events rationally;

- Being able to use the mother tongue creatively;

- Using spare time to seek additional knowledge from books, the mass media, and other knowledge sources (learn to learn);

Mathematics:

- Knowing how to think rationally and express one's thoughts in an orderly fashion, clearly and compactly;

- Being able to apply the experiences gained through studying mathematics, to the learning of other subjects, and to daily life;

Life Experiences:

- Possessing the "always searching for additional knowledge" habit for good life (learn to learn);

- Determining the problem solving process and applying the experiences thus gained to living one's life;

- Being able to adapt oneself to the changing environment;
- Understanding the principles of peaceful coexistence in society;

- Possessing science process skills and being able to apply science and technology for use in daily life;

**Character Development**

- Being able to analyze, criticize, solve problems, clearly express oneself, and work co-operatively with others;

- Seeking additional knowledge, and new ways of working, being creative, making decisions and solving problems after applying all the knowledge one possesses for better work results and better life;

**Work-Orientation:**

- Being able to work according to a plan, to work co-operatively with others, and to help one's family and others as deemed appropriate to one's age level;

- Being creative, always revising one's work and the work process, in order to obtain better results.

Similarly, for the Lower Secondary Level, the aims (later reflected specifically in subject areas), included the following:

- Being able to analyse community problems and choose alternatives for solving them, taking various limitations into account;
- Being creative, being able to improve one's performance, resulting in better progress for oneself and for one's community;

- Possessing basic skills in carrying out honest occupations, being able to conduct management activities, and being able to work co-operatively with others;

- Understanding conditions and changes in one's community, and being able to suggest ways of improving the community.

And for the Upper Secondary Level, corresponding aims include the following:

- Being able to plan for problem solving in one's community;

- Being creative and being able to apply new ways or techniques to improve one's community;

- Possessing love of the working habit, being willing to work co-operatively with others, and possessing management skills;

- Understanding conditions and changes in society, nation and the world.
AUSTRALIA

JUNIOR CITIZENSHIP EDUCATION SYLLABUS (1987)

2 Global Aims

The syllabus is designed to assist students to acquire:

a) a knowledge and understanding of the institutions and values of our society;

b) a knowledge and understanding of significant developments in the contemporary world;

c) a capacity to identify and exercise the rights and responsibilities of democratic citizenship;

d) an ability to analyse, to evaluate and to contribute rationally to issues of societal concern;

e) competence in the practical and social skills necessary for effective citizenship;

f) an understanding and a commitment to the democratic concepts of justice, equality and freedom;

g) an acceptance of, and an empathy with, peoples of other values and cultures.

3 Life Roles

In designing a course of study from the following objectives, schools should maintain an emphasis on the fostering of adult-relevant knowledge, skills and responsible attitudes befitting a purposeful and effective citizen in a pluralistic, democratic society.
4 General Objectives

Process Objectives. Students should be able to:

a) identify a problem or question for investigation; b) plan the investigation of the problem or question;

c) locate, select and organize evidence relevant to the investigation;

d) comprehend, interpret, analyze and critically evaluate the evidence to produce a conclusion/judgment on the problem or question;

e) express the conclusion/judgment in appropriate written, oral and/or graphic form;

f) develop powers of discrimination and critical judgment on the changing nature of citizenship.

Affective Objectives. Through value-promoting activities, students should:

a) become aware of and responsive to the role of the individual citizen in society;

b) appreciate that citizenship involves both rights and responsibilities;

b) appreciate the serious consequences of an apathetic and uninvolved citizenry;

d) be willing to become an active and informed member of society;

e) become confident in group and community interaction;
f) be willing to express and revise personal values and attitudes;

g) develop a commitment to the values of social and international Justice;

h) empathies with the value positions of others, leading where appropriate to tolerance of differences.

P-10 SOCIAL EDUCATION FRAMEWORK(1989)

Goals

The natural world

Students should focus on various natural environments and the impact of humans over time. Emphasized is a sensitive, caring approach to environmental change, and an informed and environmentally-conscious citizenship role.

Human endeavour

Students should demonstrate an understanding of knowledge and methods drawn from various disciplines used to investigate people, societies and environments. Emphasized is a thoughtful commitment to democratic community life, a clear set of personal values and beliefs, and a positive self-concept.

Processes of Social Investigation

Students should use a sequence of procedures involving:

- posing answerable questions and determining evidence required
- recording, organizing and using evidence in a systematic manner;
- processing, concluding, generalizing and predicting based on this evidence;
- reflecting on and evaluating these outcomes;
- demonstrating a socially responsible approach to the use of investigative procedures.

**Practical Application and Social Competence**

Students should:
- perform a range of practical tasks which demonstrate their competence;
- evaluate the relevance of theory in practice;
- develop social skills necessary for effective interaction;
- develop decision-making skills necessary for effective citizenship;
- be reflective and self-critical, to improve their performance.

**Critical Thinking**

Students should:
- develop their analytical and evaluative capabilities;
- examine implications of different value positions;
- make informed and reasoned decisions;
- enjoy, value and participate in rational, responsible discussion and debate.

Communication

Students should:

- relate and communicate effectively and efficiently with others in a variety of settings;

- confidently express and exchange ideas, understandings and opinions using a range of media;

- demonstrate a willingness to co-operate with others in various social tasks.

MATHEMATICS (YEARS 1-1 AND 12)
(Department of Education, Queensland)

Global Aims

This syllabus is concerned with the total development of the student and should be seen as one of a number of possible options that naturally flow from the Years 1 to 10 Mathematics Syllabus for Queensland Schools. It will apply and extend many of the mathematical concepts and processes in that syllabus to the life roles outlined in the rationale, so that the student may have a greater understanding of these roles. Therefore, these are the aims for students:

- They will develop their abilities and skills to use mathematics effectively as
Attributes of enterprise education

a) a means of communication,
b) a form of symbolic representation,
c) an aid to explanation, and d) an aid to prediction.

- They will expand their abilities to learn by inquiry, discovery and discussion, and to develop research abilities.

- They will develop creative thinking, enabling them to apply mathematics to real situations by using mathematical skills and concepts to solve problems arising from significant life roles.

- They will experience personal growth through active involvement in the learning process and the success that this will bring. The students' perceptions, both explicit and implicit, of the use of mathematics in our society will be much broader and therefore of greater value to them. Personal growth will also occur as social and communication skills develop through collaborative learning and group work.

- They will realize that mathematics and mathematical concepts are an integral part of our society. Mathematical concepts can be seen all around us: for example, the geometry of cranes used on construction sites, the lines and dynamics of cars, the use of probability and statistics in opinion polls. This appreciation is a fundamental of mathematical education.
METHODOLOGICAL STRATEGIES FOR ENTERPRISE EDUCATION

The crucial and pervasive strategy for facilitating the growth of the capacity of learners to take action on their own without waiting for things to be done for them, is clearly one that permits the learners to take initiative, to make the learning itself learner-driven at least in all the intended learning outcomes indicated earlier as components of Enterprise Education. Taking initiative goes beyond "active participation" of learners, to becoming doers.

For the range of components included as intended learning outcomes in Enterprise Education, it is likely that some of them would demand strategies different to others. An analysis of the relevant action initiatives to be taken by the learner may provide useful guidelines regarding the required specific methodological strategies. Examples of different types of such analysis, usable as sources for identifying methodological strategies, are indicated immediately below. Further on, other facets of identifying methodological strategies are considered.

Solving Problems

The following, is indicative of the kinds of strategy considerations that may be needed for the important component, problem solving, which applies to any subject-matter domain, and to real-life problems about which learners are being groomed to take action:
- Real-life problems may be too complex for young learners while they are being initiated to develop proficiencies in this respect.

- So problems that can be handled have to be used first, though they may still be drawn from real-life situations to provide meaningfulness to the learning.

- Whether the problems are complex or matched to the maturity of the children, the process used in solving them has to be systematic. To be proficient in this systematic process, children need to experience for themselves, in practice, this process, as it appears in different situations. These experiences have to be repeated many times, so that children internalize the process to such an extent that being enterprising, and being willing and motivated to solve problems through their own action, becomes a "habit"; becomes "second nature".

- Problems arise in concrete situations, not in vacuums. Close observation of the situations is essential for future problem solving. The proficiency of acute, accurate, and reliable observation, is basic to problem solving, and is a first proficiency.

- Observation generally produces a large mass of data. To deal with the data systematically, it is frequently necessary to recognize patterns in the data. The proficiency of recognizing patterns in the observed data, is a second proficiency essential for effective problem solving.
- Although we may have a vague "feeling" about a problem, or that a problem exists, to take action to solve the problem, the problem has to be identified accurately, and defined precisely. This is a third proficiency essential for effective problem solving.

- Careful defining of the problem will facilitate identifying the variables related to the problem, and then, those variables that may be intervened for can also be identified, prior to taking action to solve the problem. Identifying variables becomes a fourth important proficiency necessary for solving problems.

- In considering which variables may be intervened for, it is likely that one or more assumptions may have to be made. Recognizing such assumptions becomes a fifth important proficiency for problem solving.

- There may be several ways of solving a problem. Some may be difficult to do under particular circumstances, even if the solution may be very good. Considering alternative solutions to a problem provides the opportunity of selecting the best solution that fits the particular situation in which the problem exists. The consideration of alternative solutions must accompany aspects such as the availability and the need for resources, to undertake the solution; the tactics to be used; the preparations to be made. So it is not a mere listing of possible
solutions alone. This becomes the sixth significant proficiency for effective problem solving.

- This preparation of alternative solutions can lead to the selection of the feasible solution, that matches the particular situation of the problem. Thus selection would involve the use of particular criteria for the selection, so that the selection may be both valid and feasible under the circumstances of the problem. Judgement is naturally needed in making this selection. This becomes the seventh important proficiency for the problem solving.

- Had this learning been merely "academic", involving "paper problems/paper solutions", the learning sequence could have stopped here. In many textbook situations, it does stop here. But, we are involved in developing proficiencies for real-life problem solving by the children in practice. So further steps in the sequence are required. The solution selected to solve the problem has to be executed. This involves planning for execution of the solution. The steps to be taken, resources to be used, tactics to be employed, the timing, the pace of action, and by whom, are among the many considerations that would go into the planning for execution. a proficiency that is the eighth in the sequence, needed for effective problem solving.

- Even this can remain academic, if actual execution does not take place. A variety of sub-proficiencies are bundled together under the proficiency for
- execution, including ones that may be drawn from many different learning areas (such as language, ethics, social proficiencies). Trade-offs and compromises may become inevitable in the reality of execution, so that "running repairs" to the plan originally developed may be needed. So may various kinds of crisis management, whenever these arise. These situations would certainly be helped if the plan for execution developed above is resolved into a series of practical "mile posts" (sub-objectives) to be reached on the way to the ultimate goal in solving the problem. This cluster of proficiencies (and a complex one at that, and with components specific to given situations, and hence variable in different situations) becomes the ninth in the sequence of effective problem solving.

- The possible trade-offs in real situations, the crisis management, the running repairs, among other factors, emphasize the importance of the proficiency of monitoring the execution, in terms of whether the mile posts developed from the planning for execution stage are being passed; whether deflections made are still in the direction of the ultimate goal of the solution to the problem; whether and what corrective actions have to be taken to ensure solution of the problem. There are also "running repairs", but in the context of reaching the goal originally planned for, as the solution to the problem. Thus the proficiency of monitoring is, once again, a complex cluster of sub-proficiencies, and
forms the tenth in the sequence for effective problem solving.

- If the problem is solved, then this itself is the evaluation of the entire problem solving operations. On the other hand, there may be valuable results or lessons usable for future problem solving situations. If the proposed solution does not solve the problem or only solves it partially, then we have to find out what went wrong. This requires evaluation of what was done. The proficiency of evaluation becomes the last (eleventh) of the sequence of proficiencies required for problem solving. If the solution to the problem is not forthcoming, in spite of all of the above, evaluation in relation to the validity of the processes used, their reliability, their usability and the feedback into a new planning cycle become vital.

- Additional mental operations and proficiencies may include the finding of new or uncommon uses for a given idea or object or process; extending or restating the old, involving refinement, clarification, extension of a previously formulated concept. Frequently, the proficiency of expressing many ideas in rapid succession, or at appropriate times, is called upon when taking action using the above. Further, a number of social and cultural proficiencies may also be needed "to get things done."

- Important though all of the above proficiencies are, nevertheless they are means to an end - such as to design some action to be taken to solve a real-life
problem. They are not ends in themselves. One Western country in fact made these the curriculum itself, so that the above mental proficiencies were learned (or taught) "in the cold". Not surprisingly, shortly after the fanfare about this (means-end mix-up) curriculum died down, little was heard about it anymore.

- The development of the above proficiencies is best done in the course of using them actively for some purpose, such as problem solving in real life, and not as isolated skills (which then, even if acquired, remain essentially non-transferable). But some "drill" in these proficiencies, in the form of games, for example, may well be useful, so that inexperienced learners continue to keep their proficiency levels high, and apply them in a variety of situations. Thereby the proficiencies can become internalised, almost "mental habits", that may be drawn on readily, as and when required.

**Learning to Learn**

Another way of specifying methodological strategies, though indirectly and by implication, is via learning outcomes intended in learning sequences (objectives). This is illustrated below, for the important set of proficiencies required to become enterprising, to become doers - lifelong learning. Their special importance rests on their being powerfully instrumental in practising "being enterprising" in a wide variety of real-life situations. (The objectives below have been derived
1. Awareness of the need for lifelong learning

The learner:

a) develops an increasing awareness of the modern world, the rapidity of changes occurring in all walks of life, the phenomena of expansion and obsolescence of knowledge, and of changes in life-roles as well as physiological conditions at different stages of life;

b) realizes that school education is not the end of education, but a first systematic step towards lifelong learning;

c) develops an understanding of personal responsibility for progress in life by acquiring new knowledge, skills, and attitudes from time to time;

d) realizes the importance of continuing learning during later life for personal growth and that of society.

2. Enhancement of educability

The learner:

a) develops competence to profit from different learning strategies, such as learning under the guidance of a teacher, learning without a teacher, inter-learning in small groups, exchanging teacher-learner roles in different situations, independent
individual learning, etc., and develops flexibility in adapting alternative learning strategies;

b) develops basic learning skills, such as purposeful reading, keen observation, listening comprehension, verbal and non-verbal communication;

c) develops basic intellectual skills such as reasoning, critical thinking, interpretation, application, and methods of inquiry;

d) is able to use a variety of learning media, materials and aids, such as textbooks, work books, general reading books, newspapers, radio, TV, programmed lessons, etc., with ease and discrimination;

e) develops skill in identifying one's learning needs and becomes competent in planning, conducting, and evaluating study.

3. Exposure to broad areas of learning

The learner:

a) is exposed to a number of areas of knowledge and skills that may provide a broad basis and wide choice for the pursuit of further learning;

b) acquires familiarity with the nature and structure of different disciplines of knowledge instead of their contents only;

c) develops mastery over essential elements of individual subjects of study including basic terms and vocabulary of a given subject, major concepts
and principles, etc. rather than a large number of specific details;

d) acquires skill in adopting the tools of learning and specific methods of inquiry in different subjects;

e) begins to identify interest in different aspects of knowledge and activities in relation to general and professional life;

f) makes a personal commitment to progress in physical, intellectual, social, cultural, and professional aspects of life and equips herself adequately with the coping skills and creative abilities required for future growth.

4. Integration of school and out-of-school experiences

The learner:

a) perceives learning in the school and outside the school as interconnected and mutually reinforcing;

b) school learning helps to profit more from the educational opportunities available in the home and the community, and vice versa;

c) as school education advances, becomes increasingly competent to participate in the intellectual, social, and cultural activities in the family; not only gains more from other members of the family, but also contributes more to them;
d) begins to participate in various activities of the neighbourhood and community as school education progresses;

e) develops understanding about oneself and one's life roles in the context of the home, the community, and the world of work.

The implied methodological strategies may include the following:

- The curriculum learning areas should provide a basic framework for adult education, and a wide basis and choice for further education. Tool subjects (such as language and mathematics) are particularly important.

- The nature of the learning areas have to be taken into account in both their selection and organization. Subject areas like science, economics, need frequent updating.

- The learning areas should be designed such that they provide tools for inquiry, and starting points and practice grounds for acquiring "learning to learn" proficiencies, and have real links with educative experiences in the home, the community and the workplace.

- The learning areas should have an appropriate mixture of study, work, and action in life situations regarding solving of real-life problems. The curriculum is a home and societal curriculum, and not merely a school curriculum.
- The learning areas should have an adequate balance of verbal and non-verbal components, including those related to aesthetics.

- At the secondary stage, at least, the curriculum learning areas should represent sufficient flexibility, permitting the learner to plan and conduct learning in self-selected learning area.

- There should be pervasive stress on self-learning; and support to self-reliance and confidence in learner-directed learning. Associated with self-learning is inter-learning/peer-learning/learning from various sources. The combination of the above learning modes would provide proficiencies for changing roles, sometimes as teacher and sometimes as a learner, depending upon circumstances. Both these roles would call for sufficient guided learning, in support of establishing the foundational proficiencies in these respects, and for eradicating specific deficiencies that may be diagnosed through formal or informal evaluation of achievement. Patterns of guided learning must change with the development of maturity and educability of the learner, to fit the particular stage of proficiency in learning to learn reached by the learner. Increasing opportunities for self-directed learning would be integral to the learning processes.

**Evaluation**

Other methodological strategies would need to focus on the various facets and parameters of achievement *evaluation.*
The following may illustrate the kinds of important considerations:

- Performance becomes the important focus of the evaluation. In learning situations, the growth of educability in respect of the composite proficiencies needs also to be evaluated.

- A major emphasis has to be placed upon self-evaluation, consistent with self-directed learning.

- The formative, rather than the "selective" function of evaluation needs special stressing (at least to prevent regressive influences of evaluation on the growth of proficiencies). Such evaluations should enable the learner to identify one's own strengths and weaknesses, and chances of success, thereby motivating a positive attitude towards future learning in the self-directed mode.

- Curriculum evaluation has to become an integral component of the evaluation process so that the entire curriculum design (across subject areas) for developing enterprise proficiencies, and the corresponding products, may be kept in review constantly, and improvements made.

    In the spirit of the above kinds of overarching principles, evaluation instruments may be constructed for component proficiencies in a given action taken under the learner's initiative and volition. The following are examples of such instrument frameworks:
Methodological strategies for enterprise education

CAPABILITY

Initiative

**Definition:** This capability focuses on working independently from the direction of others, making best use of learning opportunities and being responsive to challenge whilst using teachers and others as resources.

**High:** Used learning opportunities to solve challenging problems. Worked with minimum direction while using teachers and others as resources.

**Medium:** Responded to learning opportunities and worked independently with some direction.

**Low:** Worked only with detailed direction from a teacher and/or others.

Demonstrated significantly improved capacity to show initiative and independence.

Self-Management

**Definition:** This capability focuses on organizing effectively for work, setting own goals and priorities, managing time and meeting deadlines.

**High:** Consistently organized work, setting clear, achievable goals and priorities; achieved and managed time effectively.

**Medium:** Organized work effectively on most occasions, setting goals, managing time and meeting deadlines.

**Low:** Rarely set goals or priorities or completed and submitted work by deadlines.

Demonstrated significantly improved capacity to organize work effectively.

Co-operative Work

**Definition:** This capability focuses on co-operative work in a range of situations. It encompasses active participation in organizing with others.

**High:** Jointly set goals and actively participated and worked co-operatively with others in achieving common goals in a range of contexts.

**Medium:** Participated in organising work activities with others to achieve common goals in a range of contexts.

**Low:** Found difficulty in working co-operatively with others to achieve common goals in a range of contexts.

Demonstrated significantly improved capacity to work co-operatively.

(From: The 1992 VCE Student Profile Handbook, Curriculum and Assessment Board, Victoria, Australia)
### Becoming enterprising - technical guidelines

#### CAPABILITY

<table>
<thead>
<tr>
<th>Definition</th>
<th>Description</th>
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<tbody>
<tr>
<td><strong>Adaptability</strong></td>
<td>This capability involves the student responding positively to changing circumstance and achieving the original or modified goals</td>
</tr>
<tr>
<td><strong>High:</strong></td>
<td>Adopted a variety of roles in learning and applying learning, seeking assistance when appropriate and showed ability to adapt by modifying or extending plans and/or routines to meet changing circumstances</td>
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<tr>
<td><strong>Medium:</strong></td>
<td>Adopted a variety of roles in learning and applying learning; seeking assistance in coming to terms with changed circumstances at times appropriately</td>
</tr>
<tr>
<td><strong>Low:</strong></td>
<td>Adapted to new circumstances only with assistance from teachers and/or others</td>
</tr>
<tr>
<td></td>
<td>Demonstrated significantly improved capacity to adapt to changed circumstances</td>
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#### Reflection/Evaluation

<table>
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<tr>
<th>Definition</th>
<th>Description</th>
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<tbody>
<tr>
<td><strong>High:</strong></td>
<td>Recognized strengths and weaknesses in performance and devised strategies for extending work</td>
</tr>
<tr>
<td><strong>Medium:</strong></td>
<td>Paid attention to criticism and made some attempt to improve performance</td>
</tr>
<tr>
<td><strong>Low:</strong></td>
<td>Required direction and assistance to reflect on work and extend learning</td>
</tr>
<tr>
<td></td>
<td>Demonstrated significantly improved capacity to reflect on and evaluate work</td>
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#### Communication

<table>
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<th>Definition</th>
<th>Description</th>
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<tbody>
<tr>
<td><strong>High:</strong></td>
<td>Demonstrated capacity to communicate fluently and purposefully in a range of situations</td>
</tr>
<tr>
<td><strong>Medium:</strong></td>
<td>Demonstrated capacity to communicate purposefully</td>
</tr>
<tr>
<td><strong>Low:</strong></td>
<td>Communicated in limited ways with others</td>
</tr>
<tr>
<td></td>
<td>Demonstrated significantly improved capacity to communicate with others</td>
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Group Work

As a vehicle for enhancing capacities of learners to take initiatives, the methodology of small-group activities has proved to be very useful. A variety of such group learning and action methods are well known. Others, like the following, are effective channels for developing self-volition, though currently less used in the classroom:

- tutorial type, where the "tutor" could be a learner, and may be used for a variety of purposes, including developing knowledge bases or analyses of data or planning. The learner playing the role of tutor takes on leadership tasks in the work of the group;

- leaderless discussion type does not have a specified leader, but permits open consideration of tasks such as those in the first type;

- the above types may converge through a syndicate discussion type, where the results of the above are presented to all learners by learner-spokespersons from all the small groups;

- cross-over group type, where a learner from each group moves to another group and reports on discussions/actions, and is provided a summary of the discussions/actions of the new group the learners join;

- reflective pair type, where learners form pairs to work on the development of individual responses to a common task. They work co-operatively regarding ideas and suggestions, but act independently and individually.
For the affective domain changes, and development of proficiencies, the primary principle involves recognition that affect is a human pre-disposition towards action, based on feelings and emotions. Taking positive action, with cooperative support from peers and others (when necessary), on problems that are emotionally of value to the learner, is ultimately the most powerful source for affective change, which is a complex process through which individuals come to harness their feelings and emotions so that their predispositions to action come to serve the best interests of the individual and of society. So is the role example set by the teacher and other respected persons in the micro-society of the learner.

"Best interests", among other attributes of the above, immediately make the process far from "value neutral". Thus, one of the critical decisions to be made is in regard to what "best interests" represent in the socio-cultural milieu that the learner operates, and the representation may well not mean condoning some of the values embodied in the milieu, (such as in regard to taking action to remove corruption, or exploitation, or discrimination).

Facilitating methods for starting affective development are already being used in the countries (such as role play, simulation games, socio-drama). Other methods, also effective, may include the following:

- mirror-group or group-on-group type, where a group of learners is formed to analyze and report to another group of learners on that group's attitudes and likely behaviours in regard to a stated issue;
- sensitivity group type, that analyses and reports on perceptions of behaviour, roles, values, motives of individual learners in the group. This type does require a skilled and experienced psychologist to guide the sessions.

While the above may initiate affective development, the primary goal is the disposition to take action; to be enterprising. Thus the acquisition of values in this regard is essential. This usually involves values clarification associated with the gradual movement into the new valuing system. Generally this may take several steps, in all of which, though the initiative must still be retained by learners, subtle facilitation by the teacher may be required. Steps like the following have been found to help in the journey towards clarification and internalisation of values:

- comprehension step, when learners identify, list, share information, knowledge, feelings, about a situation or event that is the focus of the valuation;

- relational step, when learners isolate data (of all kinds) and associate these with the situation or event that is the focus of the valuation;

- valuational step, when learners express their preferences and feelings towards the situation or event that is the focus of the valuation;

- reflective step, when learners ponder about, reflect upon the values and feelings they have experienced and revealed in relation to the situation or event that is the focus of the valuation.
The extensive use of these types of small group activities, with the learners taking the initiative, simultaneously empowers the learners in essential social proficiencies, and does this in a scenario scale similar to social learning, such as in the family, which is a natural small group interaction situation. The difference in the latter is in the composition (cross-age and cross-status). Hence proficiency development for social skills may start with small group activities such as the above? but must, as with other proficiencies, move into real-life settings, to enhance the proficiencies to a level usable in life. Nevertheless, the "contrived" small group methodologies can provide initiatory introductions to a variety of important functional parameters, such as types and influences of leadership styles; "codes" of behaviour and "grammar" of interaction that make groups effective; in-group responsibilities that may have conflicts with personal dispositions, yet the former requires priority emphasis; the intricacies of communication to "get things done"; the nature of reaching and implementing decisions for action. No doubt the "facilitator" role of the perceptive teacher becomes of paramount importance in developing the proficiencies, while still maintaining learner initiative as well.

Entry into General Education

Consideration of methodological strategies for Enterprise Education must needs reckon with how and where Enterprise Education enters into general education.

Enterprise education in the context of money making entrepreneurship, has not only the distinct "momentum" advantage of being currently stressed, but also it has very clear
and concrete real-life situations in which to perform action, so that proficiencies may develop in the doing itself. Money earning may act as a positive motivation for the learners, and perhaps for the parents as well, at least in not raising serious objections.

So entrepreneurship may well be an excellent launching pad for the later pervasive entry into all of general education of enterprise attributes, competencies and proficiencies. However, other learning areas must also register opportunities for the development, through action, of "being enterprising".

Learner-driven actions focused upon aspects such as the following, may indicate the types of situations in which enterprise proficiencies may be nurtured in learning areas other than money-making entrepreneurship, using the methodological strategies indicated:

- Functional literature that appears in the environment of the village, the extent of their use, and the modes for increasing the extent of their use for functional purposes.

- Health and sanitation conditions in the environment of the school, causes of negative conditions and actions to improve, and then monitoring the health and sanitation conditions on a regular basis.

- "Paddy Watch" actions, from the time of preparation of the field to harvesting, in respect of plant pests and diseases.
- Rationalisation of time and motion of females in the locality during their household and other tasks, and actions to improve time and motion vs minimum consumption of energy.

- Home garden cultivation where the economic gain is money saved (by not buying), rather than money earned, (by selling).

- Development of community-scale and sub-community scale sports and recreation facilities for various ages.

- Political activation related to a typical national issue, in terms of how it would affect the local people, and actions to counter negative effects, if any.

- The main reason why people go to usurers is the limited capacity of banks and finance companies to provide funding assistance to people who are in immediate need of cash. The multi-product loan portfolios of most banks or financing companies are usually saturated with several types of loans. An ordinary person's loan application does not carry weight with the lending institution, as compared to bigger companies' applications which can guarantee collaterals. In addition to the ordinary person being considered a credit risk, the person's financing requirement is too small for banks' and finance companies' operations. What may be done in the locality about reducing the need to go to usurers?
In addition to the above types, many more action foci that would permit the real-life development, through action by learners, may be readily identified from the local problems and issues that affect the lives of the people in the community.

It should be restated, for emphasis, that "social action", work experiences etc., such as the above, have certainly been initiated by schools over a long period of time. The crucial difference in what is advocated above, is the aspect of learner-driven action where the planning, communication, execution, monitoring, evaluation and replanning, are done by the Reamers themselves, and action takes place in the real life of their environment.

**Adult/Teacher Facilitation**

Invariably, giving learners the opportunity to take action in real life coincides with the growth and development of enterprise proficiencies. But being immature learners and novices in these regards, careful facilitation by adults is essential, done with the primary principle of maintaining the spirit and weightage of learner initiative. This aspect is a vital consideration in regard to methodological strategies for Enterprise Education.

A framework for such facilitation is useful, when developed in keeping with the various unit operations a given action (by learners) may involve. Problem solving is by far the most pervasively effective mode for permitting learner initiative. Taking this as an example, one possible broad unit operational framework which may be used to site and manifest facilitation by adults/teachers, may be as follows:
### Becoming enterprising - technical guidelines

- **Defining the problem:** becoming aware of the problem; making it meaningful in the socio-economic/cultural/personal context; making it manageable in the context of learner initiatives/self-resources/obtainable resources.

- **Developing a tentative solution (or solutions):** considering alternative solutions; selecting among them in terms of the reality of the situation/resources/action possibilities.

- **Testing the tentative solution (or solutions):** identifying the needed evidence/data; collecting the data; evaluating the data; arranging the data for possible use in action; analyzing the data for relationships, trends, sequences, regularities, overarching concepts/principles.
Methodological strategies for enterprise education

- Developing a conclusion: detailed action planning for implementation in its various variables; identification of real life trade-offs; anticipated bottle-necks and ways of overcoming these.

- Applying the conclusions: taking action; monitoring; in-course corrections; crisis management; evaluating result.

The framework above also points to the fact that academic development of the learner is a convergent action while taking initiative and operating in real life develops simultaneously the enterprise proficiencies. Such academic development is most pronounced while the learner applies his/her learning (from the classroom and elsewhere) in new situations, and thereby not only reinforces the learning, but also develops enrichments to the learning through the variety of new nuances that real-life application and taking action always bring.

A major focus of the facilitation by adults/teachers would necessarily be on the consolidation and fortification of the academic growth of the learners, born of the taking of action in real life situations. Thereby enterprise education would contribute most effectively to the academic progress of the learner as well.
“The relationship between practice and knowledge in experiential learning is complex and reflexive. In such a relationship practice is based on theory, which in turn is extracted from and refined by practice. This model is circular, but, when allied to experience, becomes a spiral, leading to an overall improvement in competency and understanding. Consequently theory and practice are intertwined and interdependent; the students’ understanding of both advances together.

For experiential learning to be maximized, the teacher should recognize the unique individuality of each student, the special abilities and needs of each, and the teacher’s responsibility to respond to those needs on an individual basis.

In responding to the needs of each student, the teacher should also be aware of the social and community groupings to which the student and school belong. In doing so the teacher will become aware of an invaluable resource -- the community and its members. For this syllabus to be implemented properly, community members should be invited to contribute in a variety of ways and at a variety of levels.” (From: Mathematics Years 11, 12 Syllabus, Department of Queensland, Australia)

Learning Episodes

The following brief learning episodes illustrate the manifestation of the development of enterprise proficiencies in learners (of becoming doers), in various content scenarios. In all of them, the primary methodological strategy is to provide as many opportunities as possible for the learners to take initiatives, and to plan and execute actions in regard to the
particular problem involved. Some of the episodes incorporate only a few of the enterprise proficiencies, and that in essentially "contrived", simulated, in-classroom situations.

Language/Social Studies (Grade 3)

**Giving Life to the Past.** The activity involves Grade 3 learners (in groups or pairs) collecting folk songs (e.g., ones sung to children; ones sung during harvesting) from their mothers and their grandmothers, recording them, memorizing them, and presenting them to their class/school/community.

The organisation and action plans are developed by the children themselves, with minimum facilitation by adults/teachers. The actions are undertaken through the learners' initiative.

Post-collection learning may involve classification of the songs in terms of themes/content; whether the sources are mothers or grandmothers; vocabulary, syntax and grammar; illustrating the themes of the songs through pictures/dramatic episodes.

Similar activities may involve such aspects of everyday life as harvesting ceremonies; ceremonies at the birth, naming, first introduction to learning of a child; ceremonies before digging a well or ploughing a field or building a house.
Science (Grade 4)

Producing Activity Cards. The basic activity involves Grade 4 learners developing "Science Activity Cards" (brief schemes of work) for learners in Grade 3. For this purpose the Grade 4 learners have to undertake a variety of actions. To develop the Activity Cards, three steps are involved, namely: identifying the focus of the activity; trying out of the activity (by the Grade 4 authors); and development of the Activity Cards (by the Grade 4 authors).

Examples of activities chosen by the Grade 4 learners themselves are: How can we make ice cubes last longer? What path does an air-filled toy balloon take when released?

Teacher/adult facilitation involves prompt questions, such as those related to operational clarification of the activity/problem; what action options are available and why; any controls; questions to facilitate inquiry; what further questions to encourage further self-inquiry; why do we think what happened, happened; how much instructions in the Activity Card to provide for facilitation, but not direction.

Learner initiative, volition, responsibility, form the basis of this learning activity. When Grade 3 learners use the Activity Cards, Grade 4 learners act as their facilitators.

Moral/Ethics Education (Grades 6-10)

The Value of Sharing. We are familiar with the following folk story: Three village folk who had never stepped outside their poverty stricken village, set out to a city in search
of work. By the time they reached the jungle on the outskirts of the city, night had fallen, and the moon rose. One of them said, "Look, the moon has come with us! Now our village must be in total darkness!" The second one said, "It is very selfish of us to drag the moon along with us." And the third said, "Yes. We must go back to our village." And taking the moon with them, they returned to their village, and poverty.

What are your reactions to this story? What values are seen in the story. Are sharing and reducing greed important values in our rural culture?

Following on this discussion, during which the learners are encouraged to take the initiative in expressing opinions, further discussions may focus upon what "traditional" means, leading to investigating whether these values were really traditional in practice, or merely said to be so because they seemed to coincide with a certain religious ethos.

If the values were traditional then they would have been practised by parents and grandparents for many years.
How could this be investigated?

This would lead to various suggestions by the learners, of investigating the issue (for example, collecting: (a) real incidents from parents and grandparents and other adults and elders in the village, in which sharing and reduction of greed were visible, going back to time when the elders were young; (b) and real incidents from their lives where non-sharing and greed were "frowned upon" or chastised by the community).
The planning and organizing for the collection is done by the learners themselves. The data so collected are discussed in the light of: (a) sharing/reduction of greed being a traditional value in rural society; (b) the benefits forthcoming to the receiver and to the giver by practicing such values; (c) the benefits forthcoming to the community by practising such values; (d) the support from traditional religious teachings for valuing such values; (e) the kinds of sharing that was done, e.g., financial, food, clothing, shelter, time, labour, joy, sorrow.

The final stage of the learning sequence would involve ways of reinforcing and furthering the practice of these values (for example: (a) identifying need situations/people in need in the village that may be helped through sharing; (b) what particular aspects may be shared; (c) how this may be done across the village.

The action component of organizing for sharing to meet identified needs is the climax of the learning sequence, and the operations are planned, organized, executed by the learners themselves, with adult/teacher facilitation brought in only as and when needed.

Health/Nutrition (Grade 7)

**Nutritional Intake by the Community.** The activity may start with a discussion on the usual posters/leaflets distributed by health authorities, such as those which contain pictures and instructions about body building foods (protein-rich foods); energy foods (starch and fat-rich foods); regulating foods (such as vegetables and fruits).
The first issue is whether individual households have sufficient quantities of the different foods recommended in the posters/leaflets to supply the family needs. Recommendations in these posters/leaflets often indicate quantities such as the following:

**Daily Serving**

**Protein-rich foods**: Fish - 3 medium size; or meat 3 matchbox six; eggs 2-4 pieces (per week).

**Starch/fat-rich foods**: 4 cups rice; 6 level teaspoon equivalent fat.

**Vegetables/fruit**: 1 cup cooked vegetables; 3/4 cup green vegetables, cooked; Vitamin C rich fruits 1 serving.

The activity by the learners involves surveying homes in the community to determine which of these foods are eaten; in what quantities are some of them not eaten due to certain beliefs? The organisation and action plans are developed by the learners themselves. Only triggering facilitation is done by adults/teachers.

The results of the survey and the profile of the nutritional intake are likely to focus upon the fact that many of the recommended foods are unavailable, and if available, not in the quantities recommended.

This would raise a second issue as to whether there are substitutes for the specific recommendations, which even if not
100 per cent as effective, may still improve the nutritional intake.

This would lead to a number of activities by children, including finding out from resource persons/documents, alternatives to the recommendations (such as corn for rice or soya milk for cows milk or peanuts, gram, beans and lentils for meat). Alternative options would also include combinations of these to make up the quantitative needs. Again, the initiatives are to be taken by the learners, with the adults/teachers providing facilitation through making the resource base available.

The further action component in regard to this issue would relate to the learners organising and planning for action to convince households to use alternatives or substitutes, and taking action in this regard. Other actions would involve the learners taking initiative to establish back gardens in the households so that several of the substitutes may be grown at home, eliminating the need to spend money for these.

An extension of taking action would be to investigate further "food fallacies" and organise and plan action to inform the households about these, and take action accordingly.

Science (Grade 7)

Can Energy Use and Pollution be Reduced Through Changes in Vehicle Use (Urban Situation)

This activity is one of a number undertaken to solve the above problem, and take action in society in regard to the problem. The activity represents a small sampling of one type,
in which the learners are also the chief investigators and actors, most of the action being taken through the initiative and volition of the learners themselves. Elders (teachers included) may be referred to as and when required.

The activity also represents the importance of adequate investigation and data collection before action may be planned. In particular, the attributes of the problem situation have to be known accurately. The planning is done in learner groups. The following depicts some of the kinds of diverse actions that need to be thought about, planned for, and acted upon.

<table>
<thead>
<tr>
<th>Focus</th>
<th>Procedures decided on by learners</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Which vehicles used advantageously?</td>
<td>Check at 4-lane intersection to observe traffic. Stand at corner in two, one learner to observe, one to record.</td>
</tr>
<tr>
<td>- When to observe?</td>
<td>During morning and evening rush hour, and in between. Observe on different days of the week.</td>
</tr>
<tr>
<td>- How to pre-organize the mass of data/ tabulate obtained data?</td>
<td>Develop a coding system that reflects type of vehicle, and number of passengers. (Eg. C/2 = Car/2 passengers). Tabulate data 3 times a day (Eg. 07.00 - 08.00 a.m.; 22.00 - 12.00 hrs.; 17.00 - 18.00 hrs.)</td>
</tr>
</tbody>
</table>
Obtain total number of cars etc. and total number of passengers in each case of type of vehicle (Eg. cars, jeeps, buses, mini-buses).

- **What to do with the data?**
  Establish the trend regarding the number of passengers in relation to time of day; days in the week, for each vehicle type.

  Compare across vehicle types. Any additional information required?

- **What further detailed question?**
  Which vehicle used advantageously? What is the evidence? What further information to estimate total cost per trip? What is now a functionally refined definition of "advantageous use"?

  What further data required to compare energy expenditure across types of transport over the same distance? (Eg. Unit energy cost per traveller at rush hour; at other times).
- What recommendation? What vehicles should pass through
  the busy crossing at rush hour?
- What data to support the
  recommendation? To whom
  should this be presented? What
  kinds of presentation?

Social Studies (Grade 7)

Mapping. The learning sequence consists of four sections. Prior to this sequence mapping of the classroom, the school and the major landmarks of the school environment/village would have been completed, with the learners participating actively in developing the maps themselves. Relevant symbols used in map work would also have been introduced (such as for waterways, bridges, roads, forests, fields). Distances (and scale of measurement) would also have been used in the earlier sequences.

Section 1. In this section, three portions of the school's environment in the village would be chosen for detailed mapping, with three groups of learners (2-3 each) undertaking the detailed mapping of one of the portions, another three groups a second portion, and a third set of three groups the third portion. Guidance is provided through sets of questions requiring different levels of mental operations, such as the following:

- Simple matching (eg. symbol that represents water, road, bridge).
- Use of rulers and dividers, measurement, scale (e.g., drawing of the map and "how far do you have to walk starting at the house of the Headman at the end of the main path and travel east to the temple?").

- Interpretative skills (what kinds of things would you see when walking from A to B and which of these are mapped and which not?) or directional concepts (e.g., indicating how to go to the health clinic).

Each group produces their own map of the portion of the environment assigned to them, and the results are compared, justified and improved.

**Section II.** In this sequence the maps produced of one portion of the environment are exchanged among the groups that produced maps of other portions, and the originators of the maps frame questions that the receivers of the maps have to answer verbally as well as physically. The questions follow a format such as above.

**Section III.** In this sequence the learners, still working in groups, are given a set of descriptions from which they have to draw a map, for example as cartographers preparing a map of a newly discovered island. The description may include the following:

- There are two hills on the island, the most northerly being 100 m high and the other 400 m high.
- There is a large bay on the southern coast and it has a narrow neck with cliffs rising to 300 m on either side of the opening.

- There is heavy bush on 40 per cent of the island surface towards the S/West.

The descriptions contain some quantitative data but insufficient to draw a scale map. Learners are expected to ask for further data (both quantitative and verbal), as required, to draw the map. The learners can build their own ideas around a required set of conditions provided in the descriptions. A class discussion highlights the different approaches of the groups and justifications for these approaches.

The three sequences provide opportunities for the learners to take initiatives, solve problems co-operatively, discipline themselves in a variety of communication modes, accept criticism constructively, and many other proficiencies of enterprise education, while simultaneously being provided excellent hands-on opportunities for learning their subject-matter content.

Section IV. Following on the above, longer-term work programmes may be developed, to assist in contributing to the quality of life of the community, such as eradication of stagnant water, easiest path to fetch water, measures to prevent soil erosion, in which the planning, communicating, executing, monitoring, evaluating actions would stem from learner initiatives, culminating in actual action in the community regarding the selected aspect for improving the quality of life.
The Origins and Use of Words in Folk Language (Rural Sri Lanka). Sanskrit and Pali words are found commonly in the ordinary language of rural Sinhala folk. The most common source for these words is the Buddhist temple. Yet, are the original meanings as implied in the Buddhist contexts, retained in the use of these words in ordinary speech? Or are other nuances, and even other meanings, connoted?

For example, two very significant Pali words are anicca (impermanence), dukkha (sorrow) Do phrases like ane anicce, aniccan dukkan imply the Pali meanings, or are they only exclamatory phrases rather than commentaries on the nature of life? Araham is another Pali word, (which means exalted). Yet the expression "ova mata arahan" means "I am fed up with them!" Pav, (sin or unmeritorious action), is very frequently used. But "ane pav!" (Oh! what a pity/sin!) does not necessarily have the original connotation of pav. The Sanskrit words loka (mundane) and lokottara (supra-mundane) have taken on indigenous flavour by adding "ya" (fellow) to them as lokaya and lokottar-qya given the meaning of being extremely crafty, and unscrupulous as well.

As group work, over the next month, list as many of the words and expressions spoken by ordinary people in life situations you (and your group) can recognise as having Buddhist origins. What meanings did these have in the ordinary speech of those who used these words? In what contexts were these used? What were their original meanings in Buddhism? Whom would you consult with in clarifying the
meanings in common usage and the original meanings of the words you have identified? What were their responses?

Do you have sufficient evidence to conclude that the Sinhala peasant, though learning Buddhist vocabulary at the temple, has given an intrinsically indigenous colouration to the vocabulary? If not, what further evidence would you seek? From whom? What were their responses?

If you have sufficient evidence for the above hypothesis, how would you go about finding out how this happened and why? What are your findings?

Do you think such modifications of meaning from the original is good for the Sinhala language? With whom else would you discuss this issue? What were the responses? What is your own conclusion?

Environment Science grade 9/10)

Pollution. The teacher noticed that Sarath was scratching all over his body. She went over to him and was surprised to see that he had a rash. She asked him what caused the rash, and he did not know. He thought it might be something he had eaten. Some pupils in the class thought that he had brushed against a particular tree. Others thought it was because Sarath had been swimming the evening before, in the river.

What were the evidences for each of these explanations?

Sarath was taken to hospital for treatment. The doctor had said that Sarath had a reaction to chemicals.
Becoming enterprising - technical guidelines

Where could Sarath have come in contact with the chemical?

How could we find out if the rash was produced from chemicals in the river water?

Following this discussion, the movement would be to take action to find out what pollutants, if any, were in the river, including a complete planning of the actions to be taken, when, by whom, where, whom to talk to, what to say, where to do the analysis, what other observations to make of the river and its environment (such as possible pollution sources).

Civics/Language/Moral Education (Grades 9/10)

Civic Rights and Responsibilities. A country has promulgated a series of regulations prescribing heavy penalties for persons found guilty of sedition and incitement. The country has also defined a number of items as being intrinsically within the human rights of all citizens, as well as a range of civic responsibilities.

The new regulations include the following:

Any person who by words, whether spoken or written, or by signs, or visible representations, or by conduct, or by any other act:

- brings or attempts to bring the government into hatred or contempt, or incites or attempts to incite feelings of disaffection to, or hatred or contempt of the government or the constitution; or incites or attempts to incite any section, class or group of the population, to procure other than by lawful means, the alteration of any matter by law established; or raises or creates or attempts to raise or create discontent or disaffection among them; or
promotes or attempts to promote feelings of hostility between different sections, classes or groups of the population; or incites or attempts to incite them to use any form of physical force, breaches of the peace, disobedience of the law or obstruction of the execution of the law, for the purpose of inducing the parliament or the government to alter any matter by law established; or incites or attempts to incite them to do or omit to do any act or thing which constitutes a breach of any emergency regulation, shall be guilty of an offence and punished with rigorous imprisonment and may also be liable to a fine.

The classroom lessons would involve the relative relationship between civic responsibilities and rights and the new legal restrictions within which such rights and responsibilities would now have to operate.

It is also the civic responsibility of the youth of the country, not only to "practise" the civic rights and responsibilities themselves, but also to ensure that people in their environments also are made aware of and empowered, to themselves "practise" these rights and responsibilities. This would be essential training for future roles of the youth as responsible adults dedicated to the ideals of democracy.

The follow-up tasks of the learners involve preparing for, planning, executing and evaluating actions so that the general public in their environments is provided opportunities for such empowerment.

The follow-up tasks would include aspects such as the following:
- Interpretation of key words in the promulgated regulations (such as "bring into hatred, contempt etc.", the government), including whether righteous indignation by responsible citizens about (say) blatant corruption and robbery of national wealth and resources may be considered "hate and contempt"; and advocacy to vote against such individuals at the next elections is considered incitement.

- Moral issues as to whether (say) disobedience of laws that contradict fundamental rights of citizens, collective action to change such laws or ensure that those (say) guilty of national economic exploitation are dealt with by the law, are aspects responsible citizens should take action about in the interest of safeguarding the nation's integrity as well as individual rights of citizens.

- Strategic planning for action regarding the above, manifesting civic responsibilities including aspects such as whom to contact; how; when; what kinds of presentations; what kinds of follow-up; what kinds of evaluation of results; and recognition of risks involved and measures to minimize these risks while still manifesting civic responsibilities in required action, and mobilizing the support of elders in the patriotic task of safeguarding human rights and national integrity.
The initiative for the above would rest primarily on the learners, with elders acting as facilitators and reference sources as and when required by the learners.

Science (Grade 10)

Danny's Investigation

Origin of Investigation. Danny's sister had been complaining of bleeding and swelling of gums. He brought her to the dentist who gave her some medication. She was further advised to eat lots of fruits and vegetables. She lacks Vitamin C in her diet. Danny knew that his sister does not go much for vegetables, but she likes raw tomatoes. He thought that if he knew how much Vitamin C there is in tomatoes he could help solve his sister's problem.

Literature Search. Danny read all about Vitamin C (ascorbic acid) and its effects on the human body. Biochemistry textbooks provided him with considerable information: the human body cannot synthesize Vitamin C; an average Filipino requires 75 mg of Vitamin C per day; Vitamin C is easily lost in washing and upon cooking; Vitamin C is also destroyed when subjected to oxidation converting ascorbic acid to a biologically inactive form.

Further reading informed him that many environmental factors have direct influence on the growth of fruits and vegetables. Tomatoes grown under sunlight contain more

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trend in Vitamin C from sunrise to noontime and decreasing towards sunset. Furthermore, fruits gathered during the dry season were found to have considerably higher Vitamin C content than those gathered during the wet season.

He also read on the methods of determining the Vitamin C content and decided that a calorimetric determination is the most practical with his limited resources.

*Definition of Problem.* Danny hypothesized that if tomatoes are grown in the same environmental conditions, then the Vitamin C content of the fruits even at different stages of maturity must be the same. He decided to check on this.

*Experimental Design.* Danny asked permission from his school to conduct his research at the experimental station. The wet season had just started, so he had to grow his seedlings in the greenhouse to protect them from rain.

He transplanted eighteen healthy tomato seedling of the Manapal variety into individual pots of the same size, containing the same amount and kind of soil. The pots were numbered 1-18. Six numbers at a time were assigned in one plot. There were 3 experimental plots in all.

A week after transplanting, a mixture of organic and inorganic fertilizer was supplied to each pot. Fertilization was repeated at the flowering stage of the plant. All gardening and maintenance practices such as watering of the plants, weeding, and pest control were observed equally among the plants.
Meanwhile, he had to prepare the chemicals needed for the Vitamin C determination. He also asked some help from his teacher to improve his titration techniques.

As soon as there were four stages of fruit maturity observed, fruit samples were gathered from the plants early in the morning and were immediately analyzed for Vitamin C to minimize exposure to atmospheric oxygen which may cause its oxidation to the biologically inactive form.

Titration experiments were done using the procedure of Strong & Koch (1974) involving 2, 6 dichlorophenolindophenol as the dye. The calculation used was based on the following formula:

\[
\text{mg Vit. C equal} \frac{\text{mg Vit. C}}{\text{mg}} = \frac{\text{mL dye used}}{\text{mL}} \times \frac{1}{\text{mL dye}} \times \frac{1}{\text{mL of the extract}} \times 100
\]

The results were statistically analysed using analysis of variance (ANOVA) for a completely randomized design.
## Results of the Experiment

### Data No. 1

<table>
<thead>
<tr>
<th>Stage of Fruit Maturity</th>
<th>I</th>
<th>II</th>
<th>III</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mature, green</td>
<td>12.13</td>
<td>11.18</td>
<td>12.23</td>
<td>11.85</td>
</tr>
<tr>
<td>Slightly ripe, orange</td>
<td>16.26</td>
<td>14.48</td>
<td>16.90</td>
<td>15.88</td>
</tr>
<tr>
<td>Ripe, orange and firm</td>
<td>19.50</td>
<td>20.00</td>
<td>19.63</td>
<td>19.71</td>
</tr>
<tr>
<td>Overripe, red and soft</td>
<td>14.40</td>
<td>13.88</td>
<td>14.15</td>
<td>14.14</td>
</tr>
</tbody>
</table>

*Statistically significant*

## Results of the Supplementary Experiments

### Data No. 2

<table>
<thead>
<tr>
<th>Ripening Method</th>
<th>I</th>
<th>II</th>
<th>III</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vine-ripened</td>
<td>20.67</td>
<td>20.46</td>
<td>19.81</td>
<td>20.31</td>
</tr>
<tr>
<td>Off-the vine (away from direct sunlight)</td>
<td>11.60</td>
<td>10.65</td>
<td>12.22</td>
<td>11.51</td>
</tr>
<tr>
<td>Off-the vine (under direct sunlight)</td>
<td>21.25</td>
<td>18.72</td>
<td>18.43</td>
<td>19.47</td>
</tr>
<tr>
<td>Mature green</td>
<td>12.13</td>
<td>12.46</td>
<td>12.52</td>
<td>12.37</td>
</tr>
</tbody>
</table>

*Statistically significant*
Data No. 3

Reporting Results

Danny presented his findings to his teacher who was enthusiastic about it and asked Danny to share his results with the class. In the presentation Danny emphasised the processes by which his findings were discovered. He mentioned some of the advantages of such activities for other children who have a
problem similar to that of his sister, and gave some suggestions for their mothers too.

**Going on Further**

Danny was pleased that his project worked out so well. Yet he was surprised that his work raised many more questions than it answered. Some questions were:

1. Would this observation hold true for other fruits and vegetables?

2. Will preservation help in the stability of Vitamin C in processed or canned tomato fruits?

3. Why would fruits at different stages of maturity contain variable Vitamin C when they were grown under the same environmental conditions? What happens during the ripening process?

**Constraints in the Generation of Enterprise Proficiencies**

It should be noted that, typically in the countries that have included the vital enterprise competencies in general education, they are reflected in the aims and objectives of all subject areas, thereby initiating, reinforcing and maintaining a "mind set" in this regard in the learners, over a long time period, and in a variety of learning situations of quite different attributes, since the learning situations arise out of different subject matter content areas. The development of such proficiencies is not restricted to the domain of one or few learning areas (such as science or work education).

Nevertheless, even in the science areas, where the development of such proficiencies first arose, practical
difficulties have hindered progress in many countries in the region. Among the many real factors that have inhibited progress are the following:

- In the time allocated to a given subject area, it is very difficult to cover "prescribed" content using learner-driven or even learner-centred methodologies that generate such proficiencies. Time management in the school has to be rethought in a radically different manner, if intervention in real life is to be utilized. Resource mobilisation outside the school for intervention activities may not be readily available, especially in disadvantaged environments.

- Paucity of content knowledge in the teachers or facilitators make them defensive and unwilling to participate in open-ended discussion, which would stimulate the development of the proficiencies. To be a co-learner with the pupils requires, among other attributes, a stable and substantial base of knowledge in the teacher.

- Even as a co-worker and learner with the pupils, the school environment may be lacking in reference materials for learning to learn. What materials are available may, frequently, be in kitchen recipe form (such as in the materials for routine agricultural extension).

- A significant proportion of the pupils may not know where to begin, what questions to ask, how to proceed having asked the questions, what to include in syntheses or what criteria to use in analyses. The
disparities between the "bright pupils" and the others could increase, with the less able still remaining as passive as in a "lecture" situation, but with even greater chances of confusion and frustration about the relatively "untidy" sequencing in open-ended inquiry, as compared to the relatively linear learning development of a lecture or a "teacher telling" sequence.

- The socio-cultural milieu of the school can inhibit the practice of the new methodologies, especially when the social norm is that of the "worshipful" teacher-authority and purveyor of knowledge. Asking questions may well be interpreted as questioning authority, as showing disrespect or as being impolite. Asking questions may be equated to questioning the *bona fides* of the teacher. With such cultural interpretations, the effects of the new methodologies could be traumatic for both the pupils and the teacher, in the school, and outside, in the community. The teacher, steeped in such a socio-cultural morass, would find it very difficult to internalise and value the new pupil-centred methodologies, and even less the learner-driven strategies. The teacher may not comprehend them, since the only "meaningful", "functional" concept regarding the education transaction that the teacher has, is "teacher telling". Parental objections to actions involving what they consider "non-academic" could become serious in the context of the high
competitiveness for entry into academic and other high prestige streams.

- Taking action regarding recognized problems, in real-life situations in the community, can involve numerous obstacles, including those in the political domain.

Even when reasonable progress has been made in introducing the development of such proficiencies into the learning situation, in some countries, the scope of the proficiencies themselves have been defined in a narrow and "laboratory" fashion, essentially in the contrived cocoon of the classroom. For example: "understanding conditions and changes in one's community, and being able to suggest ways of improving the community", relates to the development of the above proficiencies, but carries no commitment for action, and hence no development of proficiencies for action in real-life situations.

The pedagogical implications of achieving these proficiencies, to become enterprising persons, are well known. They have to be established beyond the level of competence, and at the level of proficiency in real life. Such a development is unlikely to be "taught", but "learned" by doing, i.e., by direct action by the learners in real life. Even simulations of real-life situations have been found to be weak pedagogical devices for the purpose if used alone, and without direct action. Transfer to real life from purely academic situations is, as expected, low.
A few countries, at least, in the region, have started such action, in the area of money-making enterprising, for example in the mini-business companies that are initiated, and sustained by the learners themselves. Such action-oriented learning is becoming more wide-spread in non-formal education than in formal education. But the generation of action situations in a non-entrepreneurship context has remained constrained, even though recognized as important.

What the above points to is that an isolated school or teacher will find it very difficult to undertake learning/teaching situations that would really support the achievement of enterprise proficiencies, even if innovative learning sequences were available. A total commitment of the education system, from policy through to teacher training, design of learning/teaching and evaluation sequences and materials, and reorganization and management operations, are holistically essential, if successful implementation of a programme for developing enterprise proficiencies is to take place.

The Teacher Factor

Learner-driven learning, encouraging learner initiatives, for taking action, problem solving, inter- and group learning and action, and all the other significant characteristic methodologies of Enterprise Education, require corresponding changes in the behaviour of teachers.

In particular, unless the teacher sets an example by her own natural behaviour, of being enterprising, it is most unlikely that the teacher will be able to "infect" learners with enthusiasm, and inspire them to proceed towards acquiring the
kinds of enterprise proficiencies indicated earlier. On the other hand, the visible and consistently enterprising teacher, manifesting these attributes in many school and life situations, provides learners with real-live examples, and a believable role model, of what "being enterprising" means. Similarly the teacher has to change traditional roles radically, to become a facilitator, an animator, and a co-learner. Many other changes in the knowledge, skills and attitudes of the teacher would be essential for learners to be helped in achieving enterprise proficiencies.

The policies may be adequate. The learning sequences may be well designed. The management authorization may be complete. But successful implementation of educational interventions for the development of enterprise proficiencies will depend critically on the teacher/facilitator. This is a "fact of life" recognized in the implementation of all previous innovations in the learning situations in countries of the region and elsewhere.

The lessons from such past interventions stress several principles in this regard. For example, when the "inquiry method" was introduced into the learning situations in the countries, only teaching teachers about inquiry, proved to be totally ineffective. On the other hand, when the teacher training incorporated the teachers having to practise the inquiry method themselves, in situations that were compatible with "adult" status (and not in mirror images of situations that were to be met by the young learners), the results were positive. This was particularly so with teachers who came from
"conservative", "orthodox" or "traditional teacher-telling" backgrounds.

Even then, attempts to orient teachers about, and enhance their competencies in, new methodologies, have been unsuccessful, partly because the expected jump into the new methodologies, from ones whose parameters, assumptions, and philosophies of education, are diametrically opposite, has been too large for the teacher, in terms of concept internalising, as well as in terms of the load of acquiring new proficiencies. This is specially so when the new proficiencies are thought to be inimical to the socio-cultural milieu, and which extinguish, simultaneously, old, well-established ones that are compatible with, and have the support of, the milieu.

On the other hand, the pragmatic strategy of moving towards the idealised situation of the new methodologies via a series of successive approximations that range from teacher-centred to pupil-oriented, might provide much less strenuous jumps, and a lower gradient of acquisition of the new proficiencies for the teacher.

Since aspects like constructive "facilitation" by the teacher are vital for the development of the required proficiencies in learner-driven learning situations and intervention actions in real life, a realistic teacher training programme becomes another sine qua non for success.

As an example, the strategy of successive approximations towards the ideal of "wise facilitation" may be illustrated by the following sequence, which starts with the "teacher telling" mode, and very gradually increases the learner
Methodological strategies for enterprise education

driven attributes, while simultaneously increasing the facilitating mode. Such a sequence may form the design framework for teacher training:

Sequence Towards Empowerment for Problem Solving:

- The teacher gives the pupils knowledge and tests the recall of this knowledge.

- The teacher gives the pupils knowledge and poses a problem. The pupils use their memory of knowledge to solve the problem. The teacher tests the ability to recall knowledge and solve the teacher-posed problem.

- The teacher gives the pupils knowledge and shows where more knowledge may be obtained by the pupils. The teacher poses a problem that requires the use of both the teacher-given knowledge and knowledge from sources the teacher indicated for the solution of the problem. The pupils solve the problem with the teacher's help. The teacher evaluates the relevant abilities.

- The teacher poses a problem and assists the pupils in finding the necessary knowledge to solve the problem. The pupils solve the problem on their own. The teacher evaluates the relevant abilities.

- The teacher identifies a problem situation and helps pupils define the problem and seek knowledge relevant to solving the problem. The teacher and the pupils jointly evaluate the required abilities.
- The teacher provides experiences that permit pupils to identify a problem situation. The pupils define the problem and find out the knowledge required to solve the problem, using the teacher also as one resource for the purpose. The pupils solve the problem on their own. The evaluation of abilities is joint (teacher/pupils) and continuous.

- The pupils analyze and synthesize experiences from real life and from contrived situations (such as at school) for problem situations; define the problem; seek relevant knowledge from a variety of sources including the teacher; and solve the problem. The evaluation is predominantly self-evaluation by pupils, with the results of evaluation shared with the teacher.

Using the principle of the teachers in training not being merely preached to, but *practising* the new methodologies, the teacher educators *themselves* would need to follow the above sequence in their teacher training episodes.

Using such a sequence, a number of learning episodes may be developed, starting with ones which incorporate a few selected enterprise competencies to be developed in essentially "contrived", simulated, in-classroom discussion situations, with group work.

Several simulated situations may be taken up, including those that involve money-making entrepreneurship. This would be followed by moving into situations that are *real*, and
again across various kinds of situations (including entrepreneurial events).

While direct action in real life is the main learning vehicle for the development of the enterprise competencies and proficiencies, as with the establishment of other affective domain competencies, contrived learning episodes are also required for specific attributes. This applies to both young learners and teachers in training (under which this aspect is included here).

An example of such a capsulized contrived learning session, (as small group activities), is as follows:

**SELF WORTH**

*Interview each other for about 15 minutes to find out what skills and strengths your partner has, which would make him/her a good manager (or community leader or etc.) Then, explain to the group why your partner would make a good manager (or ... or ...). This should include your own observations about the person. Then on the basis of your interview, make notes for a recommendation for your partner. Include in this, a record of the person’s achievements, skills, strengths and future capacities.*

(From Use Your Initiative, Australian Commission for the Future, Government Publishing Science, Canberra)

Many such affective domain "training" episodes are available already in countries, such as from the areas of management training; sensitivity training; values clarification.
Similarly, there are specific cognitive skills too that may be developed in contrived "training" episodes, prior to their utilisation in field action.

For example, several training episodes are available in many countries, for the component cognitive competencies for learner-managed learning, which would include sub-competencies of objective self-observation; goal setting; learning techniques suited to particular learning styles; assessment of self-capacities; action plan design; evaluation of progress.

Evaluation of learner achievement is another aspect that must require critical attention by the teacher/facilitator. The more real-life action focused, the learning sequences are, the less the usual "easily marked" paper-and-pencil assessments are likely to be valid. Observational assessments must necessarily increase in importance, in corresponding proportion, particularly those on actions being taken by the learners.

Associated with each of the above new roles and functions of the teacher/facilitator, must necessarily include a wide range of "secondary" knowledge and skills which would need to be acquired by the teacher/facilitator "on the run", as the learner-driven learning situations demand. Learning to learn proficiencies would be still other sine-qua-nons for the teacher/facilitator.

Just as the teacher/facilitator has to "practise what she preaches", so must the teacher educators/trainers in their development of proficiencies in teacher trainees. As with the
young school pupils, so with teachers-in-training, a large number of critical enterprise proficiencies embody integrally components of the affective domain. These, most frequently, are very difficult to be taught, but are best caught from teacher educators/trainers practising such behaviours.

**Direction of Movement in Quality Improvement**

Over the last two decades in particular, progress in education may be considered as development in at least three dimensions:

i) purposes of the individual subject matter areas;

ii) the child as learner;

iii) generating enterprising citizens.

Three convergent dimensions may be further elaborated as:

i) the purposes of individual subject matter areas, (be they science, social studies, language or any other), progressing from merely knowledge to applications; to problem solving; to contributing to improving the quality of life. This progress reflects the extent to which human action, values, personal development, and quality of life, have been admitted as intrinsic and essential components of the school curricula, in the last few decades, in many countries in the region.

Simultaneously, the quality of life covers not only material well-being, (such as economic development, nutrition, health, shelter, clothing, environment), but also personal well-being, and that
in a socio-cultural milieu. It is the extent to which individuals realize their human rights, their humaneness, their self-worth, their position in society as cultured, autonomous citizens. Thus, it has also ethical, moral, political, aesthetic and spiritual components.

The quality of life aspect reflects the power that individuals have in their lives, through their abilities to think, plan, do, respect themselves, communicate, feel, and participate fully in the life of the community and of the nation. It concerns the human being both as an individual person whose life is unique, and a social person, whose life is shared for the good of others. At the community (and national) level, the quality of life also raises issues of social justice and human rights, and the accessibility of these in society.

ii) the child as learner reflects the growth of thinking and understanding about the learning child. The model of the empty vessel into which knowledge is to be poured, has been discredited. The vessel is not empty. It is not a vessel at all, but a complex, self-directed interactive process. The child as the passive receiver of knowledge has been surpassed, and then progress took the path of learning through doing; to learning in the context of the child's purposes in the child's environment. This latter extends "doing", to doing in real-life situations, with the purpose of solving problems to improve the quality of life.
iii) the generation of enterprising citizens manifests itself as generating the child as a doer under his/her own volition, own incentive, own control. It sets out a pervasive complex of proficiencies which apply to, and in, all subject matter areas, whose culminating purpose is contributing to improving the quality of life; and to the pedagogies for the learning child learning in, and acting on, the environment of the child, to improve the quality of life. The bundle of proficiencies may be summarized with the term "enterprise proficiencies".

The above may be depicted diagrammatically as follow:
The above defines the "space" into which curriculum units may be placed, according to their treatment of the purposes of subject matter areas, the learning child, and the goal of generating enterprising citizens in the nation.

The types of methodologies indicated above are but a sampling of ones that may be utilized to assist young learners in becoming "pugnacious", not in the form of physically aggressive combativeness, but in the sense of a general unwillingness to be beaten by a difficulty or problem. The facilitation (adult/teacher) arouses this kind of pugnacious excitement, and stimulates its growth through supportive learning experiences. Enterprise education is a means of providing learners with a sense of efficacy. Enterprise education, through any subject matter area, develops the conviction in learners that they have the proficiencies, and can develop further these proficiencies, to view their environment (physical, social, political, economic, aesthetic, cultural) critically, to control their own destiny and to influence decisions affecting them.

With this purpose in mind, the usual "teacher telling" modes are very obviously inadequate. So are even such "modern" methodologies as the "inquiry approach", unless these are linked to learners taking action in real life to solve problems they themselves have identified, under their own initiative and volition.
This direction of movement in the quality improvement of education in many countries in the region, may be placed in a historical growth and development pattern seen manifested in curricula reforms over the last decades, as follows:

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Learning for Knowing (1960s)</th>
<th>Learning for Applying (1970s)</th>
<th>Learning for Being/Becoming 1980s/1990s</th>
</tr>
</thead>
<tbody>
<tr>
<td>Philosophy</td>
<td>Positivism</td>
<td>Utilitarianism</td>
<td>Constructivism</td>
</tr>
<tr>
<td>Focus</td>
<td>What do I KNOW?</td>
<td>What can I DO?</td>
<td>Who I am BECOMING?</td>
</tr>
<tr>
<td>Knowledge produced</td>
<td>Propositional</td>
<td>Practical</td>
<td>Experiential</td>
</tr>
<tr>
<td>Structure</td>
<td>Subject/Discipline</td>
<td>Subject/Discussion Craft/Technology</td>
<td>Issues (micro and macro)/Subject Discussion</td>
</tr>
<tr>
<td>Teacher Role</td>
<td>Expert/Information Giver</td>
<td>Applier</td>
<td>Facilitator</td>
</tr>
<tr>
<td>Teaching/learning strategy</td>
<td>Didactic</td>
<td>Practical</td>
<td>Real-life problem solving</td>
</tr>
</tbody>
</table>
Chapter Four

THE "INDIVIDUAL" TRENDS

In their perspectives for tomorrow, the author of Future Shock, Alvin Toffler (The Third Wave, Pan Book/Collins, London); Dickson Paul (The Future File: A Guide to People With One Foot in the 21st Century, N.Y. Dawson Associates); Polak F.L. (The Image of the Future, Amsterdam; Elserier Scientific); Koichiro Hayasi (Informmmunication no Jidai, Toyo: Chuo-Koron-Sha); Kim, Kyong-Dong (Humanization of Organization Living in KDI (Edt) A Superstructure Study on Establishing Objectives for National Development, Seoul: Korean Development Institute); and many other futures specialists, envisage a future civilisation emerging rapidly on earth, bringing in changed ways of living, working, family styles, political action, economic reality, and a new consciousness as well, based on diversified, renewable energy sources, decentralized methods of production, semi-autonomous economies, and, most importantly, the central importance of the individual as the source of action.

While several of their hypotheses or prognostications may be controversial, even currently emerging trends certainly seem to place, on the shoulders of the individual in society, a far greater action responsibility load than ever before in the industrial era, parallel with a far greater recognition of the individual, now smothered in "mass" forms of production, communication, and consumption. Current technological developments such as the movement from mechanical to electronic, from metal conduction to fibre optic systems, from chemical to bio-chemical manufacturing processes, if nothing
else, at least from the standpoint of enormously reduced energy utilization\(^1\), very clearly point the way to decentralised production in low energy utilization modules. Hence renewable energy sources that are modest and diverse, may be used; and decentralisation, which while contributing to de-massifying, immediately places the spotlight on the individual and the enterprising individual at that. A few of the illustrative types that reflect these trends are sampled below.

**Unemployment**

Youth unemployment, in particular, since it is higher substantially than for older people, and unemployment in general, has risen to crisis proportions in most developing countries of the region. It is also reflected in the labour situation in most developed countries within and outside the region.

Nearly a decade ago, in their report to OECD (*Becoming Adult in a Changing Society*, OECD/CERI, Paris, 1985), James Coleman and Torsten Husen identified as a new "underclass", students who leave school at an early stage, without having acquired the knowledge, skills and attitudes to cope with the complexities of modern society. Nor had these young people been warned of, or prepared for, the discrepancies between aspirations inculcated by prolonged schooling, and what they were likely to achieve in terms of status and economic remuneration.

\(^1\) e.g. It takes less than one thousand the energy to manufacture the much more efficient and versatile optical fibre, compared to an equivalent length of copper conducting wire. The same 1,000 kg. of coal required to produce 90 km. copper wire, can turn out 80,000 km. of fibre!
Unemployment rates in the region tend to be higher among households relying on construction activity for a major part of their income. They are also higher among the rural landless and those with small holdings; and among households whose major source of income happens to be the sale of their labour, rather than engaging in self-employment.\(^2\)

A particular complication in the current scene is the counter relationship between unemployment and inflation. National-scale actions taken by countries to control inflation have resulted in increases in unemployment. Increased pay for labour has resulted in increased inflation, compounding living problems.

A number of adverse conditions, commonly found in countries in the region, such as poverty, despondency, dependency, social discrimination, accrue together, worsening and continuing the impact of unemployment on individuals, groups, localities and regions within countries. Several of these conditions focus on personality characteristics of individuals.

Current unemployment data shows the distinct visibility of the percentage of persons with prior work experience increasing in the unemployed group. Especially in "dynamic economy" countries like Korea (60-70 per cent) and Singapore (85 per cent), this increasing weightage of persons with prior work experience joining the ranks of the unemployed, is clearly

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2. Vide documents of the Asian Regional Team for Employment Production (ARTEP), New Delhi
visible. The consequential "pressure" for changing occupations, (in the above cases due to unemployment), is becoming a feature of even the developing countries of the region.

Finding new occupations to change to, and "tooling" up for them, becomes the responsibility of the individuals involved. If the individuals do not show initiative, perseverance, or flexibility in adaptation to new requirements, the individual stagnates in the already suffocating morass of unemployment. Such qualities become highly significant in the context of emerging attribute changes in the employment scenario itself.

**Attribute Changes in Employment**

In the developed countries and, to some extent, even in the newly industrialised countries, two outstanding factors have caused radical changes in attributes of operational functioning in companies and business. First, the exigencies of the market, linked to periodic economic recession, and sharpened competition, have forced companies to examine critically their internal organizational situations and methods, resulting, most vividly, in reformulating objectives, work attitudes, management styles and systems of work organisation. Simultaneously, the vast potentials and current possibilities of the electronic revolution, (for example, in rapid collection, processing and diffusion of information), have increased communication across functional divisions, and have ushered more involvement of individual workers, at all levels, with global company strategies and objectives, and increased team work. Both these factors have converged to produce the
beginning of an "enterprise culture" in companies, with the following types of attributes, among others:

- reduction in the number of levels in the hierarchy of decision-making, so that decisions are made at, or at least closer to, the point where they are needed;

- fostering a "let's try it and see" risk-taking or adventurous philosophy throughout the company, accompanied by greater corporate tolerance of mistakes, and encouragement for systematic experimentation and evaluation to provide feedback on risky actions, for in-course corrections;

- identifying new products, processes and market opportunities through individual and/or team "entrepreneurship", thus fostering a spirit of internal corporate venturing and competition;

- decreasing the size of working groups and units to make them compatible with greater in-group interaction and initiative among individuals;

- improving horizontal and vertical intercommunication, whereby, people are actively encouraged to talk across speciality and corporate "boundaries" thereby weakening the barriers traditionally built among specialities themselves, and between specialities and others;

- involving everyone in the identification, introduction and promotion of improvements to the content and delivery of their own and their colleagues' work, through devices such as "quality circles" and
"suggestion schemes". ("Everyone" includes previous "menial" workers such as cleaners, security staff, shop-floor workers, etc.);

- creating a work force that is intellectually flexible, capable of responding in a positive and constructive manner to change, committed to the company and its products and services, and capable of responding in a positive manner to change.

The above changes have already caused the recognition that attributes such as initiative, problem solving abilities, creativity, team spirit, communication skills, flexibility, in other words "being enterprising", are essential in the new functioning of the business companies, and have to be exhibited by all workers if they are to remain in employment.

Such attribute changes must necessarily infect organisational structures of the developed countries, and in some of the developing countries on the threshold of being newly industrialized.

**New Organizational Structures**

In the industrial era organisational structures, the classical "optimum" was the giant, highly hierarchical, permanent, top-down, mechanistic bureaucracy, that was well designed and adapted to the making of repetitive products or repetitive decisions in a comparatively stable industrial environment. In sharp contract, the changing trends of today cast the image of future organisations with less top-heavy and much flatter hierarchies, if they exist at all. They would consist of small components linked together in temporary
configurations, with each component retaining its own relationships with the outside social, economic, cultural environments, without having to go through "the Centre". Further, these would be poly organizations, assuming two or more organisational structural shapes as conditions warranted, rather like a flexible rubber object, or a football team in which individuals come together in one configuration for one purpose, but the individual members form other, and totally different, configurations for other functions. Instant adaptation to new structures becomes an essential responsibility of the individuals. These small components are "ensemble groups" where coordination is not by anybody, but by the groups themselves (auto-co-ordination). Hence management of such units would also work in terms of a new set of codes. The trend not only underlines that small is beautiful, but that small in large is beautiful too.

The implications for competencies of individuals who would operate such structures are direct and obvious. They would be precisely those related to innovation, self-confidence, divergent thinking, taking initiative and responsibility, maintaining positive and constructive social relationships, communicating effectively, and others referred to earlier.

Such trends in the occupational scene, not unexpectedly, have already found instant resonance in the corresponding occupational training specifications and methodologies.

**Training Implications**

In the developed countries and in the newly industrialising countries in the region, the "new" pattern
changes in the preparation of people for the emerging demands of the
"labour market" is quite obvious. Starting in the 1960s and 1970s, with
work experience as a complement to, or substitute for, missing basic
educational and technical qualifications; then to the provision of parti-
cular technical/vocational skills; then to training for a broad range of
technical and vocational skills; and now to emphasis being focused
upon the skills and general education required in handling and process-
ing information, on interpersonal skills, on communication and pre-
sentation skills, and on analytical skills. Further, adaptability and ver-
satility, the skill of being able to cope with, make use of, or even crea-
tive change, in a highly changing job situation, are stressed. The prac-
tice of this last sequence has identified further nuances of training that
are required, such as ability to plan and make decisions. Such nuances
have arisen from the recognition that the entire labour market scenario
at local, at national or even the nation within the world market econo-
my, will depend upon, to a major extent, the ability of individuals to
respond to change, rather than merely on the possession of a broad
range of skills and knowledge, although these are still vitally required.

These significant changes have been forced upon the training
systems, by the acceleration of change itself. The developed countries
of OECD, for example, are working on the assumption that "one job
for life, and full-time job for life" are anachronistic. These countries
recognize that both to adjust to, and make the most productive use of,
a life in which "activity" may also not mean the same thing as
"working", (especially working in a wage earning context), will
require initiative, creativity, flexibility on the part of all individuals.
Such qualities transcend technical and vocational education, and are qualities that have to be nurtured *early* in educational life, and for all learners, since *all* learners will have to enter the labour market in one form or the other, especially in the emerging attributes of "activity" rather than wage-paid jobs.

Structural and technical change will continue to modify radically the attributes required by the "labour market", not only in the developed and newly industrialising countries, but in others as well, as all countries move into increasing interaction in the global market economy, now that countries (including formerly socialist countries) have committed themselves to economic development in this direction; and as all countries incorporate the kinds of changes in the employment scenarios reviewed above.

It was appropriate to consider first (above), the onus implications on the individual, in business employment scenarios, since "entrepreneurship" was the focus of attention in the earlier issues. Indeed, the "return" of the individual, with the kinds of characteristics and competencies, to the centre stage of every day living, is visible beyond merely "business" scenarios.

**Trends in Other Scenarios**

It is not only in the profit-oriented, market-directed, business circles that such far-reaching and radical changes have been manifested. Even in the "non-competitive" work domains, such as in agencies providing public service (E.g., health, education, social welfare), identical changes have become visible, in developed, and at least in some developing
The individual trend

countries. Some of the motivation comes from the mundane fact of cost. When the problem addressed is huge in size, and complex in nature, not all aspects can be dealt with by institutionalized means, and their corresponding and integral, separated bodies of specialists vs. "captive" clients. This is particularly so when institutional resources are finite, and indeed frequently limited (in favour of the economic domains).

Second is the humanistic recognition of the side effects of rigid institutional care, such as the erosion of individual potential and capacity, which is being realized by the "clients" themselves. The "clients" have recognized that they have sufficient capacities to take at least some powers and responsibilities back. The diversification of learning environments outside the "school structure" via non-formal education, and the parallel de- formalization of the formal system, are products of this recognition. So is the enormous growth of "do-it-yourself" medical care and other do-it-yourself actions.

Indeed "institutional" care has come to accommodate itself to this new trend, in passing on to the former "captive" clients, responsibilities for the service itself. Thus the "employees" in these public service organizations are required to have quite new attributes, of initiative, problem solving abilities, team spirit, flexibility, communication skills in the new institutional specialist - client relationships - that are far more enterprising than previously. It is stressed that not only the employees of such public service agencies have to show enterprise, but also the clients they once "held captive" have themselves to exhibit enterprise, and be expected to do so.
This later aspect will be referred to again under educational systems having a responsibility for contributing to the empowerment of people to maintain their "new" human rights and responsibilities that have their genesis in the rapid and radical socio-economic and culture changes sweeping countries.

In another work domain, the resurgence of "community enterprise", so deeply embedded in cultural traditions of the past in both developed and developing countries, is yet another example of the appearance of "being enterprising". In the European developed world, "local employment initiatives" forms the focus of the OECD ILE Programme. Almost all countries in the region have a variety of examples of such community enterprise, related to both rural and urban development, in which the collective, community-benefit oriented entrepreneurship demands enterprising skills mentioned earlier, such as initiative, problem solving abilities, creativity, in the functioning of these operations. Community enterprises, too, that focus on actions other than entrepreneurship and money making, such as for cultural revival; environmental protection; care of the disabled; political action, again require enterprising participants.

3. For example, within a few years of the introduction, in 1970, of the do-it-yourself pregnancy test, in Europe alone, over 20 million test kits were sold to be used at home. As early as 1977, the Medical World News commented that self-care, the idea that people can and should be more medically self-reliant, is a new bandwagon. Ordinary people are learning to handle stethoscopes and blood pressure machines, especially the direct reading electronic varieties, administer breast self-examinations for cancer, and pap smears, and even carry out elementary surgical procedures.

Thus, in a vast array of potential employment and lifework channels, in remarkably different scenarios of work, and in other scenarios of living outside the business world, a clear and pronounced demand may be envisioned, that focuses upon enterprising persons, whether they be employees or the self-employed, or just citizen consumers and contributors.

To this life-work situations may be added other varieties of events, which focus on the shift of responsibilities on to the shoulders of individuals. For examples:

- The self-service supermarkets and the bank electronic networks, such as ATM, have moved operational action responsibilities away from sales persons and bank tellers, to individual consumers.

- Flexi-time and home-based occupational duties, (commonly related to a computer link-up), point to a shift to a consideration of the individual's work convenience.

- Many mass production operations are changing into smaller-scale production, such as in the massive garment industry, which now has the means, via the computer-assisted laser cutter, to receive specifications from, and produce for, one individual consumer, at a cost less than in mass production.

- Factors, such as cost of energy and time, of real estate, of centralized facilities, have pushed decentralization into the front stage, i.e., demassification i.e., re-establishment of the individual. This has been further reinforced by the trade off
between costs of transportation vs. costs of telecommunication, (which have reduced spectacularly in the last decade, and is predicted to fall further).

- Even mass-produced components are assembled in a vast variety of combinations, catering more closely to customized needs (such as electronic watches, motor cars, radios).

As one further example illustrating the return, (though indirect), to the importance of the individual, attention may be given to one of the most non-individualized instruments of the industrial era - the mass media.

**De-massifying Media**

The rise of mass media has been a highly visible product of the industrial era. In this is found the embodiment of the basic principle of the factory of the industrial era. All mass media tend to move towards stamping identical messages and images into millions of brains, just as a factory stamps out identical products for use in millions of homes. "Facts" are standardized and mass produced. Presentations are standardized and mass produced. The viewing public is standardized and mass produced. The flow is from a relatively few concentrated image factories, out to millions of consumers. Industrial production needs to mass distribute its products. Without the "mass-ified" media for channeling information, industrial "civilisation" could not have functioned reliably.

But this vast edifice of the industrial era, the "infospace", is changing quite rapidly and radically, in the developed
countries, and even, already, in countries that aspire to be newly industrialized countries in the very near future. The oldest of the mass media - the newspapers, are losing their readers in the developed countries. This trend has been taken very seriously since the early 1970s, when in 5 years almost all the main mass newspapers lost hundreds of thousands of their readers. Many of the major mass newspapers have had to close down. Some have resorted to including snippets of localized news to try to counter the trend against mass products, but not too successfully.

Simultaneously, a large number of smaller newspapers have sprung onto the market, together with an enormous increase of mini-circulation dailies and weeklies, which do not serve the metropolitan mass audience, but are focused upon highly localized or specific audiences. The effect of these de-massified media productions have been felt by the large mass magazines also. Life, Look, Saturday Evening Post and a host of others have had to close down, while mini-magazines have sprouted and flourished in large numbers. These mini-magazines are aimed at a huge variety of special interests, such as aviation, teen-age music, Satanists, scuba divers, women athletes, mercenaries, collectors of antique cameras, home bread bakers, skiers, skate boarders, lesbians, cast in relatively narrow and specialized niches. With new, fast, cheap, short-run printing presses, all kinds of organisations, community groups, political or religious cults, can afford their own publication, even if they are quite small. These too are a reality in the media scene.
Such a radical change to de-massified foci, is visible in many other "former" mass media, such as radio, TV, which have moved away from *undifferentiated* mass media publics, to *specific* listening and viewing publics. Community Band (CB) radio transmissions, have had an astounding increase. In the USA, for example by 1977, already some 25 million CB sets were in use, filling up the air waves with highly individualistic (non-massified) colourful chatter, to fellow CD users over a 10 to 20 km. radius. Cable TV, which has spread extensively in more than developed countries, is another medium change in de-massifying audiences and dissecting them into mini-publics.

The Captain and Hi-Ovis Systems in Japan, though on a investigatory scale, have made interactive TV a reality outside the laboratory. This too adds powerfully to the de-massifying of media. Even in its present "primitive" stage of development, interactive TV can already have individuals in the home audience voice opinions in local political debates, bid for items at an auction, and vote in a singing talent programme, all a long way from generalized, massified media presentation. In their own way, video games and video recorders also contribute powerfully to the de-massification of the media, and provide consumers with practice in interacting with media on an individual basis.

A number of perceptive research studies in Japan have indicated unambiguously that the mode of *mass* communication has reached "saturation", and that a new mode of "medium communication" is quite clearly emerging. The attributes of this mode include not only high efficiency, but also the spectacular broadening of freedom in the medium...
communication area. These characteristics stem from new needs of people and of society as a whole, at the "end" phases of the mass production, mass consumption, mass communication era in Japan.

People, and society in general, are quite definitely seeking more diversified life styles, specific to their individual needs and priorities, than in the "mass" age. The stereotyped, generalized forms of the "mass" thrust have started to be rejected.

In addition, technology too has had an explosive development in this direction. No doubt perceptions of the new trend triggered the technological advances. In turn, the technological advances have reinforced the new trends. The technological advances, based upon the integration of telecommunication and computer processing, broaden dramatically the freedom in access to, and use of, information. Already, the applications of such technological advances are in use, such as\(^5\) Two Way CATV, VRS, TV Conference, and dozens more.

The foci are quite clearly "non-mass", sub-national geographical communities, or those related to hobbies or intellectual or aesthetic or sports or finance or other "local" interests.

\(^5\) CATV: Community Antenna TV - TV station and private TV terminals with interactive capacity.

VRS: Video Response System - Central information station and private TV terminal receivers.
Behind this strong thrust, are the consequential implications of people having to be capable of making maximum use of these radical changes and, equally so, requiring enterprising competencies to meet the responsibilities demanded of them as a result of the individualisation of what had been "the mass". Individuals not having these competencies to maximize the economic and other potentials, would run the risk of marginalization many times more powerful and devastating than the marginalization and anonymity that finds its genesis in the previous "massness" and massively generalised nature of the media.

The above has only sampled a few of the global trends that ultimately focus down to the demand for "enterprising individuals". But even the small sample is sufficient to reflect the sweeping power and spread of this future tidal wave.

The above may also be seen as a strong warning of the possible calamities that can overwhelm individuals unprepared for, or lacking proficiencies, or the will, to be enterprising. Such individuals surely run the risk of becoming piteous, helpless jetsam and flotsam, abandoned and even despised by society.

In response to these dangers to their citizens, several perceptive countries in the region (e.g., Republic of Korea, Japan), have already planned and initiated educational actions to equip citizens in the many parameters involved, in particular in respect of the heavy responsibilities anticipated to be placed on the shoulders of the individual.
The emphasis on process-skills oriented education is considered one likely counter to the calamities. The various sub-skills involved learning to learn, which, therefore, would surpass past emphases on the accumulation of pre-selected facts or even concepts and generalizations; the search for new questions and not for old answers.

Such foci stem from the recognition that education which is unable to predict "exactly" the knowledge or behaviours demanded by the future, will have to concentrate on producing persons able to solve problems that cannot presently be foreseen.

It is further recognized by these countries, that effective problem solving is dependent on a creative and pervasive process. Which is not tied to any particular subject, but linked with all subject areas; that all subject areas can, and need to help facilitate the growth and development of the relevant proficiencies; that such proficiencies are best learned from: (a) confronting real problems from real life, not artificial or simulated or contrived ones; and (b) taking initiative for action, and continuing into action itself in regard to the problems, and not merely arriving at solutions, (even to real life problems), which remain hypothetical and "on paper". With these would be associated all those proficiencies identified earlier as pre-requisites for "being an enterprising individual". The process involved is the self-actualizing of individuals to be autonomous and creative, and have a positive view of life and of oneself.
Enterprising individuals

It would seem that the vastly changing scenarios of the future, (only few of which have been glimpsed at above), demand from its inhabitants to be better at thinking, planning co-operating, organizing, communicating, evaluating, taking initiatives, solving problems, whether the inhabitants are workers, consumers, community members, business people, entrepreneurs, or ordinary citizens. It would seem that ordinary citizens have to feel less helpless, and have to be empowered to feel so. Whether it be the solving of the problems of unemployment or poverty, or those of modernisation, or of drastic socio-economic changes, people must needs be enterprising - the opposite of fatalistic "sitting back" and let circumstances overwhelm them. Thus "enterprise" would mean more than either business skills or entrepreneurship. Enterprise could mean survival.

Seen in this light, enterprise developments (and enterprise education) becomes an intimate and inseparable aspect of human resource development in its widest and most humanistic sense, and not just of industrial and economic development, or even for personal money making. This is

6 As the development of qualities and proficiencies that enable individuals, organisations, communities, societies, cultures, nations, to be flexible, creative, adaptable in the face of, and as contributors to, rapid socio-economic and cultural change - not just to cope with change, but to mobilize and manage change in the interest of their individual and collective quality of life and human-ness.
because the process generates people with initiative, responsibility and creativity. It releases enormous latent potentials of people, usable for their own and for the community's good. It empowers people to be able to face the emerging trends of the future, which already have sprouted in developed countries, and will no doubt be appearing powerfully in the developing countries as well.

Equally important, the moves to the "individual" focus implies a wide range of characteristics and competencies that individuals must have, to survive meaningfully in the future scenarios. These would be new elements of human rights of the individuals, which the education system, with its clear mandates for protecting and sustaining human rights, and for developing human resources, has a unambiguous responsibility to provide for.

Reference should be made to a further and new aspect of protecting and sustaining human rights. Much of what was reviewed above, would apply immediately and on a large scale, to the developed countries. They would still apply with equal urgency, though not necessarily on an equivalent large scale, to countries establishing themselves in the industrial era, and even to some degree, to less developed countries, since world trends cannot be escaped from, especially because "global market" linking is binding together all countries. However, the less developed countries, and those in the developing countries emerging into the industrial era, will have, simultaneously, in their national and geographical environments, scenarios that characterize the primeval agriculture era, the "modern" industrial era and the "futures" post-industrial era.
The need for enterprising individuals who can survive in the presence of all three, (with decay in some scenarios and forward thrust in others), and the accompanying social and cultural tensions, contradictions and upheavals, is amplified many times. The responsibility of education systems in these countries, to empower their peoples specially for such situations, is further magnified.

Given (a) that enterprise education is for the development of enterprising human beings and perhaps even for the nurturing of an enterprising culture, and hence is required to be placed integrally, as a vital component of the general education of all people; and (b) that many countries have already specified these very same "enterprising" competencies as intended learning outcomes for all learners, at least a decade ago, what should the next practical steps be, to ensure the reality of such competencies being actually teamed, rather than remaining only tokenistically in present curricula and learning sequences, of formal and non-formal education?
Asia-Pacific Programme of Educational Innovation for Development (APEID) has as its primary goal to contribute to the building of national capabilities for undertaking educational innovations linked to the problems of national development, thereby improving the quality of life of the people in the Member States.

All projects and activities within the framework of APEID are designed, developed and implemented co-operatively by the participating Member States through nearly 200 national centres which they have associated for this purpose with APEID.

The 29 Member States participating in APEID are Afghanistan, Australia, Bangladesh, Bhutan, China, Democratic People's Republic of Korea, Fiji, India, Indonesia, Iran, Japan, Lao People's Democratic Republic, Malaysia, Maldives, Mongolia, Myanmar, Nepal, New Zealand, Pakistan, Papua New Guinea, Philippines, Republic of Korea, the Russian Federation, Samoa, Socialist Republic of Viet Nam, Sri Lanka, Thailand, Tonga and Turkey.

Each country has set up a National Development Group (NDG) to identify and support educational innovations for development within the country and facilitate exchange between countries.

Asia-Pacific Centre of Educational Innovation for Development (ACEID), an integral part of the UNESCO Principal Regional Office for Asia and the Pacific in Bangkok, co-ordinates the activities under APEID and assists the Associated Centres (AC) in carrying them out.

In the fifth cycle of APEID (1992-1996), three major programme areas have been selected by the Member States at the Twelfth Regional Consultation Meeting on APEID (August 1990) for the purpose of concentration. These are:

1. Primary education

2. Reorientation and qualitative improvement of secondary education (including general education and technical/vocational education)

3. Science and technology education (including Science for All, mathematics and information processing).