A LITERACY JOURNEY

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by
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FOREWORD

The concept and problem of Adult Literacy has, during this half a century, passed through many stages. Early part of the twentieth century, saw a demand on the part of the nation's leaders (prominent pioneer among them was the late Gopal Krishna Gokhale) for the adoption of universal primary education. It was, though not very consciously, considered that the scheme would make all people literate in course of time.

2. Later on Adult Literacy of the mass of people received special attention in many circles. Spasmodic attempts were made by some earnest social workers of vision to organise literacy classes here and there. It only meant carrying the torch to some few dark corners. The leadership came from a few devoted persons and the beneficiaries were a limited number of people. Bulletins and handwritten journals were also brought out for neo-literates.

3. Another phase of the movement consisted of an exhortation to college and university students to devote a part of their energy, particularly in vacation time, to literacy work in villages and among poor people and labourers in towns. This too never became a sustained effort. No effective impact was noticed in improving the situation.

4. In between, some thoughtful and dedicated persons applied their minds to evolve easy and quick methods of learning the alphabets by illiterate adults. In this category Laubach's name takes a place of honour. It is said that he wrote 274 primers in as many established alphabets. It was a heroic fight against illiteracy. Several other people carried on this struggle and brought out new devices of learning. They published books in explaining their methods and techniques and justifying their special merit.

5. Forty or fifty years ago Literacy was interpreted as ability to sign one's name or to read a little. Official Census Reports went generally by this view. During the last decade—largely owing to the leadership of UNESCO—this view was discarded. Knowledge of the three R's was considered quite inadequate and the concept of "Functional Literacy" gained currency.

6. During the last ten years or so the subject has been taken up with vigour and enthusiasm by UNESCO. International Conferences have been organised to discuss the subject and to plan radical action for the eradication of illiteracy specially in the Third World. UNESCO experts were sent to different countries to promote this effort.

7. This, in short, is the pathetic story of the journey of Literacy through the world covered by over 800 million illiterates. It is a problem of frightening dimensions. This giant enemy of mankind still remains powerful and unconquerable.

8. On this scene appears another "journey" of a Literacy Leader, a field worker, a thoughtful crusader who has devoted a large part of his life in fighting the battles of literacy under very different conditions and in different parts of the world. This book "A Literacy Journey" is, as it were, an autobiography of its author, a Literacy Specialist.

9. This short book written in an unorthodox style is rich in variety and comprehensive in its contents. Each section has its own unique appeal and significance—beginning with the moving account of a wild and earnest effort to bring "thirteen" adult pupils to an adult class by all desperate means for the visit of the rigid Inspector one evening to his school in the city jail of Naples (Italy).

10. Mr. Bonnani has, in the course of his career, dealt with different types of people—nomads of Somalia, herdsmen roaming with their sheep, people of a poor commune in Southern Italy, in Iran, in the Persian Gulf area, in Central America, in the Mediterranean region, in West African parts, not to speak of his devoted work in India. The distant and different parts of the wide world from where he drew his experience and in which he developed his ideas and techniques make this book unique and useful.

11 His treatment of the subject is indeed broad-based. It will be heartening for those literacy workers who now like to link literacy with development, to find support in his advocacy of integrating functional literacy with occupation. The systematic discussion of this part of the subject is instructive in the relevant section of the book.

12, The social and developmental outlook of the author as a Literacy Worker is in evidence in such chapters of the book as

"Ibrahim Follows Up" and even more so in another section entitled "The Commune and the Migrants". The book as a whole lifts the theme of Literacy above the narrow concept which used to be and still is prevalent in many quarters. That is at once its special merit.

13. He rightly emphasises the need and value of proper training of Literacy Workers. In fact the whole book should be considered as a manual of methods and techniques which are directly and, in some places, indirectly explained. Above all the leaders in the field of literacy should build up in themselves a faith, a credo that if workers "were literate, their work would be more rationalised and better organised, accidents and waste would be reduced and fewer people to check their work would be required. Workers' productivity would be improved, and their social rights would be pursued in more intelligent ways"..."Able to read, they would understand working instructions and the bye-laws and the regulations of their trade unions". The concept has equal force and applies in equal measure to agriculturists and artisans. Bonnani quotes with a full measure of support the statement of W. Porter who said in his report on Education and Economic Development in India and Pakistan, "Literacy should be given to all, in order that all may have an equal opportunity to enjoy social justice, to live in dignity and to participate in a viable political system". The section of his book called "Autodafe (perhaps an Italian expression) of an Adult Literacy Worker" will be a source of moral support to our colleagues in the literacy field.

14. Mr. Bonanni rightly stresses the importance of choosing methods and techniques which suit adult psychology. The "static, sterile and paternal" tools of the primary schools are bound to drive away the adult instead of drawing and retaining his interest. "Adults without any institutionalised learning experience, gathered at the end of a long hard day, in a dark room, or in a poor yard though motivated, cannot afford the fatigue of a literacy class, unless their participation is supported by intensive curricula, stimulating methods, maieutic techniques and autodidactic materials, all tailor-made for adults" (p. 29). It is essential to learn and use "non-puerile" methods if the endeavours of serving the needs of adults are to become fruitful.

15. Like an expert, as Bonanni is and has been and with his experience of different races, region and situations, he treats the contents of the courses in a thorough manner whether it is in the area

of linguistics or mathematics. In the latter sphere he becomes a little too technical and may become rather trying to many of his clients and readers. But the planning and programming of instruction would be found to be useful guidance.

16. The Indian Adult Education Association is glad to publish this book and introduce it to the public, and in particular to the educational workers. This book should make a special appeal to all those persons who labour in the adult education field and also to those for whom the problem of total illiteracy among two hundred million people of our country is a source of worry and shame—considering the history and heritage of this old country and the place it is entitled to occupy among the civilized nations of the contemporary world.

17. On behalf of the Association I record my deep sense of appreciation for Mr. Camillo Bonnani (of Italy) in producing this book for Indian readers.

Seva Mandir
Udaipur (Rajasthan)
July 13, 1973

MOHAN SINHA MEHTA
President
INDIAN ADULT EDUCATION ASSOCIATION

PREFACE

This booklet brings together witnesses of Adult Literacy experiences, acquired in various countries, as well as themes offered to me during twenty-two years of daily field work.

Some of its chapters have already been published in specialized bulletins, others are now printed herein for the first time. They are organized in a new progression which respects the chronology of the related facts.

Many of these pages were written hurriedly, in the midsts of busy working days, directly in a language which is not my mother tongue. They have some mistakes, repetitions and contradictions, for they are mirrors of existential moments, met in different places and times, which often assumed repetitive or dialectic dimensions. They stem, however, from a desire for understanding and participation and if only for this reason I hope they may be justified.

Some of the experiences I refer to have been carried out within the framework of national and international Literacy projects, while I was part of their teams, but the lines dedicated to them reflect only my personal views.

In this booklet the names of Ibrahim, Rocco, Ram Kumar, and others are mentioned. They are fictitious but the stories narrated by them are true.

I am grateful to the friends of the "Indian Adult Education Association" who enriched the last days of my Literacy journey with this publication.

New York CAMILLO BONANNI

22nd April, 1973.

CONTENTS

"13: The Critical Number"

Napoli, December 1948. Naples, the Calcutta of Europe. Poorer than ever in those post-war years. And I also, in spite of the fact that, three months before, I had found a job, after a long period of unemployment. The salary was very meagre: I was teacher of the: "Scuola Popolare" in charge of two literacy course for adults. The payment of my salary was conditioned by a terrible ukase: a fixed number of attendance. It was, in fact, at the very moment in which my work started that the Inspector of the school told me— Remember..... that you will lose the job any time the number of drop outs exceeds fifty per cent of the enrolment. I had 26 enrolled in the first course and 25 in the second course. I should have kept in the classroom at least 13 pupils per course. 13 was my "critical" number.

My school was situated in one of the most dirty and crowded peripheric quarters of Naples, that of "Poggioreale", the monumental city jail. The school building had narrow windows slashed by the bombardments and humid and mossy walls. It was sad and cold. The first course had to start at 6 p.m., the second at 7 p.m. Six evenings per week.

That evening as I was approaching the school on a bicycle, just on time for the first course, I saw the janitor waiting for me at the gate. By making signs he was trying to communicate something to me. When I was closer to him he dropped the bombshell !

—Tonight : inspection !

He announced this, loudly, with satisfaction, continuing, confidentially, in a whisper :

—The information has come from a very reliable source. Do you understand ?—

—My God, just now !

That December I was badly in need of the salary. Two bills of exchange had to be paid before its end, without counting my monthly boarding and lodging expenses, increased by all the Christmas burden.....

My bewilderment lasted few seconds. Then the fear brought out my courage.

—Tell me, how many persons are there in the class, now?—I asked the janitor.

—Three—He replied.

—O. K. Better than nobody—

I plunged immediately into the plan of the battle. First action: those three will be kindly but firmly requested to remain in the classroom also for the second shift...But how?..... Somehow, we will see later. Second action: five out of the 25 enrolled in the second group, "i fedelissimi", the fidel ones, will surely come, as yesterday, as the day before. It makes eight ; still five short of the quorum needed for my hold on the job... What do do?... To catch the black sheeps. At least five of them. Yes... that was the third action. There was no other solution.

I put my hand on the shoulder of the janitor and looked into his eyes.

—Brother, listen to me. You have to do two things. One: Go immediately in the class-room and paste those three on their benches. Force them to copy the whole of page 14 of the primer: one, two, three times until I come back. And tell them that tonight they have to remain in the classroom until 8 o'clock. I will offer them a glass of wine in the canteen, after the Inspector's visit. Two: send your wife to Maria's and Addolorata homes. She has to tell them that they have to report in the school as soon as possible, because..... because there will be an extra distribution of the Marshall Plan's powedered milk. They may bring their children along with them. Three:... I will go to look for the others. Move, soon !

The janitor didn't move but just stared at me.

—Alright you will have 500 Liras. But not now, at end of the month.

He moved for seven hundred Liras, which was not a light sum for my pocket, representing about 5 per cent of my salary.

I rode my bicycle towards Antonio's house, the closest to the school. His mother was out in the courtyard washing clothes.

—Good evening, Signora.

—Salute a voi.

—I am the teacher of the Scuola Popolare. Where is your son Antonio? I need to speak to him. It is important.

Antonio had gone to the fair. There he had exasperated so much the girl on the pigeon shooting stall that she shot him, with a feather

bullet on the calf of his left leg, which was bleeding. It had been impossible to take him out of his wrath, his imprecations, his need for first aid, and, to see him directing his crippled steps towards the school, if I had not promised to accompany him to the Police Station, after the course and to be witness against that girls and in his favour...

—Joseph is in the cinema Iris—Somebody told me, at his place. So I rushed to the cinema hall where "Sergeant York" was being shown with Gary Cooper as the hero. I learnt that the interval was in ten minutes time. I waited, traced and caught him. I asked him to come to the school. He answered, "I have not yet finished the film, how can I come". I explained to him my reasons, he told me, "You think the Inspector is better than Gary Cooper that I should leave the cinema and come with you". It was only after I promised him to pay the ticket for the same show next day and give him a packet of cigarettes at end of the month that he accepted to leave his seat and go to the school.

Now it was the turn of Filippo. His house was five minutes' ride from the cinema. When I reached there, his father was standing on the threshold, smoking his cheroot. I asked for Filippo explaining why I was looking for him.

—That idiot got himself caught and is in the prison, now—He said.

—When was he caught ?—I asked.

—Last night.

—Couldn't he wait one day more !.....And now, how to overcome this unforeseen mishap: Go and search for Gennaro.

This is what I have to do.....No, I cannot ! After what he had done the other day. He had waited for me in the middle of the lane with a stone in his hand, shouting "Come, I'll make your head into a pommegranade." And why? Because he had pinched the bottom of his teacher, Miss Buonocore. And it was on her request that I was forced to ask him to get out of the school. He didn't get out, so I had to substitute words with hands..... No. I cannot humiliate myself and my profession ... Yes, so I gave up the idea of calling Gennaro and I started back towards the school, resigned to my fate. But the sight of the woman roasting chestnuts outside the school, gave me new hopes. Why not invite her in?

—Donna Filomena, I beg of you as a son to come to the classroom for half an hour.

—"Are you mad, me coming to the school at this age". She replied.

—Please come now and I'll explain latter—

—But I have to sell my chestnuts. If I don't sell them I will not eat tonight.

—I'll buy all those you have already roasted.

—And what I have to do in the classroom?

—You have to do nothing but sit and look at the blackboard, and count your rosary—

I filled my pockets with the chestnuts, and gave her the last of my coins. Supporting and pushing her at same time, we reached together the classroom.

It was almost 7 o'clock. The three of the first course were there playing cards with the janitor on my desk. The five "fedelissimi" of the second course had just arrived. Antonio and Joseph were in the corner, the first bandaging the calf of the other. Maria was there with her little son suckling at her breast. So was Addolorata there trying to quieten her daughter who was crying because of the mumps.

3 plus 5, plus 2, plus 2 makes 12, and Donna Filumena: 13. Hallelujah!

—All sit down, please! Open your notebooks and take a dictation: Domani .... Domenica ..... — I started.

At that moment the door opened and the wife of the janitor announced — Il Signor Ispettore!—

—All stand up. Welcome Signor Ispettore.

—The Inspector nodded: Good evening. How many pupils have you enrolled in this course? —

—25, Sir... (He was now looking around, perhaps counting the heads) ...but only 13 of them are in the class tonight. There is a wedding party going on in the quarter, and ...You know, Signor Ispettore,...

Literacy for Nomads in Somalia

This is the story of a small experimental literacy course for Somali herdsmen which was run under Unesco auspices in 1957 in Somaliland under U. N. trusteeship. A Unesco fundamental education unit was carrying out its programme of work in the village of Dinsor with the object of furthering the socio-economic development of the community in this region and the instruction and specialized training, in fundamental education, of Somali technical personnel. The project was instituted on 8th January, 1954, as part of the programme of U.N. Technical Assistance for Somalia.

The project provides for various activities, such as : medical and social welfare services and sanitary and health education of the population in the villages within the District of Dinsor; the improvement of agricultural and artisan techniques; courses in carpentering, dress-making and sewing in Dinsor; a general educational course with the aid of audio-visual media; the organization of sports contests and dramatic performances with an educational background; and a literacy course for semi-nomadic herdsmen.

In this it is the last-named activity that I propose briefly to describe. First, however, I should rapidly review the internal cultural position in Somalia. Somalia is a broad peninsula of about 200,000 square miles extending into the Indian Ocean, between latitudes 1^0 south and 12^0 north. In the north it is bounded by the Mijertein plateau, which is irrigated only by small torrent-like rivers, and in the south by a plain lying between the Webbe Shebeli and the Juba rivers, which have water throughout the whole year. Not far from them, the Territory consists of 'small bush' which is thorny and interspersed with acacia and euphorbia trees and other long-stemmed species. The bush of the northern region is almost entirely devoid of water and grass; but the land between the Webbe Shebeli and the Juba is relatively richer, both in water sources and in grazing-grounds. Because of these local features, irrigable agriculture is confined to the strips bordering the two rivers; it is also possible in the more arid zones between them, during years of abundant rainfall.

It is thus correct to say that the Territory's basic way of life is a pastoral one. Nine hundred thousand Somalis—three-quarters of the country's presumed total population—raise cattle. They own camels, cows and oxen, sheep and goats to a total of about 6,000,000 head, and they move constantly from place to place in search of water or grazing grounds. In the north, which is a semi-arid zone, only camels and goats can exist, but in the central and inter-river regions large numbers of sheep and cows are raised.

The Somali herdsmen are transhumant, rather than nomad in the usual sense of the term. They move, not in large tribal groups, but in small family units of, say, 20 or 25 persons at a time; and while each group keeps strictly within certain areas, the limits of which have been well defined throughout the centuries, they do not follow predetermined tracks and seldom stop at fixed halting-places, nor do they always seek out the same watering-points; but they make for a zone where the rainfall of the previous season has produced good grazing-grounds or where the rain has collected into ponds and small lakes, which the herdsmen call *uar*.

In this way, some groups of herdsmen—in the trans-Juba area and the more northerly zone of the Territory—live in continental movement throughout the year, practising a kind of symbiosis with the cattle. The men lead the herds towards the water and the best pasture-land, treating their diseases and defending them from wild animals, while the cattle provide milk and sometimes meat.

In the inter-river zone where we work, the herdsmen often stop for some time in certain fixed places, near to wells and patches of pasture. This happens in periods, when, because of the dry season, the pasture elsewhere is burnt up by the sun and the water temporarily exhausted. Sometimes they stay in these watering-places twice during the year for as long as a total of 4½ months, each period corresponding to a dry season (*Gilal*), the first such season falling in January, February and March, and the second in September and October. In these periods, some herdsmen become cultivators, sowing *dhurra* (sorghum) in the black soil close to the watering-place. Naturally they neither plough nor prepare the ground in any way, except for a little weeding which is done, as soon as the plants begin to come up, with a rudimentary iron hoe (*yambo*). When they move on, they leave behind some member of the family, generally one of the women-folk, to take care of the plantation. The harvest, which is rarely abundant, is not sold but serves to make a species of cake,

and polenta, for the varying of their basic diet of milk and meat. This change of occupation can be accounted for either by the presence of fertile black soil in the inter-river zone—which can be cultivated in years of good rainfall or by the Somalis past contact with the Bantu farmers who originally inhabited the area, and with the Galla-Borana herdsmen-farmers who migrated to this region before them. The fact that there is cultivated land within the pastoral region makes the journeys of the caravans in transhumance even more varied and interrupted.

The village of Dinsor, the centre of the Fundamental Education Project, is situated near one of these fixed watering-places. In fact, just over half a mile from Dinsor, there is a depression (called by the Somalis *bohol*) in the land where, immediately following heavy rainfall, a large quantity of water collects and very quickly disappears below the soil. During dry periods, the herdsmen excavate their wells within the *bohol*. At times, they may have to dig as far as 65 feet before finding water, which is, moreover, slightly brackish. The water is then drawn to the surface in leather bags.

Such was the situation when in January, 1956, I and my colleagues decided to approach the herdsmen who had stopped near the watering-place at Dinsor, in order to gain their confidence and friendship and invite them to visit the Project Centre : to establish with them, in fact, the preliminary contacts which would in due course help us to start a literacy course. We hoped to obtain good results with the semi-nomadic herdsmen. We had already approached certain completely nomadic herdsmen, but the fact that they were more or less in 'perpetual motion' had checked any further progress ; as a matter of fact, we found that many of them were eager to learn new things, and by way of illustration I would recount the following episode.

One day, after some hours of journeying in the bush, we had stopped to have lunch, when three herdsmen came up to us. One of them picked up a piece of newspaper that we had dropped, started to look at it attentively and then said, speaking in dialect, 'Teach me to read'; and immediately the others repeated the same phrase in chorus. We asked them what their names were and what they were doing, explaining that although we would be glad to satisfy their request, there were many difficulties to be overcome; for example, we did not know where to set up the school. Whereupon the first

herdsman immediately replied:

'Have it under that tree over there,' indicating the tree with his finger.

'And how many of your group would be prepared to come to school ?'

'Three, only we three.'

'And for how long are you going to stop here ?'

'Only for to-day'.

'And then ?'

'Then, we shall go to Berdale' (125 miles to the north-west).

'And after that ?'

'After that, we shall go to the river' (250 miles to the south-west of the first locality) 'and then later on we shall come back here.'

How was it possible to form a school of three pupils—who were in perpetual movement throughout the year—following them from the hills to the river ? Before going away they asked us the meaning of a few Arabic and Italian words they had picked up, who knows how or when, from some person coming from the towns. Then we set off again, and they ran behind us, crying 'Why are you going away ?'

With the semi-nomadic herdsmen, perhaps, the difficulties would not have been so formidable.

One morning towards half-past eleven, we were going to the region of the wells, with a loudspeaker mounted on our jeep. At that hour, the herdsmen, having drawn water all the morning, were just stopping work because of the heat of the sun. Hundreds and hundreds of cattle surrounded the wells. We started playing, through the loudspeaker, some traditional songs which we had previously tape-recorded from some caravans in transhumance. Several herdsmen approached us and began to sing in accompaniment. Then, I and the teacher, Mohamed Abucar Scek, approached some of the group, greeted them and inquired after their health and that of their cattle. They answered good-humouredly, and told us that they were stopping near the wells of Dinsor for another two months. We asked them if they would like to learn something new and useful, because in that case we would expect them at the Project Centre in the afternoon; on every subsequent day, after watering their animals and before returning to their tents in the bush, they would be able to spend some hours with us.

Some of them were pleased and promised to visit us; others replied discourteously. One said : 'Why should I come and study with you? I don't want to marry a white woman;' and another : 'There are others who have already studied for me. I go my own way, and let them go theirs'. A third said : 'I don't want anything to do with the Government; it is my enemy, because it makes me pay taxes and gets hold of my money'. We continued our propaganda efforts for several days and, on the afternoon of the 10th January, invited all who had responded to our invitation to meet in an *arisc* (a rectangular hut with palm walls and straw roof) which had already been prepared as a school next to the Social Centre.

On the first day ten persons turned up, on the second thirteen, and so on until by the fifteenth day there were twenty. Attendance thereafter remained on an average, more or less constant.

With regard to the programme for the course, my colleagues and I agreed that one of the most important aims was to help the herdsmen escape from their isolation, to broaden their outlook and thus to enable them to take a more active part in the new life of the Somali nation (now on the threshold of independence) and identify themselves with it.

It was not difficult to draw up the programmes for the various studies, but the question remained : in what language the herdsmen should be taught to read and write? This was indeed a difficult problem to solve. The herdsmen who assembled round the wells of Dinsor used chiefly, amongst themselves, one of the Dighil dialects, spoken by about 8,000 persons. With other herdsmen of the region, and with the village traders, they communicated in the Rahauen dialect, the *lingua franca* throughout the whole region between the two rivers of Somalia.

It had been our conviction that reading and writing should be taught in the mother-tongue, because this was counselled both by educationalists and modern psychologists and by our own working experience; but various reasons induced us to alter the course of action we hoped to adopt.

The Somali Government, because of the many conflicting opinions and the many contrasting solutions proposed by the political parties, has in fact not yet decided which of the Somali dialects should be selected as the national language, or in what characters it should be written, (Arabic, Latin or Somali-Osmanic). For this

reason the schools of the Territory at present use as the languages of instruction, from the 1st elementary class upwards, Italian and Arabic—the Territory's two official languages. Moreover, we knew it was not possible, even experimentally, to teach reading and writing in the mother-tongue, because one of our earlier attempts in Dinsor, during a course for adults, had already failed owing to external intervention.

Hence, if we wished to make our course a success, we had no choice save to adopt one of the two official languages as the language for literacy teaching, although we realized the extent to which this would limit the scope of our work.

It was decided to ask the herdsmen in what language they would have liked to be taught. The majority already knew how to read the Arabic of the Koran, which had been taught to them mechanically by the Koranic teachers following the caravans. Perhaps for this reason, all except three asked to be allowed to learn how to read and write in Italian.

For the benefit of the three who had chosen Arabic, a special teaching time-table was drawn up. The herdsmen already knew some 50 words of Italian, which they used in the market or with District officials and traders; but they wanted to learn other words, which they thought might be useful to them. Accordingly, so as not to render our labours unproductive, we decided to teach them to read and write in a general way, those Italian words which they already knew and, later on, to organize little conversations into which new words would gradually be introduced. We also contemplated, whenever occasion arose, teaching the herdsmen to write a few words of their mother-tongue in Latin characters, in the hope that familiarity in the written and spoken words and the mastery of the necessary techique might in due course be useful to them when the national language of Somalia came to be decided upon and they would then have to express themselves in it in writing.

We began our course, on this basis and with this programme. It was placed in charge of the teacher, Mohamed Abucar Scek, assistant director of the project, who had actively assisted us in the completion of the programme and in the preparatory work. He knew the Italian and Arabic languages well, and was thus in a position to assure the far from easy task of teaching the herdsmen how to read and write. For the oral subjects, he

naturally had recourse to their own language. The course terminated, after three months of activity on 16th April, which happened to be the day of the first rains of the year, when the herdsmen moved on to regions richer in pasture-land and water. After their return at the end of a few months to the wells of Dinsor, our work will begin and we shall find new faces, alongside the old ones, in the class. The young herdsmen, at the beginning of the second stage, will have a new teacher, Nurreddin Hagi Hussein, in the place of Mohamed Abucar Scek, who is to take up a Unesco fellowship.

Ibrahim Follows UP

Somalia, 3 August 1956

most Mister

my present situashion is good bat I ave in good ealth bat I am most ubset that I ave know you want metme why you ave send me mesage of the chief village this tell me that you tell im that you wait Ibrahim Mohammed for give work and lesons and I am redy go eskool as I forgeting what I ave learning becuse in bush no are techer only Kamel and Lion no look this leter with your rite eye because no well riten your obbedient.

..., 10 May 1957

My dear Sir,

I the undersigned, Mr. I.M., beg you to give me a small favor. I have work and I have learn many things for reading and writing during this year and now I want go the capital for continue studing and follows instructions of our Prophet. Those behind me are now ahead of me and I am behind those. Excuse me and help me go the capital. I grateful you. I not a student before but now I have study many things. I can read and write. Before I know not how work and now I know. Hallowed be thy name, thy will be done on earth as it is in heaven. Give us our daily bread and forgive us our trespasses as we forgive those who trespass against us.

Yours sincerely

..., 16 May, 1958

My dear Sir,

These lines have been written by your son Ibrahim who is full of joy and happiness and who sincerely salutes you with his right hand. It is a long time I have not written to you, but you will excuse me as I was a mistake. But, please, not think that I have forgotten that you made me drink the honey of science. I thank you a thousand times and I hope that you find your desire. We have now finished the boarding school; we are in good health in our sacred month of Ramadan which is filled with prayer and penitence.

Please salute all the friends.

Your sincerely

..., 12 June, 1959

Dear Professor,

In a few days I shall leave for continuing my studies. Could I ever imagined to go to Europe for studying when I was giving water to the camels in the bush! I am so glad! I shall never forget the favour you have done for me so long I will be on this earth. I will never be able to repay you even if I carry you on my shoulders for the rest of my life. I pray God to give you a long and happy life and His benediction.

Thank you infinitely.

Respectfully yours

Europe,..., 28 March, 1960

My dear Professor,

I am sorry not to have written to you earlier.

I would like to hide myself behind a baobab tree but I look everywhere and do not find one.

We are now following an advanced language course, in this magnificent town of.....,full of cultural witnesses and artistic monuments.

We are studying other subjects besides the language, such as : History, Geography, History of Art, Natural Sciences, et coetera.....Our tutors are very refined persons. We visit libraries, museums, theatres.....I am very, happy with this life, like a bird flying arcund in the sky. We are very well and we have been lucky to have a mild winter. We have never had snow, not even once. But some of us have been ill with influenza. During next Easter, we shall visit the International Fair at.....I do not know whether we shall also go to....., if we do I shall ask you for your father's address in order that that I may pay him my respects, and talk to him about you.

My warmest regards,

Yours, truly

P.S. Enclosed is a picture taken beside the Villa in which we are living. It is very clean, filled with staircases, mirrors and flowers. It was built during the Renaissance at end of the XVI century. We are very happy here.

The Commune and the Migrants

Illiterate and literates express their views about migration

Our commune is located in one of the poorest regions of Southern Italy. It is in a mountainous area, at the meeting point of the valleys rising from the Adriatic, the Ionion and the Tyrrhenian Seas. The chief town of the commune is a small place of some 5,000 inhabitants, lying on the spur of a mountain approximately 2,800 feet (900 metres) above sea level. Notwithstanding its altitude, it is not far from important lines of communication, roads and railways, which connect Rome with Taranto.

In 1964, the commune had 11,323 inhabitants, 4,940 of whom were crammed, into the chief town itself. The rest of the population lived in 66 small hamlets which house a few families. The hamlets contained practically all the farmers of the district while the urban population lived in the commune's only town.

At that time farmers made up 48.5% of the commune's entire population while 33.4% worked as artisans, or in building and industrial trades or in services. Agriculture, mainly based on wheat cultivation and on pasture, demanded very hard work yielding only small rewards. It was three quarters in the hands of elderly men and of women ; the young men preferred to find more stable and better paid employment by migrating.

During the last hundred years, migration has more than once caused ebbs and flows of the population. In 1964 it was declining. The birth rate was still comparatively high: 24 per thousand as against the Italian average of 18.7 per thousand. The fairly large natural increase (16.2 per thousand) was offset by emigration. More than 1,000 inhabitants were at that time working outside the commune, principally employed in the building industry or as factory and workshop labourers.

The prevalent outflows of emigration were as follows : Some 55% of the commune migrated to the capital of the region or other urban centres of Southern Italy ; about 35% to the big towns of Northern Italy, particularly Milan, Turin and Genoa and some 10% left Italy for Belgium, Germany or Switzerland.

The amounts of money remitted by the emigrants were considerable : 170 million lire were paid in to the Postal Saving accounts alone each year.

WHY LEAVE HOME ?

This question was put to 40 emigrants who, after spending Christmas in the commune with their relatives, were about to go back to their places of work to Northern Italy or Northern Europe. Some typical answers are given here below.

Rocco, 40 years, formerly a small farmer, now working as a labourer in a factory, in West Germany : "...I was no longer able to endure my poverty. It was as big as the sky. I was working, day by day, month by month, from dawn to dark, and for what ? For a fistful of wheat... .. Each day I had to water and pasture my cows and they gave back me only few drops of milk... My house was not a house. At beginning of each winter my roof fell down together with the first snow. And it was very cold. Nor for me, but for my children. ...Italy had forgotten the sons of the land, those who gave her bread, wine and milk. We existed for her only during the elections time..... Now, thanks to God, my poverty is over. I am paying something for this, it is true. I am paying in homesickness, risks and pains. This can be good or bad. It is now up to me to make it good."

Antonio, 35 years, another former small farmer, father of eight children, now working as milkman in a dairy near Zurich : "I escaped from this land. Yes. It was a real escape. I did not want to die from debt. After 10 months I was able to send 300,000 lire and pay off all of them. It has been not easy for me to earn all this money, but it was so beautiful My wife and my children have not been allowed to join me. And tomorrow I will go away again. I don't know when I will see them, next time. They are here, I am there, worried for them...Weeks and weeks without letters. She is illiterate, and only when somebody helps her do I receive a letter, But it is the same. If one of my children is sick, this is not written in the

letter. You can never know the truth and the worry stays with you ...all the time."

Constantino, a young mason, now in Turin doing the same work : "I left because here I was exploited. Twelve hours of work a day ; no overtime, no family allowance—I have a big family—no insurance against accidents. If by misfortune you fell off a building you would remain handicapped, without money and out of work. In Turin I have to work very very hard, but they pay me overtime, they pay me also the days in which I am sick....Sometimes they call me Gypsy. That doesn't matter, still they give me the salary of a Christian.'.

Giovanni, an old carpenter : "Before the war we were kings in this town. I had with me five assistants working at one time. Ten years ago suddenly, the work became scarce. My workshop was empty. No one among the young men was willing to learn my craft. Even my son preferred to emigrate. I remained alone, sad and shamed....What am I to do ? I also decided to leave and, believe me, I do not repent of this decision."

Vito, a young farmer, now checker in a store : "I am young, strong, not ugly, well...no woman wanted me because I was a farmer. They were ready to accept even a cripple as a husband so long as he had an office job. Now I am working under a roof, I have a good salary and three fathers are dreaming of me as a husband for their daughters."

Filomena, 40 years, a woman farmer now working as a family servant, in Milan : "The hoe had to be taken out of my hands. It was like a disease for me. I was ready to do anything....I started to go to school, like a child, among the children, putting my finger into the ink.... Then I reached my brother and his family in Milan. They found a job for me. I work in a house. It is warm and full of light. There is a radio, a television. Once a week I am free, I go to the cinema with my nephews..."

Ciro, a primary school dropout, now a worker in an industrial area in France : "I was forced to abandon the school because of my family's financial situation and I started to work here as a mechanic in workshop. But I did not like the job. My boss behaved like a hammer on the anvil. I went to France. A friend helped me and I found a very good job. In two or three years I will have sufficient money to continue my school so when I come back at home I will be

respected. If I had a lot of money I would like to offer all my brothers the possibility of going to the school, because this is the only way to get a worth-while life."

Donato, 38 years, a farmer, now a miner in Belgium : "I left home three years age. At that time I was in bad need of money. I want to stay out another three years then I will come back. I cannot stand the dark. I need air, light. On leaving, I gave my cows to another, but I have not sold my field. Our fathers sold out their fields to the big landlords, for a few beans, and now their graves are beyond the ocean in Argentina. My eyes are opened, I am not sleeping. I will come back and I will live here comfortably because we emigrants send back millions of lire each year, and our commune will be rich again. I have to come back. I have to hear again the bell of the Saint Rocco church and, here on my land, I shall die."

WHAT MIGRATION MEANS ?

When officials of the commune were asked this question they gave a variety of answers.

The Mayor said : "We are calling in managers and technicians from the North ; we are asking funds and incentives to the State ; we are establishing vocational training courses for young men ; we are assembling equipment, materials and planning a system of small industries....but I am afrai d that when all this will be ready we will not find the workers..... they will be in Milan, in Turin, in Germany, in France, but not here."

The officer in charge of the Agency for agrarian reform said. "We have not been able to offer them any alternative to their hunger. I mean a local alternative. It is sad for me that they do not have the choice between working with dignity in their land and going abroad. It should have been a problem of personal psychological choice, not a condemnation, like it is now."

Said a political leader : "When all the rural hamlets are empty, our commune will remain without lymph and without blood. It will be restricted to the urban centre, where the teachers will teach the children of the bureaucrats and the bureaucrats will administer the teachers ; both ruminat ing on the myth of a magnificent rural civilization, lacerated by themselves long ago."

A medical doctor believes that it is too late now : "At this stage the painful process of bloodletting cannot be arrested. Each emigrant is calling for ten more, and very soon our land will be completely depopulated. Empty houses on sterile fields. Perhaps there was no other solution for our peasants ; but then emigration means for us the death of our culture and the end of our civilization."

A secondary school teacher alleged that they were being allowed to go without doing anything to stop the drain : "We are the culprits. It is the final assault of the bourgeoisie on Christianity. Our farmers are the last Christians and the last socialists ; Christ is leaving our land together with them. Now we have to go to Palestine or to Africa to find Him again. Here, there is no longer any humanity."

A young poet : "But if they all will leave, who, in the heart of the day, will sense in his mouth the unripe taste of the bitter clay ? We are loosing the salt of the earth and without salt, how shall it be savoured ?"

Let it be said, in parenthesis, that two contrasting sentiments existed in relation to emigration in January 1964 from this poor community in the Italian Mezzogiorno : the emigrants' hope that the exodus could solve all their old problems of existence and the officials' fears that it could depopulate the land and nullify their efforts for its future development. But who dares to hesitate in making a choice between a mountain devoid of men and an old desperation overcome for the first time, after centuries of fatalistic endurance ?

Autodafe of an Adult Literacy Worker

HIS CREDO

Why should we care so much about illiterate adults ? The European industrial revolution of the nineteenth century was carried out by illiterate workers. Even today, many industrial apparatuses and machines can be operated by illiterates. If the workers need more skills and knowledge, this can be conveyed to them by TV or radio, or, in the future, by some McLuhanian non-alphabetic canals.

It is true that illiterate workers can operate, without difficulty, the simple machinery of a textile or a canning industry. It is also true, however, that if they were literate, their work would be more rationalized and better organized, accidents and waste would be reduced, and fewer people to check their work would be required. Workers' productivity would be improved, and their social rights would be pursued in more intelligent ways.

Able to read, they would understand working instructions, their working contracts, and the bylaws and regulations of their trade unions. This ability would eliminate situations such as the following. Sometimes, a document, which the worker cannot read, together with a banknote of $10.00, is given to him by the manager to sign. It states that the accident the worker suffered the day before inside the factory did not happen inside, but outside the factory. This changes the right claimable by the worker, without his knowledge of the shift. If farmers could understand the rules, the regulations, and the accounting procedures of their cooperative, they will really assume its ownership ; if they could apprehend the real meaning of the severe clauses imposed on them by the sugarbeet, sugarcane, and tomato-canning factories that buy their produce, they will negotiate better conditions before signing agreements with them. Literate carpet-weavers, for example, could understand and check the correctness of the calculations made by intermediaries in translating into money the

quantity of knots per cm^2/line, made by the weavers during months and months of hard handwork.

The more diffused literacy is in a society, the more harmonious and just that society will be. When literacy is the privilege of a few persons, then, as Levy-Strauss says, it will be utilized as another instrument of power and exploitation by a small minority to the harm of the majority. If life is a struggle, why can't everybody fight with the same weapons ? I agree with W. Porter's statement in Education for Economic Development in India and Pakistan : "Literacy should be given to all, in order that all may have an equal opportunity to enjoy social justice, to live in dignity and to participate in a viable political system." If this target is to be achieved one day, then man will not only be considered as one of the factors of the development, but as the main reason for the development.

I asked a southern Italian farmer once why he was so interested in sending his children to a distant school, and he replied : "Mister ! If the Christian[1] will grow up, the land will grow up !"

THE CLIENTS

Approximately 50 percent of the school-age population of the Third World, because of the low rate of initial enrolment and because of the high rate of dropouts, is, at present not receiving any formal education. Thus, when the children of today reach the age range of fifteen to twenty in the 1980's, they will be adult illiterates.[2]

It can be said that about fifteen million new illiterates are to be added each year to total number of adult illiterates, estimated today at 783 million. The condition of these emerging illiterates must be considered critical. The majority of them live in or near urban areas, where literacy is of great value, especially to young adults eager to start their working life in a proficient way. The only opportunity they may have to compensate for their lost schooling may be to participate in remedial adult literacy operations.

In spite of the tremendous efforts exerted to date, we must honestly say that adult literacy operations have, in most countries, had only limited success. For example, in India between 1935 and 1940, about twenty million learned to read and then lapsed back into

[1] In the dialects of southern Italy, the word *Christian* is utilized in the place of the word man.

[2] See UNESCO, Literacy 1967-69, ED/WS/146.

lliteracy. In Italy today, a hundred thousand southern workers who emigrated to the north have been listed as illiterates, but we were sure we had eradicated illiteracy all over the nation in 1955.

THE FACTORS LIMITING HIS ACTION

Let us take into consideration the objective limiting factors that not only have affected our former operations but, presumably, will continue to have a negative effect on future ones, such as geolinguistic, institutional, and physical factors. We will not examine, here, other causes that have also reduced the effectiveness of many literacy campaigns, such as the organizational, administrative, financial, and logistical ones. Nor will we examine those problems linked with the scarcity of teachers and instructors, with technical limitations, with the psychological resistances teachers develop when asked to approach the teaching of adults in a manner different from that adopted for children. All these handicaps can be, not easily nor quickly, but eventually, overcome.

The linguistic factor

Millions of illiterates are members of communities which do not utilize written languages ; each small cultural and ethnic microcosm has its own language. Laubach alone, in his lifelong struggle against illiteracy, has written 274 primers, in 274 newly established alphabets, but 274 is only a small fraction of the thousands of existing languages ! We must also stress another point : the problem is not purely linguistic, but often political, religious, historical, cultural, and always emotional and irrational, as many of us have realized upon trying to develop a transcription into a non-written language. "The problem of writing a language," as told by B.W. Andrzejewski in his Somali Poetry, "most unfortunately, has always been bound up with conflicting trends in the society because any particular view on this matter has been regarded as indicative of a personal, political and religious outlook." Some people even go so far as to reject the idea of writing their spoken language, preferring to establish a foreign language as a national language, reducing their mother tongue to the role of a vernacular second language. Thus, a permanent dilemma confronts those responsible for literacy campaigns to teach the minority group how to write their rich spoken language, respecting their logical patterns and their oral lexical patrimony, hereby giving them a written code that they will rarely be called upon to utilize, or

to teach them a useful "lingua franca," which is not spoken by the group, and the teaching of which will create many technical and didactic complications.

Institutional factors

An adult literacy campaign, if effectively developed, may result in the starting of a new conscience in the masses—literacy could become an incentive for a social revolution. This is just what many governments, sponsoring innocuous literacy campaigns, do not want to see. It is for this reason that Paulo Freire was forced to leave his country. In such cases, the literacy programme is condemned by its organizers even before it begins. In the rare case in which responsible authorities of a country are sincerely involved in the struggle, success can still be jeopardized by the direct weight or the indirect influence (*e.g.*, the creation of a state of diffidence in the people) of the following factors : a society divided into rigid castes ; permanency of the feudal or mafia structures ; property distribution that is not well balanced ; authoritarian methods of local political chiefs ; lack of social concern on the part of economic and religious leaders for improvement in the lives of their compatriots ; landlords and managers generally not interested in long-term aims, since they are moved by the quick gains made from external financial support that their enterprises receive from the government or from the banks.

Physical factors

In many developing countries, adult illiterates are motivated toward literacy. They understand that literacy brings some benefits ; increase in salaries, new jobs, scholastic careers for their children, more prestige within their community, ability to read the holy books, and so on. I have had many personal experiences that convinced me of the world-wide presence of this generic motivation towards literacy.

One such experience occurred in Naples twenty-three years ago. My literacy class was not far from the town jail, called Poggioreale, and I received this note: "I am prisoner number 2201, my name is ... I must learn to read and write. You must come to the prison and teach me. Give an answer to my friend, who gives you this 'butterfly' (*i.e.*, letter) which he has written for me. If you will not accept, when I come out I will... !" How could I refuse ? With the assistance of the director of the jail, a small group was organized, which pursued the course with success.

In a small, closed village near the Persian Gulf, an old farmer took my hand and led me to the village gate, showed me an inscription, with the name of and some data about the village, and said : "What a shame ! This thing is on the door of my home and I cannot understand it. Teach me to read it !"

The adult workers of the Third World, while motivated towards literacy, are not accessible. They are labourers, poor and busy. They work, in the same day, in industry and on the farm ; they also organize small business. They have a chrononomadic professional mobility —sixteen hours of daily work. They are constantly engaged in some ephemeral occupation, because their life is at subsistence level, and for this reason, they fight each day for basic survival. In many cases, they are forced to leave their homelands. Often, their migrations are only seasonal—six months here, six months there. We should also consider the fact that if they are farmers they will be totally employed and completely unavailable for any literacy activities during the most important seasonal cultivating operations such as harvest time. And we should consider the weight of the many national, religious, and traditional holidays.

For these reasons, in a region in which, statistically, one should find half a million illiterates, we plan a realistic programme aiming to affect only one hundred thousand young, active adults. Even in the best of cases we may have, at a maximum, only a few, thousand in the classes. After years of working in the field of adult literacy, I have concluded that the maximum time that an average adult illiterate can dedicate to a literacy class is approximately two hundred hours per year !

HIS ERRORS

First, we have misjudged the human and social personality of the adult illiterate. He has a broad experience of life and work. He has played an active role in his society. He has often carried out difficult and complicated tasks. He has developed self-adequacy and maturity, which has permitted him to exercise some control and responsible choice in his sexual life, in his family management, in the education of his children, in his familiar budget, and in his financial problems. He has been able to organize his time around his family, work, and his leisure. Often he is a member of a trade union and has participated in strikes. Sometimes, he has been abroad and knows other

cultures, other milieux, and even other languages. Why, in spite of his abilities, have we excluded him from any active participation in his own socio-educational process ? Why have we decided, a priori, what and how to teach him ? Why have we called him into a *child's classroom* and told him : "Here is the book. Open it at page 1 and start to learn!"

Second, we have misjudged his powers of reason. The illiterate, active adult affected by our programme is not a tabula rasa or an empty bottle that must be filled by us. He has a well-developed logical system. All the mental categories are possessed by him, such as the interrelations between cause and effect near and far, small and big, and the values "and," "for", "with", and so on. He speaks a dialect but with precision. He has a good aptitude for horizontal learning, as pointed out by Peter Siegle, because of his mind's capacities of associating and correlating anything learned. In spite of these capacities, we have explained to him, with the help of drawings, what "up" and "down" mean. We have given him all the concepts in isolation and in a well-organized, vertical curriculum. We have respected the so-called logic of the pedagogical progressions, which generally are completely illogical, vis-a-vis the experimental logic of the adult mind.

Third, we have misjudged the quality of the pragmatic knowledge already mastered by the adult and the value of his innate creative quality, particularly in poetry, in traditional music and in folk arts. Instead of considering him as an unskilled in writing his language, we have considered him to be poor and ignorant. How many basic elements of knowledge are already present in his mind ?

An illiterate mason, measuring and manipulating the clay, the lime, the stones, the sand, mixing them with water to prepare the cement, will not only be witness to but also responsible for some very delicate chemical processes. In the same way, when he starts to build a pillar to support part of a roof, many physical laws, *e.g.*, those involving the concepts of charge, resistance, and force, will intervene, suggesting to him the right weights, diameters, and sections of the materials to be utilized for the structure.

The same arguments apply to the members of an artistic craft, when they are melting and carving precious metals or adopting the dimensions of ancient patterns in decorating objects or in weaving carpets.

We must pay particular attention to one of the most important aspects of the adult illiterate's culture : oral poetry. It is strictly linked with the language and will directly lead us to the heart of our main concern, which is how to teach them to write a spoken language. Let us read this love song, declaimed, impromptu, by an illiterate Somali herdsman, and recorded on tape by me :

The rustle of your white *futa.*
Is like the sweet sound of the boughs of the Khabo.
Which the light wind of the evening.
Moves on the black mountain.
My heart heard once
The tinkle of your necklace.
It followed you and did not return.
How I suffer away from you.
A separated lover does not live.
Let us run to the *Cadi*, let us live as one :
Like two twins in the lap of the mother,
Like two *rer* of the same *cabila*,
Like two slopes of the same mountain.
Which no one can ever divorce.

In this poem we can find not only aesthetic inspiration but also a well organized philological structure, in terms of lexic, grammar and syntax. What grammatical rules must be taught to the author of this poem ? None. All of them are already present in his mind and splendidly adopted in his language. What we must teach him is how to encode his inspired language in a written symbolization, and that is all.

If we would like, for example, to teach him how to write "h", as in "heart", we cannot humiliate his inspiration with this kind of exercise : "the door has a hinge, the door hung by one hinge, daddy hangs a hanger." Why use very short phrases when the adult can create, and we have seen it, clear phrases of fifteen words ? Why use monosyllabic and bisyllabic words ? Isn't it easier for an auto mechanic, for example, to learn the polysyllabic word "caterpillar," which is driven by him, then to learn a simpler, monosyllabic word that is far from his experience and knowledge ? Why must we utilize, first the singular and then the plural if the adult already utilizes correctly the two forms according to his needs, in his spoken language ? Why explain, with drawings and signs, the value of "where"

and "there," which the adult already knows and uses in an intelligent way each day in his working life ? Why in teaching the active and passive forms of the verbs, do we introduce first the active, then the passive ? If an adult comes to the classroom crying : "My child, my child has been bitten by a dog !" using the passive form because he wants to emphasize that his son has been bitten, we cannot say to him : "You must say, 'A dog has bitten my child.' Next year you will utilize the passive form, which I have not yet taught you."

"Any abstraction has to be avoided !" Why ? The adult mind has a rich capacity for abstraction. The adult, for example, already possesses, in a very clear way, the idea of "hammer." Why, when we would like to teach him how to write the word "hammer," do we first show him a model or a picture, as if a hammer were completely foreign to his mind ?

An adult illiterate is already conscious of the million. He is accustomed to buying lottery tickets and he knows that if he has a chance, he will earn two or three million cruzeiros, liras, or rials. He has also planned how to utilize this amount, and how to divide it among his closest relatives and friends. But when we start to teach him mathematics, we begin with 1 to 10 (one month), then 10 to 100 (two more months), then 100 to 1,000 (another month), and for 6 months 1+2, 3+2, 3+3, and so on.

Our fourth error has very gloomy inferences. We have taught our adult to master the mechanical associations between signs and sounds, and to comprehend the static logical value of some hundreds of words—*but not the language*. No language can be fixed in the adult's mind if it is not laboriously learned by use in real situations. Words and sentences cannot be read and written in artificial classroom conditions if they have not been internalized by the adult. Only new intersubjective experiences will permit the development of new areas of language by the adult. By acting and behaving in a certain way, he is consequently able to express his actions and his behaviours by certain words. If he has been excluded from certain fields of experience, such as democracy or development, it is impossible to teach him the language of that field, just as it would be impossible to teach a rider in the desert the phrase "Close that door !" These arguments are not mine ; indeed, they have been excerpted from G.B. Vico's and L. Wittgenstein's philosophies of language, but very often I have found their confirmation in my individual, social and didactic life.

In teaching the pedantic language of the primers and readers, the didascalic language of the health and extension booklets, the esoteric language of the political rulers' speeches, we have not realized that those languages were either deaf in themselves or dumb to the adults. Perhaps this insensitivity has been the cause of all our errors, a kind of original sin.

In fact, if we really want to make the adult able to understand that the written language is a dynamic vector, having the power to transmit thoughts from him to others and from others to him, we have only two alternatives. One is to teach the adult how to graphically express the language he already knows and the other is to train the adult in new experiences, until he possesses and internalizes the correlative languages, and, only afterwards, can these languages be taught to him in their graphic form.

Any other approach would be sterile. The following examples are introduced in support of this diagnosis. Once I gave an adult learner (who was, at the same time, the doorkeeper of the school building) a written note, containing these words : "Please give me the key to the classroom." Immediately he read the phrase aloud three times. He gave me the key only when I asked for it orally. In another case, we tried to collect some data from a group of adults, by means of a questionnaire. The adult looked at it and, without hesitation, began to read aloud all the listed questions. We explained our intention more clearly and asked them for a written answer to each question. They immediately began to write but they only copied the questions. When another group of adults, working in a textile factory, were asked to compose some phrases about colours, all of them repeated phrases already learned in the classroom some days before. "The sky is azure," "Our flag is red, white, and green," and so on. No one wrote, "I wear blue overalls." Despite the fact that the blue of their overalls was the closest to them, it was not utilized for the composition, because never before had the teachers introduced it in a didactic example.

How many adults have not been able to discover the value of the written language as expression ? How many adults have completed their literacy course convinced that the language was only a pretext for scholastic exercises ? If there are truly many, as I am afraid there are, then we should no longer ask why they are lapsing back into illiteracy—they have never become literates !

Imparting to them a series of childish, mechanic, dull notions, we have insulted their intelligence and patience, we have started not a process of education but a process of stultification of their creative spirit. How can we imagine that they could forever keep the memory of such emptiness ? Why are there so many deserters, so many re-illiterates ?

The answer, I hope, should be clear now.

Techniques for a Non-puerile Literacy Teaching

(*Hypothesis for a new approach*)

1. In spite of the assertion made by some simplist pedagogists that, basically, any written text is structured by 5 or 6 basic vowels and by 10 or 11 unitary consonants, real literacy can be achieved only through a very laborious psychosomatic travail.

Adults, without any institutionalized learning experience, gathered at the end of a long hard day, in a dark room, or in a poor yard, though motivated, cannot afford the fatigue of a literacy class, unless, their participation is supported by intensive curricula, stimulating methods, maieutic techniques and autodidactic materials; all tailor-made for adults.

On the contrary, the literacy teaching tools adopted by us, during the past, have been generic, static, sterile and paternal; and, almost everywhere, they have been reproduced from those adopted in the primary schools.

It should be clear that adults, who have already taken over their own language function, their own cognitive powers, their own memory records, their own capacity to abstract, if called to repeat incessantly childish rigmaroles have no choice, but to give up.

For us : *adult literacy* does not mean skillfulness in scholastic reading and writing, *but ability to learn something through written communications*. We do believe, indeed, that the mastery of this ability is the first requirement for a development of human conditions. Thanks to it, men will be able either to receive from others : concepts, information, solicitations, or to transfer to others : thoughts feelings and experiences.

These communications between individuals, although they can be orally transmitted or aurally perceived, acquire more weight and impact because of their graphic mode of presentation.

Unfortunately, no ways have been found, till now, for a direct transfer of thoughts and feeling into written lines. Therefore, this

transfer can only be achieved by the mediation of spoken language. It is, in fact, by incoding the spoken echoes of our ideas and emotions into signs, or by decoding them from signs, that we materialise the written communication system.

In consequence, if literacy has to be intended as an ability to learn by intercourse of written texts, these texts, first of all, have to *communicate*. Therefore, the sentences, the phrases, the arithmetical expression of our literacy books must be, at the same time : *content and form, message and medium* : and their logical, spoken and written values have to be interwoven in an unique thread. It means that reading, writing and calculation have to be taught within a content area.

When, for the sake of wrong pedagogical tenets, we introduce to illiterates written structures deprived of a logically consequent content, or futile contents alien to a written form, we do not teach literacy, as it has been defined earlier, but empty automatisms, which are contraproductive.

2. From the above mentioned arguments, we can deduce the following three didactic inferences :

(*a*) all the sentences, phrases or arithmetical expressions of our literacy texts have to communicate thoughtful messages, pregnant with graphicity;

(*b*) these messages have to be expected by the learners; in other words, they must answer to some of their more urgent and cognitive needs, and fit for immediate practical adoption ;

(*c*) since any written message, as stated above, either is the echo or the solicitor of thoughts and words, it needs to be *logically and orally* thoroughly experienced by the learners, before it is *graphically* presented to them.

Such an approach should lead the adults, we opine, towards a natural and quick comprehension of "complete" written structures, without the need for long months of kindergarten mimo-mnemonic exercises.

We do not hesitate to translate this opinion into a methodological hypothesis, inspired by Merlau Ponty's existential philosophy

of the language, as follows : "Any written language structure, though not well recognized in all its analytic articulations, can be equally understood, as a whole, if the message conveyed by it is functional, and it is already experienced by the addressees. Thereafter a written language structure ought to be mastered by the adult learner if it applies to him, and totally missed if artificial for him."

Here, I am sure, certain empirico-pedagogists would probably react. They will say that an illiterate, to learn literacy, needs muscular skills, senso-motoric coordination, audiolingual and manualvisual associations, emphasizing the point that such skills, to be acquired, do not demand miraculous illuminations from written sources, but only sensorial aptitudes, awakened by mechanical repetitions.

In a certain sense they are right, but we also are not wrong. Just as thoughts interplay with sounds and signs in a written line, similarly logical and mechanical processes have to interplay in the literacy teaching. We ought to give the adults both the key for a logical understanding of a written line and the expertise for a mechanical analysis.

In the following paragraphs we shall see how such a comprehensive target could be achieved by adopting an innovative didactic approach, more sensible to the attributes of the adult mind than to the liturgies of the traditional pedagogy.

3. In the very beginning we should introduce to the adults the first instructional unit of our literacy curriculum, which is likely to deal either with vocational, or with extensional, social, economic themes according to the priorities, felt and needed by the learners. We should sensitize them on the intellectual and technical elements of the first theme by explanations, demonstrations, audio-visual support, and group-discussions. From these didactic practices : a logical intellection of the theme, together with a mastery of its spoken manifestations, should be achieved.

Once the concepts or the information, conveyed by the theme under consideration, had been sufficiently evolved : logically and orally, then their written counterparts might be presented to the adults. Sentences, phrases and arithmetical expressions, are intended as the written counterparts, of a concept or information.

These verbal and numerical expressions, being meaning bearing structures, have to be transferred, from the very beginning, to the adults, in their full integrity. Their lexical, grammatical, syntactic patterns cannot be deformed for didactic reasons, under pain of losing heir value. The attention of the learners should be called upon the expressions in their globality and not upon individual words or numbers. These latter, in effect, when elicited from the structures in which they are chained, and examined in isolation, acquire a generic significance, which is no longer that specific one needed for transferring the given concepts and information.

A written structure ought to be quickly comprehended by the learners, if with the help of drawings and photographs, they associate it to the concepts or to the information already experienced : logically and orally.

The same approach, as adopted in imparting the contentual theme of the first instructional unit and in transferring the first verbal and numerical written structures, should be followed, with fidelity, in developing the consecutive units of the literacy curriculum.

4. How and when to approach the analysis of the written structures?

This could begin from the second or the third week, by way of an autodidactic process which should be parallel to the didactic one. It should be developed during the second half of each daily literacy session.

The clear recognition of the basic articulations of a written structure, their association with the respective sounds, their fixation, their manipulation for new expressions, should be attempted by a series of progressive deductions, brought down with the help of mentorial materials, *ad hoc conceived.*

But before we sketch the main characteristics of this material, we have to spend some words on a propaedeutic point. When a structure submitted to a process of analysis is broken down into progressively less large elements, which of them will be the "brick" for new language constructions? It could be either the letter, or the syllable, the monema, *et alios.* For us it has to be : the *sound-spelling unit.*

What is a sound-spelling unit? According to R.L. Venezki : "The units which must be manipulated to relate sound to spelling are not just the letters, not just the syallables, which are not always based upon sounds, but various combinations which function as single units, all of these together are called : sound-spelling units." The minimal sound-spelling units of a given language ought to be identified in advance through investigations conducted by applied linguists. The "esse" of these units will vary according to the phonological and orthographic characteristics of each given language. In a language with a phonetic orthography they will correspond to the alphabetic letters; this correspondence, on the contrary, will not be found in languages having an etymological orthography as English or French. Meanwhile in languages with a lexic having a strong syllabic structure, as Italian or Spanish, the sound-spelling unit has to be the syllable.

5. The set of materials, which will be distributed to the learners, will be composed of the following items :

(*a*) "Sound-symbol cards", offering both auditory and visual mode of presentation, on which *sound-spelling units* are clearly written and recorded. They are constituted by small records, in plastic, having written on them the orthographic symbol of a spelling unit and recorded in their rows, the respective sound. That sound will be listened to with the help of a small record-player, like those inserted in the body of the "made-in-Japan" talking dolls, which is mechanically operated by pulling the ring, and whose cost should not exceed : 5 or 6 dollars each. These cards are meant for recognition of the sound-symbol values of all the basic articulations of a given language.

(*b*) "Evidence cards," with sentences, bearing the concepts or the information conveyed by the literacy curriculum; these sentences will have the words printed in negative characters on a black background, and each word will have its sound-spelling units slightly separated. Together with them : "Experience cards", with short written records of events experienced by the adults. These cards are meant for the acquisition of mechanical and comprehensive reading abilities.

(*c*) "Follow the dots and transparent guideways", "Grooving cards", "Wipe off marks pads", together with "Semi-programmed worksheets" and "Question-answer forms." These materials are meant for the acquisition of mechanical and expressive writing.

(*d*) "Small pocket Dictionary" with basic words elicited from the literacy curriculum and from the adults daily spoken tongue, printed in clear faces, and put in alphabetic lists. This is meant for permitting them to match their orthography and acquire the habit of using dictionaries.

(*e*) "Handout sheets", 'Workbooks,' and a simple 'Sliderule', *ad-hoc made*, which has to perform, on behalf of the adults, basic arithmetical and geometrical operations. These are meant for implementing mathematical skills.

(*f*) "Drawing worksheets", with models, having grooves less deep in each consecutive frame. This will be for the implementation of drawing skills.

6. It must be said that the materials, although potentially autodidactic, cannot be exploited in an optimum way, if the adult learners are not psychologically and logically prepared for their adoption. We could begin this preparation by sharing with them the following premises :

(*a*) Reading means to receive a message ; writing to transmit a message. Both ensure a system of communication, between individuals. There are other systems of communication, such as : the spoken, the musical, the pictorial, the cinematic, the telegraphic, etc. Each one fulfils given functions. The spoken one, which is possessed by them, is particularly suitable for sending or receiving close messages. It can be magnified by the radio, but, in this case, it works only one way. The written system can be of great worth and help in several daily undertakings. In fact it can permit them the reception or the transmission, accordingly, of :

(*i*) plans of work, checklists, extensional advice, advertisements, instructions, contracts, credit and subsidy forms, etc.;

(*ii*) familiar or official missives;

(*iii*) reflections of things, facts and thoughts;

(*iv*) records of experiences or memories, which will survive for ever;

(*v*) news about their community, their country, their world, via newspapers and magazines;

(*vi*) stories and fictions, via books.

(*b*) To master the writing mechanisms is not at all an easy task. It is a laborious endeavour, asking for continuous and constant efforts. But it is not an impossible target. Many adult persons in spite of the asperities, have achieved it, receiving back precious benefits. It can be attained also by them if strongly wanted.

7. As soon as the adults have acquired the consciousness of the task and made their responsible choice, we could continue their initiation, by imparting them the following subjects, the understanding of which should unbar the road to literacy.

(*a*) An *ensemble* is composed by *sub-ensembles* and *minimal elements*, all linked together by necessary interrelationships, *e.g.*, the human body, its organs and their parts : the society : the groups, the individuals; the engine, its systems and their parts; the plant, its spikes and their grains, etc. Other examples, offered by the adults themselves, or elicited from their experience, will enlighten the interdependence existing between given elements and given ensembles.

(*b*) The arithmetical expression, they have met in the course of the previous literacy sessions are also ensembles. They can be broken down in their sub-ensembles and minimal elements, which are the numbers and the digits respectively. Numbers represent quantity or order of things. Things can be put together, can be taken out, can be multiplied or divided, etc. Similarly, with their representatives : the numbers. The numbers can interact on each other by a series of basic operations, *viz.* addition, subtraction, multiplication, division, proportions, fractions, etc. These dialogues among number, when graphically

symbolized, will constitute the ensembles, called : arithmetical expressions. A consciousness of the mechanisms which rule the mutual relations between arithmetical ensembles and its parts, will be awakened, but without any attempt, at this stage, of improving their computational capacities. (At present we do not care, e.g., about the fact, already mentally known by them, that 2+2 and 8−4=4, but we do stress on the corollary that an identical numerical entity stands for two different processes).

(*c*) Each number is composed of digits. They are ten, from 0 to 9, and each one of them acquires different values according to the places it occupies within the number. At the same time when a digit changes its place within a number, all the number changes its value. The cognitive value of an arithmetical expression is the consequence of relations only. Then, the principle of place value will be applied to analogical situations. We should not be afraid to introduce these concepts to the learners. They are self-evident to them. They, for example, have already the sense of the place-value, gained by thinking about and by saying numbers. In fact if we ask one of them to tell us the amount of his monthly salary and his age, he would probably answer : ", . . three . . . hundred . . . forty; and . . . thirty . . . four". He knows already that these numbers can be written, then if we represent them graphically to him, automatically, he will give the right value to them, recognizing the differentiation existent between the 4 of 340 and the 4 of 34; the first being recognized by him as forty and the second as four.

(*d*) The spoken expressions are also ensembles. They can be broken down in oral words, and these words in speech patterns or sounds. Oral words and sounds are respectively sub-ensembles and minimal elements of a spoken expression. The first : meaningful; the second : meaningless. Didactic and autodidactic examples of oral expressions analysis will be introduced, or elicited, going, firstly, from the expressions towards words and sounds, and successively, from sounds towards words and expressions. The principle of place value will be applied to oral expressions with

appropriate examples : sounds composing given words, when assembled in different ways give birth to words having different significance; words changing position within the oral expression give a different meaning to it, as the different pieces of wood composing a table, can be de-composed and utilized for making a chair. (No memorization of specific series of sounds composing given words, will be attempted at this stage).

(*e*) The written lines are also ensembles. They can be broken down in written words and these written words in spelling patterns or signs. Written words and signs are respectively : sub-ensembles and minimal elements of a written line. The first : meaningful; the second : meaningless. Didactic examples will be presented, going, firstly, from the line towards the words and the signs, and, successively from the signs towards words and lines. The principle of place value will be applied to written lines, with appropriate examples. (No recognition of specific series of spelling patterns structuring given words, will be attempted, at this stage).

(*f*) Thorough comprehension of how meaningless patterns contribute to establish meaningful structures; their symbiotic relationship will be examined, by comparative analysis, in various, oral and graphic, verbal and numerical, ensembles.

(*g*) Introduction of the concept of *sound-sign association.* First identification of a correspondence between orthoepic and orthographic values. Practice in the mechanism of phonetico-graphic connexions, by aural and visual exercises, going from the sounds towards the signs and from the signs towards the sounds. (No fixation of specific sound-symbol units will be attempted, at this stage).

Finally, we should brief the adults on the materials. By demonstrations, practices and rehearsals, we should teach them how to manipulate, how to operate, how to utilize each one of the above listed didactic tools.

As soon as the expertise needed for exploiting the supporting aids in all their virtualities, has been developed, an entire set of material should be, individually, assigned to them.

8. At that time they should be ready for the "taking-off". Therefore, they should be left free to discover, automously, how to convert in sounds of their tongue all the graphic patterns of their literacy texts and booklets; they should be left free to discover how to transform in signs all the sounds of their mother tongue.

9. The second literacy phase should be developed by taking the following steps :

(*a*) The attention of the adult learners had to be called not only on the more frequent words, as we have done until now because these latter alone cannot help the adults in understanding printed texts, but on those words, having a strong, pivotal key-meaning, which can permit, alone, the further decodification of many others. Words, whose radical semantema, *i.e.*, whose roots, carry out a meaning which constitutes the "foundation" of an entire word-family, like *work* in *worker*, in *workable*, and in *workshop*, etc. These key-meaning words should originate in the adult's mind the process of association between a sign and many ideas, and lead them to a rich lexical mastery. In effect they possess a virtuality of extension in a whole gamut of new symbols, different but affixed to them. They might act, taking a G.B. Vico's example, as the "point", which multiplying itself in a "line", keeps and loses, at the same time, its first essence.

(*b*) Another very important element for the adults' larger and more thorough comprehension of the written language, had to be the ability to recognize and understand—by decomposing the words already known by them—some specific structural elements, such as the prefixes of motion, change, addition, etc., and the suffixes of declinations, gerundives, etc., for example *re* and *ed* in the word *recalled*. Each one of them has an intrinsic logical value, and brings a virtuality to form new significance, when integrated with other roots. The minimal element : *re*, for example, will be assimilated with the idea of iteration and, if the adults know already the words turn, make, adjust, and action, immediately and easily they will understand "return", "remake", "readjust" and

"reaction". Analogous processes of new acquisitions will be developed by discovering the logical value of prefixes as : *ad-*, *mis-*, *im-*, *un*, etc., of suffixes, as : *-ly*, *er-*, *-ion*, *-ing*, etc., and by composing them with various roots already known. How many words, by this method, will they be able to discover ? Thousands and thousands, and progressively still more. Words which it would have been impossible to introduce to them one by one, explaining their individual specific meaning. Therefore, in selecting words, we adult literacy workers, should take into con sideration four factors :

(*i*) their frequency of occurrence;

(*ii*) their key-meaning value ;

(*iii*) the variables of their meaning when conveyed by words having a strong graphic affinity with them ; and

(*iv*) the value of some of their structural constituents in function of new linguistic constructions.

(*c*) The key-meaning words and elements had to be introduced progressively to the adults and always elicited from real lines, real phrases, real sentences, and real pages. Their understanding had to orignate in the adults' mind a new process of association: that between verbal graphic structures and ideas; these latter, indeed, can be expressed graphically only because uncertain words have been inscribed in precise forms. The adults had to be led to discover that any printed line has a logical value and an intimate music, that the pages of a book can speak to them as a friend whispering words in their ears.

(*d*) Further step to be taken, during the course, is that of approaching the adults more closely with the graphic symbology of some of our written expressions. Our "writing" records convey not only words but sometimes also cryptograms, keeping many pictorial aspects of the first non-phionological human languages. Written language in a real situation can show, indeed, the following lines : "*Mr.* Fox is kindly invited to participate to the Trade Unions Annual Meeting which will be held at "White Horse Hall', 57/8, Road 'B', near 'Ground *Xssing* Station',

on Tuesday 7th/3/'60 at : 7 : 45 *p.m.* Annual subscription : £2." This example confirms that our written language is not always the graphic echo of spoken words ; it becomes sometimes a system of human intercommunication by means of conventional visible marks. Now these specific non-phonological aspects of the language ought also to be known by the adults in a way that the communication conveyed by a written text can be, plenarily, received by them.

(*e*) Subsequently they had to be provided with *introductory cards* filled with simple explanatory guidelines, propaedeutic and vehicular to the understanding of the most relevant witnesses of the vocational and aesthetic literature available in their milieu, together with a new pocket dictionary, in which the meaning of some unknown expressions, present in the above mentioned literature, would be put in relation to those already known by them.

(*f*) Some literacy sessions could also be devoted to the establishment, with the adults' participation, of evaluative forms, which can permit the comparative control of different sources related to the same topic, and consequently lead the adults towards a critical reading.

(*g*) An adult, or many adults together, who reveal creative writing abilities, had to be incited to produce an : "opera prima". Their work, then, had to be printed and commercialized. We have experience of farmers who have been able to write chronicles of their working and family life, with style and emotion : their free and natural expressions have been a great interest to a large number of new and old literates.

(*h*) Finally, before the end of the institutionalized literacy course, self-instructional materials on subject matters, chosen according to the adults' interests in vocational upgrading and in general knowledge, had to be provided to them together with an introductory orientation on how a "programme" works. In such a way that it would be easy for them to attempt, after the end of the course, the continuation of their learning processes, by utilizing self-instructional materials and without needing the help and the assistance of an instructor.

Exercises, practices, progressive experiences ought to make them able to acquire, little by little, a habit towards comprehensive reading and expressive writing ; a habit which had to pervade their life.

10. Traditional educators may argue : "Will not such a complex approach, confuse the adult minds and sterilize their motivations more than the traditional one".

We do not believe so. Surely the approach, here above hypothesized, needs to be better designed, its teaching-learning processes more clearly delineated, its materials prepared "ex novo" ; its apparatuses made available in their didactic configurations ; it has, then, to be tried out in real practices and, lastly tested, evaluated, revised.

The results might be long in coming, but they ought to come.

A Method of Integrating Literacy with Occupation

One of the basic requirements of a Functional Literacy Programme is the integration of literacy with occupation : be it agricultural or industrial. This integration can be achieved to a greater or a lesser extent according to the vocational homogeneity of the groups, and to the degree of coincidence between the contents of the didactic curriculum and the workers' problems, *i.e.* it will be fully achieved when we are dealing with a homogeneous group of semi-skilled workers already involved in the trade who intend to continue their work in this field and make it more productive. No integration can be achieved with a heterogeneous group of workers involved in various different trades and approached outside their place of work. We hypothetically assume here and now to be dealing with a group reflecting these optimum conditions.

What do we mean by integration of vocation and literacy? By definition : that we should teach technical and literacy elements simultaneously. The effect of integration of literacy with vocation is two-fold :

(*a*) the method of teaching should be based on a global technique, as the other techniques (eclectic, mixed, phonetico-syllabic, etc.) will exclude a priori the simultaneous teaching of the two elements;

(*b*) the more frequent words of a daily language may be excluded in the beginning because they do not answer to the needs of the vocational content.

We must point out here that the word language is to refer not only to the vocabulary, but to the logical structures of the adult's mind as well.

To teach a new language able to express simply but precisely technical concepts and consequent terms of a working operation means that the workers should be trained not only in reading, writing

and calculation related to their skills, but also in mathematical processes and in the rational principles regulating their working operations. It means that the integration to be achieved is that of literacy-vocation-scientific acculturation.

Once the integrated approach and the global technique of teaching have been accepted as necessary; we must then guard against the danger of giving the workers technical words associated with wrong concepts due to a lack of appropriate understanding and experience. You cannot teach globally to a child the word butterfly unless he has seen the butterfly and unless he calls it butterfly (in many countries children are accustomed to call animals by words of their regional dialects which differ from those of the national language). And, a fortiori, we cannot teach the word micron to workers if they have not yet understood in a very clear way its concept, and if they not yet had any experience in the processes in which it is involved.

The consequence of the foregoing is that the integrated approach demands that group leaders and instructors have to give firstly a precise understanding of the concepts and the processes involved in the working operations performed by the members of the group and afterwards elaborate these concepts and processes with drawings, numbers, formulae and words, all expressed in basic logical structures. In other words, new ways of thinking should be awakened to, and only when new thoughts have been achieved, should we teach the workers the corresponding phonema and graphema.

But are these rational elements really and truly new for our workers? Should our task be based on giving them new thoughts and logical rules, or on eliciting thoughts and rules which they already possess in a pragmatic and vague way in view of their precision and definition?

Our learner is an adult worker, living in a developing situation. He already possesses the basic and practical knowledge required for the needs of his working life. For that reason almost all the initial concepts we want to teach him are basically already in him. He knows, e.g. the meaning of basic words linked to his work, *i.e.* he has already in his mind the ideas shaping the tools, the objects, the operations of his daily task. He utilizes pragmatically in his working

operations many arithmetical, geometrical, mathematical, accounting, physical, chemical and other principles and rules.

Perhaps the meaning of the arguments we have introduced above will be made clearer by the following examples.

An illiterate carpenter who daily manipulates rectangular pieces of wood should be made able, with the help of an instructor, to understand the Euclidean definition of the rectangle and the possible application of this definition to rectangular objects other than his pieces of wood. This acquisition should easily permit him to obtain a written knowledge of small phrases, including the words rectangle, angle, plane, figure, and straight line, together with some arithmetical and geometrical principles and rules, which can easily be elicited from his experience and defined rationally, followed by utilization for diverse and more complex and precise applications.

An illiterate labourer, working in the dye section of a textile factory, who spends all his working day with his hands in colour vat, can easily be taught the principles regulating the composition of colours, the progression regulating a colour range, the frequencies ruling this colour range and their further applications to geometrical scales or sound notations, as well as small phrases indicating the relationship between the subjective and objective elements of a colour spectrum.

How many scientific principles are involved in all the numerous operations of a rural enterprise? One scientific principle is involved when the farmers measure their fields, by a pragmatic use of the Pythagorean theorem, and another is involved when they prepare the soils. Planting, fertilizing, harvesting, stocking and marketing also call for scientific principles.

Hence our first intervention should not consist in giving him external notions, etc. but in allowing him to benefit consciously from his inherent mental patrimony. What we must try to do, in the beginning, is in effect to extract maieutically from his mind the concepts ruling his concrete working experience. We have to attempt a rational and scientific process of clarification and precision of these concepts and simultaneously we must assist him in transferring them into logical structures of language expressed by graphic symbols : drawings, simple formulae, numbers and words.

By this process the worker is led to understand not only the enlightened links between the abstract concepts and the concrete facts which are present in his daily experience, but also the intrinsic structure of a rational enunciation and the inter-relations between its components : symbols, numbers, words, etc. Successively he would almost surely apply the logical rules, when composing the words he has learned into written sentences. These sentences, little by little, will form the basis of a new, more precise technical language, the only one able to simulate improved and more productive working performances. In that way, the word which was for him only a means for communicating or expressing poetical feelings became also : thought and function. This target leads us to think that the integrated approach could be considered the first step in a lifelong educational process, aiming to improve not only the skills and the productivity of the workers, but also to develop in them a continuous interest in scientific acculturation, a better understanding of their professional role and a more responsible attitude towards their social duties and rights.

Taking into account the considerations introduced previously, we suggest that the didactic process should be developed according to this new chronological progression :

(*a*) Group discussion on the working task.

(*b*) Demonstration related to the working task under experience.

(*c*) Induction of the rational principles and rules: mathematical, geometrical, chemical, etc. merged with the working task.

(*d*) Graphic symbolisation of the above by drawings, numbers, arithmetical relationships, simple formulae and words, as appropriate.

(*e*) Summary discussion and written formulation of the first small sentences.

(*f*) Application of the principles and rules appropriate to situations other than those under consideration (*e.g.* dealing with electricians : from the dynamics of an electric circuit for illumination to other electric processes : thermic, mechanic and chemical).

(g) The working task chosen as a field of study in the beginning and examined till now without any urgency of time and money, will be reconsidered in terms of its economic value. Time, money, precision, technicality, perfection will be stressed in order to permit the members of the group to achieve a better standard in their working performance and productivity.

From the beginning the worker will be encourged to write down in a small hand-book, composed of several sheets, drawings, rules, numbers, formulae, words, small sentences, geometrical enunciations, arithmetical relationships, check lists, working instructions, etc. pertaining to working task under experience. In that handbook we hope, the imperative will give precedence to the indicative present and the working instruction to the plan of work.

This is to say that priority has to be given to writing instead of reading. Contrary to what we have been commonly taught to think, the illiterate adult learns more easily to read what he has written than to read what has been written for him by others.

By writing, the adult makes the first attempt to express freely and autonomously his experience. Generally he does it in a very essential and rigorous way, free from the mystification of any popular eloquence. It is, for him, the first witness of a new responsibility : to be himself.

By writing, we do not mean the mechanical, almost unconscious, graphic reproductions of sounds, as for the children of the Montessori schools. We mean a way by which the adult can evoke his experiences : a laborious, complex activity, which goes from the thoughts to their phonological echoes, from these latter to their corresponding graphic signs and to their coordinate fixation on the paper and finally to their recognition by silent reading. Writing, thus, as a series of progressive and autonomous operations versus reading, when scholastically conceived as a series of passive mechanical repetitions of lines, framed by others, only for didactic purposes.

And last but not least : once the writing has been internalized by the adult as an act, as a function, as a behaviour, it will never be arrested, and perhaps will never lapse into illiteracy.

The interest in reading books or newspapers written by others, i.e. full reading ability and comprehension, will be achieved only after the first months of a course, when the adults possess all the mechanical elements of their language (monemas, syllables, letters) which were present in the numerous technical words they have already learned. Moving along the path from sentences to phrases, from phrases to words, and from words to letters they will utilize, in an autonomous way, or with the conditioning assistance of the instructor, these elements in identifying graphically all the basic words of their language.

This is the moment at which their interests in reading booklets, pamphlets, bulletins, newspapers and any other written document will emerge. This is the moment of the reading explosion and abundant and appropriate reading material should be prepared in advance to answer their thirst for knowledge. Having learned before to write : "I am doing something" then to read "Do this !", they will be able to read wiih a critical mind, and we think and hope that they will have perhaps also the capacity to accept or refuse what the books tell them.

Hence, at this stage, via the integrated approach, the adult will also reach in an easy and quick way the target fixed by the traditional literacy campaigns.

We have written in the first lines of this chapter that the integrated approach can be developed in a correct way when, from inside, we are dealing with a homogeneous group of workers, already involved in a trade, who intend to continue their work in this field and make it more productive, but now taking into account what we have written in the preceding paragraphs, we must also add that the optimum conditions for an integrated approach will be found, indeed with a homogeneous group of workers united in a cooperative or in an enterprise conducted by self-management.

The integrated approach aims to determine a socio-psychological change in the workers' attitude towards their position in society, a new consciousness of the role they must play in the transformation of their society for the success of the development policy.

The illiterate workers, living in an underdeveloped country, consider almost always that manual labour is a disagreeable necessity

and sometimes a penalty. They regard their working conditions as slavish. The attitude they assume vis-a-vis work is generally a state of passive resistance. They think that the only true work is tha done by the brain.

There is a great gap for them between the "professionals" and the "labourers". The first are the "hammers", the second are and will be the "anvils". In some Mediterranean languages, two different words are employed to define "work" : one 'travail' for the manual work, and another 'establishment' for the mental work. Frequently the workers of a developing country show a certain interest in receiving teaching or training. Generally it is not because they would like to improve, but to escape their present working conditions. Today, fatiguing for ten hours, they dream of a tomorrow, sitting on a chair at a table, possibly reading newspapers. That is, they have understood that by becoming an office attendant, they will gain two tangible rewards : liberation from travail and increased social prestige. Literacy and education are for them useful means to alleviate their unjust conditions and to reach what they consider a more agreeable position within their society, *i.e.* establishment, even at its lowest level.

For these reasons they are often more motivated towards traditional literacy, giving them new hopes together with words and poetry, attributes of the rich and important persons, than towards functional literacy which they sometimes presume will bind them to a permanently low and poor condition.

Only a speedy and eventual breakdown, of course, of all the feudalism still surviving in the present time can eventually change these attitudes. But what can we do, we who have chosen not revolution but education in order to approach the time when the workers, particularly those who are living in a developing country, might feel themselves a little more free, a little more responsible for their destiny without becoming mandarins or barons, ministers or lords?

First of all, we must try to convince them that even in a feudal society the separation of the brain from the hand can be unnecessary. How? I think that the arguments we have examined in the foregoing paragraphs can answer this question. Helping them to discover in

their modest working operations the wealth of the rational principles and then urging them to exploit the potentiality of this discovery as an incentive, as a beginning of a progressive change in their behaviour and consequently as a mean to improve their present conditions. Little by little, they should find in their work some new energies, some new vitalities and also some new facilities, all together permitting them to give and to receive more from their society. And may be for some of them, we hope, also a high reward of work, not merely to be suffered as a form of slavery, but desired as freedom, creation, joy.

Without this change in their behaviour, workers living in a transformation zone cannot offer any responsible participation, nor any professional mobility to the development programme. And without participation and professional mobility of the workers, no new governmental development policy can be successful.

The story of a small Functional Literacy experience carried out, in 1968, in an Iranian Textile Factory, within the frame of the Unesco-ILO-UNDP-Iran Work Oriented Literacy Project, may support the methodical argumentations elaborated in the preceding passages of this chapter.

The principal objective of the experience was to test whether instruction in work-related skills and knowledge could be integrated with literacy teaching. Linked with this aim was the attempt to determine how effectively literacy could be related to the daily problems of the work situation.

The importance of the first objective stems from the obvious fact that even the most modest levels of technical instruction require the use of abstractions, symbols and verbal representations. For example, in the spinning department of the Taj mill, the various blends of yarn are specified by number and name, and in order that a specific production batch be reproduced correctly, the specifications must be adhered to faithfully. In order, therefore, to teach the spinners something more than mechanical skills, instruction in colour names, the factory colour code, and the yarn mix codes must be given. The progression of words or letters cannot be dependent upon formal laws relating to the learning of the alphabet, building of syllables etc. Nor can technical instruction wait for complete literacy.

At the beginning, the group was composed of thirteen wholly illiterate workers from a single shift in the spinning department of the mill. Each member voluntarily remained for an additional hour-and-a-quarter after his shift was over or, alternatively, arrived at the factory early, depending upon the time of the shift.

The teacher was a graduate in textile technology from a vocational high school. In addition to two months general Training he was given about forty-five hours orientation and instruction in the methods to be followed, with the group. At the outset he received daily briefing and guidance in the conduct of the group. Daily lesson plans, written and graphical instruction material, visual aids, etc. were prepared by the Industrial Training Section with the collaboration of the Adult Education Section. The material used by the group was thus synchronised with the progress of the group.

The technical content of the curriculum was based upon an analysis of the practical work problems on the job colour recognition and specification, yarn mixes, quality control, etc. Also included were the relevant calculations and general topics such as hygiene, social studies and geography. This more general material was at all times linked with the core of technical subject matter. As the technical content was introduced, graphical material, models, demonstrations and experiments by the group members themselves were designed to enrich the instructional activities.

Each day a few key words were drawn from the groups members' discussions, were learned globally and practised in simple phrases related to the technical content. No instruction was given about the alphabet or syllabic structure of the words. A sight recognition vocabulary of about 200 words was achieved in three months. At that time a quick survey showed that only a small proportion of the 77 Farsi letter shapes, mostly the more infrequent forms, were not included in the words already learned. With the judicious selection by the teacher of some new words from the group discussions, all seventy-seven forms were included in the words learned as wholes. By this stage the group members had spontaneously begun by decipher written texts, recognising, writing, and reading letter and syllable combinations representing words which where known to them orally but not yet included in their exercises. Two booklets were produced for exercise purposes and these recorded, page by page the words and phrases used by the group

members, week by week, as their mastery of letter forms improved. Practice and supplementary reading material completed the learning process. A factory magazine to which the class members contributed, was produced three times during the course and distributed, to all workers. A series of slides and a short 8 mm experimental film were also produced with the involvement of the learners.

This experience demonstrated to us that :

(*a*) Literacy can be integral element of vocational instruction. Scattered key words from discussion, learned as wholes, harmoniously develop into a vocabulary of technical words and symbols which in a short time becomes a useful basis both for further technical understanding and for rapid expansion of literacy skills.

(*b*) From the beginning, pertinent knowledge and understanding of technical processes and instructions can be taught; long before full literacy is achieved.

(*c*) Literacy, a command of verbal representation, dexterity in the combination of letters and syllables for reading and writing the total adult vocabulary, can emerge from the global possession of a limited number of written technical words which constitute the basis for analysis and synthesis of many other words drawn from the total oral vocabulary.

The Esfahan Functional Literacy Pilot Scheme : Planning & Developing Its Curricula

Ideally, the objectives of the Esfahan Pilot Scheme should have been derived from a set of more comprehensive social and economic policy objectives for the region in which it was to operate. But at the time in which the scheme was launched, such objectives were not available. It was, however, evident that the region was undergoing a transformation from an economy based on traditional agriculture, an obsolete textile industry, and handicrafts to a reliance on more advanced industry and market-oriented agriculture.

More specifically, under the Fourth National Development Plan (1968-1972) the prospects were that large scale investments in infrastructure and the construction in the in Reeze of the country's first iron and steel complex would gradually transform Esfahan (the population 450,000) into a nucleus of industrial growth. Agricultural production could also be expected to increase significantly from a doubling in quantity of irrigated land surrounding the city made possible by the completion of the Shah Abbas Dam. It was thus to be hoped that the development of industry and transformation of agriculture would produce a dramatic improvement in the economy of the region.

Both national authorities and members of the international survey missions were aware that for these promising economic prospects to be realized, it would be necessary to prepare the illiterate and low-skilled workers for the new occupational roles demanded by the changing situation. Thus, the fulfilment of manpower training needs was assumed in the 'Plan of Operation' to be a general objective of the Esfahan Pilot Scheme. The training programme was intended and designed by its national and international sponsors to yield both economic returns through increased worker productivity and educational returns. These latter would include a reinforced sense of self-esteem among workers and an enhancement of motivation in the pursuit of both individual and social development goals. A hope for secondary effect was an awakening of social conscience in

managers and technicians, some of whom were unenthusiastic toward the inception of the training programme. Geographically, the areas of operation for the Scheme were confined to the industrial area of the city and its semi-industrial and semi-agricultural suburban zones.

PROGRAMME PLANNING

The diagnostic phase

In order to determine the subject areas of the programme, an identification of regional manpower training needs was required. This was undertaken by the Evaluation and Technical sections of the Scheme and was based upon the projections of planners and on the opinions and perceptions of managers, technicians and workers. Use was also made of information contained in the Fourth Five-Year Plan for National Development and the reports and studies prepared by the technical bodies responsible for major development projects, *e.g.* the Reeze steel complex and the Zayanderud irrigation project. Finally a network of contacts was established at the various levels to obtain up-to-date information on current occupation structures and anticipated changes. These contacts were at three levels: (*a*) at the *regional level* with the administrators and officials for such activities as agriculture, agrarian reform, industry, labour, health and education as well as with technicians working on regional development projects; (*b*) at the *community level* with village leaders and residents and with groups of managers, technicians and workers in the factories; (*c*) at an *individual level* with farmers and workers, technicians and assistants, and administrators and managers. Information from this last level provided an insight into the relationship between the felt needs of individuals and community and regional development goals.

In addition, two particular studies were undertaken under the Scheme. The first concerned job problems encountered by workers at the Taj Textile Factory. The second was on the training needs felt by farmers living in rural communities in the Pir Bakran area.

Selection of subject-matter

The investigations referred to in the previous section took place during the first two years of the Scheme. During this same period, field operations were begun. In 1969, the results of investigations and field experience, together with the suggestions of consultants, permitted a selection of the specific fields of intervention or training subject-matters.

These are presented below by sector:

Sector I

—Sugarbeet cultivation
—Plant protection
—Irrigated agriculture
—Simple agricultural mechanization
—Mining

Sector II

—Automative maintenance and repair
—Building construction
—Textile
—Iron and steel production

Sector III

—Embroidery
—Metalworking handicrafts

Each training programme was designed for a group of workers with similar occupational and educational characteristics. With adaptation, these same programmes could probably be applied in other regions of the country with analogous manpower structures and employment opportunities. To the specific programmes, four general ones were added, namely :

—General agriculture
—Pre-vocational training
—Health, nutrition and family planning
—Civic promotion and social integration

These more general programmes were considered necessary after the extension of the programme by the Iranian Premier to all sections of the General Governorship of Esfahan (population: c. 2,000,000). The diversity of the various regions thereby included in the Scheme required programmes adaptable to the education needs of a quite heterogeneous adult population.

CURRICULA DEVELOPMENT

Basic information

Before attempting to elaborate the curricula, a file containing basic data and information was established for each sub-programme. Among the information included in the file were the following :

1. Subject-matter of instruction (*e.g.* sugarbeet culture).
2. Description of participants.
3. Proposed rationale for selection and elaboration of curricular content.
4. Objectives of the curriculum.
5. Anticipated social, economic and behavioural changes.
6. Lists of potential co-operating agencies and personnel.
7. Qualifications and other information on instructors and supervisors.
8. Prospects for expansion of the programme.

The skeleton of the curriculum

A list of tasks considered essential to job performance constituted the skeleton of the curriculum for each subject-matter area. In selecting and defining such tasks, both the present nature of the work and anticipated changes resulting from the application of improved technology were considered. It was thought desirable that the sequencing of tasks be closely related to the order in which such tasks were performed in a real job situation. This approach was, of course, sometimes in conflict with a pedagogically ordained ordering of tasks from simple to complex. Finally, it should be noted that each working task constituted a separate content unit.

Breakdown of subject-matter content

The correct performance of a working task requires : (*i*) skills, *i.e.* body motions, physical manipulation, etc. ; (*ii*) knowledge, *i.e.* theoretical and rational principles relevant to the task ; (*iii*) aptitudes, *i.e.* dexterity, timing, etc.

Recognizing the number of simultaneous processes involved in the performance of even simple task, it was agreed to break down subject-matter content into parallel rather than sequential components as follows :

Functional: Analysis and demonstration of the working task (movements and techniques, etc.).

Rational; Logical implementations (graphic representation, mathematical concepts, scientific or other principles relevant to effective task performance).

Social: Socio-economic factors (resource inputs and production outputs); socio-anthropological dimensions (consideration of cultural values and their implications for job performance).

Instrumental: Basic mathematical skills (arithmetic, accounting, geometry, chronology, etc., mainly utilized for technical calculations); basic communication skills (reading and writing, mainly utilized as a vehicle for communicating technical information).

The dosage

It was considered necessary to include ln the curricula only those skills and that knowledge fundamentally related to the performance of a particular task. For each unit this typically included the following:

1. A description and analysis of the practical abilities needed to perform the particular task.
2. One scientific and one mathematical concept deduced from and relevant to the performance of the task. Where possible, analogous application of these concepts to other working tasks were brought to the learner's attention.
3. A reference to relevant socio-economic considerations.
4. A reference to relevant socio-anthropological considerations.
5. Practical exercises in basic arithmetic and language skills to the extent required for comprehension of the curricular unit.

The curricular unit

Each curricular unit was designed to integrate the practical and intellectual constituents of a training task. While short units were desirable in that they permitted learners to progress rapidly, a natural and non-artificial integration was most easily achieved at a slower pace. In practice, units requiring from a minimum of five to a

maximum of twelve working days were most successful. Each instructional session lasted 90 minutes—the maximum amount of worker time available for instruction—and was divided into segments according to the requirements of the theme to be developed.

Combination of curricular components into an instruction sequence

The coincentric diagram 1 reproduced at the end of this chapter illustrates the inter-relation of the intellectual, social and practical elements and their integration into curricular unit. The typical number of working sessions devoted to a particular component is indicated for each quadrant. As shown, each portion of the curricular unit was illustrated with appropriate language and arithmetic exercises.

Behavioural changes

The development of motivation toward individual and social development was earlier mentioned as one of the primary aims of the Scheme. How has this objective been implemented?

Experience has shown that inducing attitudinal changes is a necessarily gradual process. Neither indoctrination nor demonstration is of much use in achieving lasting changes. Rather the adult learner must, by degrees, be brought to develop habits and accept an outlook conducive to the types of behaviour that he is being induced to acquire. It was thus considered unrealistic and unrewarding to insert teaching about attitudes into the curricula. However, in developing the content of each unit, an inducement to new attitudes, values and behaviours was interwoven with the presentation of information and knowledge.

For example, by providing both the opportunity for adults to reflect rationally upon their working experience and the expectation that they should do so, it could be hoped that little by little they would shift from an unthinking acceptance of realities to a critical understanding of them. In particular, by making the adult learner witness the socio-economic implications and historic origins of their functions, it was expected to instill in them a new consciousness of their social rights and responsibilities.

Length and scheduling of training courses

On the basis of previous experience with adult literacy training, and in view of the working calendar of the Esfahan labourers, we

began with the premise that each training curriculum should cover a period of a year, divided into two six-month cycles.

Training sessions averaged 90 minutes. Since sessions could not be scheduled on a daily basis, it was possible to schedule only some one hundred and fifty working hours into the three hundred day calendar which comprised the working year. This was considered the minimum length of time for workers to retain their skill and knowledge and begin an autonomous process of learning.

In practice, it proved impossible to fit all training programmes within a calendar year. The principal constraint encountered was the time available to participants, which was always limited and broken into difficult-to-schedule segments. The distance between home and training centres, the mixed and varied nature of the trainees, job turnover, alternating weekly shifts, family obligations, the agricultural season at hand, or overtime in the factory were among the difficulties with which the training schedule had to contend.

DEVELOPMENT OF CURRICULAR COMPONENTS

The following sections explain and illustrate the integration of language development and mathematics within a particular functional theme.

Language development in spoken and written form

The primary function attributed to language, within the content units, was that of transmitting written information to workers in order to facilitate their assimilation of required skills and knowledge. (Needless to say, the acquisition of literacy skills should also open new opportunities for individual and social developments.)

In selecting and developing instructional material, three principles were applied : (*i*) all written words, phrases and sentences included in the curricular unit should communicate, or aid in the communication of, thoughtful and graphic messages conveying the technical information or knowledge required by the content of the unit: (*ii*) the 'meaning' of the written message should be logically and carefully developed before its graphic presentation; (*iii*) the recognition of written symbols, their association with particular sounds and exploitation for new linguistic construction should be developed

through graded exercises and other instructional materials. The particular method employed was the analytic-synthetic approach defined by Willlam S. Gray: 'it entails the selection of words, sentences and simple passages, which the learners analyse, compare and synthetize, more or less simultaneously, right from the beginning, and in doing so become acquainted with the elements of the language and with the mechanics of reading and writing'.

In 1969, upon the basis of two years of field experience and in consultation with the Department of Linguistics of Teheran University, it was possible to establish uniform norms for selecting logical grammatical and syntactical patterns for the basic and technical language which had to convey the content of the curricula. More precise criteria for establishing sequences and word frequencies were also determined at this stage.

In fact, the criteria referred to above were applied in a 'multiform' rather than uniform manner. The pragmatic judgments of various national specialists produced numerous variations in the curricular language programmes. Such variations may well have served to adapt the curricula to their multifold objectives ranging from language development to vocational competence.

Ex-post analysis reveals that *on average* the curricula introduced workers to one thousand written words: 450 in the first cycle and 550 in the second. Diagram 2 reproduced at the end of this chapter shows the average number of new words introduced in the first four curricular units. With it there is the Diagram 3 which conveys a summary of the average rate at which new words were introduced during the first cycle of the curricula. Within the first three months of operation, the 76 alphabetical patterns occurring in FARSI were introduced and analysed. Qualitatively, out of the total of 450 words introduced in the first cycle of the curriculum, more than 60 per cent were 'athematic' non-technical words such as conjunctions, articles, pronouns, basic nouns and verbs. Of the remainder, three-quarters were technical terms of known meaning to the participants and one-quarter technical terms of unknown meaning. The average frequency of word-use was five times within the unit in which it was introduced and two to three times in the units that immediately followed.

While the words encountered by the learner were usually familiar to him, the same was not always true of the grammatical and syntactical structures of expressions. The inherent logic of technical themes

frequently required verbal structures unfamiliar to the adult mind and tongue. For these reasons, it was necessary to precede the introduction of such structural patterns with preparatory explanations and discussions designed to make their usage familiar to the learner. Where successful, the approach implied that the workers were not merely learning to read and write but, more fundamentally, were being induced to adopt new logical and expressional categories.

The mathematical progressions

During the first two years of the Scheme, the approach used in structuring the mathematical portions of the curricular units was highly traditional. Counting (one to ten in the first week, ten to a hundred in the second week), was introduced first, next addition, then subtraction and finally multiplication and division. While the workers showed high mental capacity for calculation in implementing the practical activities, the written evaluation results were very poor. These unfavourable results stimulated the development of a new and more accelerated approach. This consisted of the following :

1. The induction of the primary mathematical concepts involved in the working of a particular curricular unit.
2. Representation or visualisation of the concepts with graphic aids.
3. Elicitation of the rule or formula.
4. Application of the rule (or formula) to examples derived from real situations and calling for mental calculation.
5. Inventorying the written arithmetical operations involved in the formula.
6. Selection of a single operation, from among those not yet formally introduced, to be covered within the unit.

On the basis of an analysis of two curricula—namely, 'Automotive Mechanics and General Agriculture'—it was concluded that all basic arithmetic operations might be introduced to the worker within the first eleven weeks. The efficiency of the new method appears to reside in the fact that blackboard explanations derive from and follow the worker's mental processes. Previously, the worker had been expected to abandon his mode of calculation and to adopt that of the teacher or curriculum designer. The evaluation results from the first year of operations appear to confirm the effectiveness of the new approach.

CURRICULAR MATERIALS

There are two channels for communicating curricular content to learners. The first is indirect and relies upon the intermediary activity of the instructor. The other is direct and depends upon the student's understanding of written (or, for the first lessons, pictorial presentations material. Both were employed in the Esfahan Scheme and necessitated the development of two sets of materials.

Materials for the instructor

The materials developed for the instructor were designed to convey to him the content to be developed in a curricular unit together with suggestions as to the mode of presentation which might be most effective.

Specifically, the instructor received the following materials :

1. Content sheets, containing : (*i*) technical information ; (*ii*) socio-anthropological and socio-economic aspects ; (*iii*) scientific and mathematical principles ; (*iv*) drawings and sketchings ; (*v*) calculating exercises ; (*vi*) reading and writing exercises.
2. Audio-visual aids : in particular posters depicting the particular subject-matters and themes under discussion.
3. Teaching guides containing suggestions on how the elements included in the content sheets might be developed and on the use of audio-visual aids.
4. A plan and timetable for the development of the curricular unit.

Materials for the workers

The following materials were supplied directly to the workers :

1. Loose-leaf printed pages containing drawings and phrases relating to the technical themes being developed (taken together, the handouts of the first cycle represented a guide to the curriculum).
2. Work sheets containing semi-programmed exercises for developing the following skills : (*i*) calculation ; (*ii*) language ; (*iii*) drawing.

3. Handout sheets to be filed with working records and plans.

In conclusion, it should be stated that not all the normative criteria set forth above were fully realized. These principles and criteria served as guides and points of reference, not unimpeachable dogma. Novel insights and new ideas were welcomed at all levels and at all times. In evaluating the Esfahan experience, this independence of action on the part of curriculum developers and implementors must be given careful consideration.

Diagram 1. Elements of a curricular unit

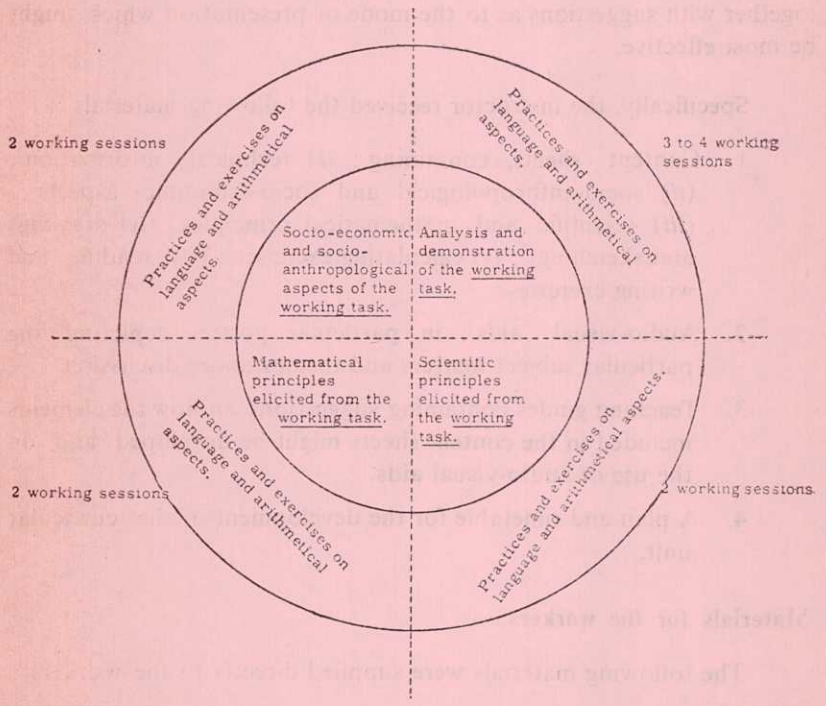


Diagram 2. *New words introduced in the first four curricular units*

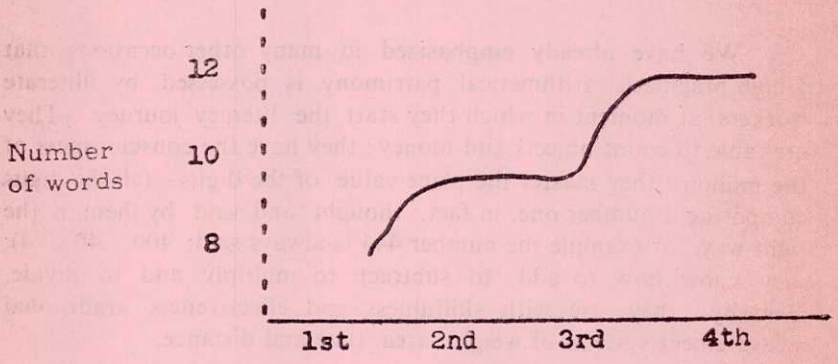
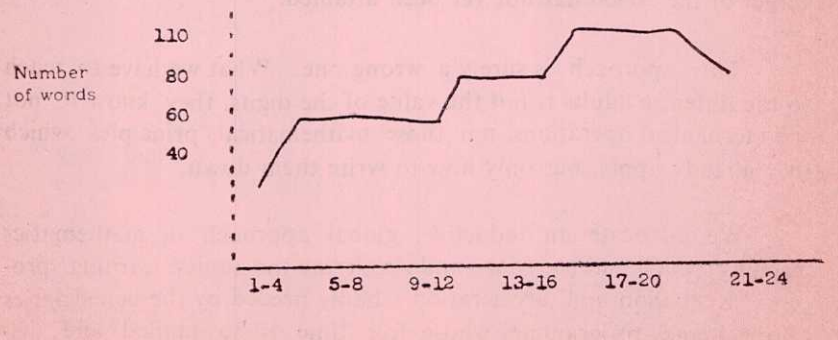


Diagram 3. *Average rate at which new words were introduced during the first cycle of the curricula*



Mathematics Teaching in Functional Literacy

We have already emphasized in many other occasions that a high pragmatic arithmetical patrimony is possessed by illiterate workers, at moment in which they start the literacy journey. They are able to count objects and money; they have the consciousness of the million ; they master the place value of the digits—(all the digits composing a number one, in fact, thought and said by them in the right way, for example the number 444 is always said: 400...40. . .4); they know how to add, to subtract, to multiply and to divide, mentally ; they use with skilfulness and effectiveness, traditional measurement systems of weight, area, time and distance.

But their mathematical ability is not only circumscribed to the mechanism of the arithmetics, it includes also the practical adoption of various conceptual principles. A farmer, for example, applies the rules of unity and that of three, when he mixes fertilizers and he is aware of the rate of flow, when he irrigates his field.

The literacy teacher, ignoring the arithmetical wealth of the illiterate's minds often starts to teach them : 1 to 10, 10 to 100, 100 to 1000, etc. At the end of the sixth month, sometimes, the target of the 10000 has not yet been attained.

This approach is surely a wrong one. What we have to teach to the illiterate adults is not the value of the digits, they know it, not the mechanical operations, not those mathematical principles which they already apply, but only how to write them down.

We advocate an inductive, global approach in mathematics teaching which had to reduce and accelerate the adults' learning process. Reduction and acceleration : badly needed by the beneficiaries of our literacy programmes whose free time is so limited and discontinuous. We indicate here below the main features of the above mentioned approach.

1. *The written basic arithmetical mechanisms* : First, the adult learners have to be taught in how to analyse a number in its digits, starting from the first number brought to their attention by the initial topic. This has to be done by following the same process adopted when employing words in letters.

Successively they have to be invited, to fix in their eyes and in their hands with the help of appropriate exercises, the written symbols of the analysed digits. How ? By recognizing them among others, which are similar but not identical, by reading them in various orders, by copying them many times until mastered.

Secondly, the operations symbols : +, −, ×, ÷ have to be introduced to the adult learners, explaining to them the correspondence of those symbols with the respective processes already experienced by their minds.

Thirdly, the adult learners have to be enlightened about the value of the standard systems of measurement by putting these latter in graphic comparison with their traditional parameters.

Fourthly, at the moment in which the written forms of the digits, as well as the operations symbols and the measurements' scales have been well fixed in their senses, the adult learners have to be left free of operating with them, by writing down their own mental arithmetical processes. No pre-established scholastic procedures have to be imposed upon them.

For example in the case of adult learner who adding the numbers 26 and 18 may operate as follows :

20. . .6+10. . . .8

20+10=30. . . .6+8=14

30+14=44

. . .We have to ask them to write down in their note books or on the black board, this very process and not our pedagogical one :

1

26

18+

=44

Finally, when the written processes for operating with numbers have been well mastered by the learners, they have to be led to construct, by synthesis, new numerical progressions and new arithmetical expressions and dialogues.

The following tables show how the suggested processes of analysis, fixation and synthesis could be applied with farmers of one of our countries starting from the first literacy session.

Table I—*Analysis*

Phrase, globally introduced to the farmers :

In our country they are 15.530.000 small farmers like you.

15. 530. 000

↓

1 5 3 0

↓

0 1 3 5

1	3	5	1	3	5
10	30	50	11	13	15
100	300	500	31	33	35
1000	3000	5000	51	53	55

11	1/1	=	10 + 1
13	1/3	=	10 + 3
15	1/5	=	10 + 5
53	5/3	=	50 + 3

Table No. II

Fixation by (A) Recognition, (B) Reading and (C) Writing

A—Recognition :

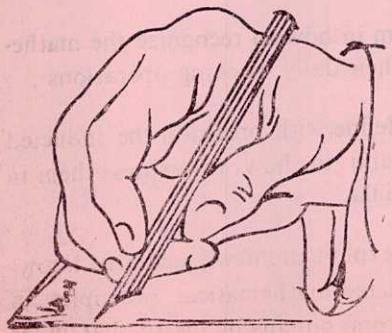
3 (Stimulus)	1	5	0
1 3 5	3 5 0 1	5 3 1 0	3 5 0 1

5 . . . 1	3 . . . 0	1 . . . 0	3 . . . 5
9 1 7 4 5	8 4 0 7 3	0 9 1 5 7	2 5 6 3 8

B—Reading

1 3 5 0 3 5 1
0 5 3 1 5 1 3
3 1 0 5 0 1 3
0 1 1 3 3 5 3

C—Writing



0 0 0 0 0 0
1 1 1 1 1 1
3 3 3 3 3 3
5 5 5 5 5 5

0	1		3		5					

Table No. III

Synthesis

0	1	3	5

↓

$10+10+10 = 30$

$30+10+10 = 50$

$50+50 = 100$

$300\times 10 = 3000$

$3000\times 10 = 30000$

$30000\times 10 = 300000$

$300000\times 10 = 3000000$

2. *The mathematical concepts* :

From the very beginning and parellel to the acquisition of the written basic arithmetical mechanisms also the mathematical acculturation of the adult learners has to be attempted; this can be achieved by :

(*a*) briefing and orienting them in how to recognize the mathematical principles ruling their daily working operations ;

(*b*) teaching them in how to define with precision the inducted mathematical principles and in how to express them in numerical or graphic formula.

(*c*) training them in how to exploit the newly acquired knowledge by applying the inducted mathematical principles in other situations different from, but analogous to, that under consideration.

For example, a farmer who is called to reduce progressively, all the soil samples of his field into a small mound, representative of all of them, but easier to be brought to the Laboratory, this farmer applies at that very moment the mathematical rules of : Reduction, Proportion and Percentage—These rules have to be elicited from his actual experience and immediately introduced to him in their conceptual configuration. Afterwards it has to be shown to him how effective and useful these acquired concepts can be in other working situations, like that inherent in the dilution of pesticides, etc.

As well as the soil sampling operation has permitted the elicitation of three mathematical concepts, other working operations may lead the adult learners towards the logical possession of numerous mathematical concepts and relationships such as : Area, Progression, Rate, Ratio, Time, Distance, Speed, Flow, Volume, Time-Unit, Cost Benefit etc.

But are not superfluous to the neo-literates, all those concepts and inter-relationships ? Not at all ! They are needed. Needed by industrial workers, living in a changing environment, and interested in upgrading their working performances. Needed by farmers, who adopting new high yielding seeds, organising themselves in cooperatives and establishing new marketing patterns, have decided to increase the production and the productivity of their work. They are needed by all those active members of a population involved in development programmes. How workers can create, contribute to and benefit of, socio-economic development without knowing about the rules of economic growth ? How wives and husbands can take decision in planning their family life, without knowing about the rate of growth ?

By mastering mathematical concepts and inter-relationships the adult learner will be not only able of improving his present working performances but also of executing, with creativity, new complex that working tasks tomorrow. When we teach to an automotive mechanic the water in the radiator has to be put two centimetres below the cover we give him instructions for a blind motion, when we teach him the interrelationship between the heat and the volume of the water we give him a high potentiality for many future original performances.

But these logical categories are generally thought in the Universities, how it will be possible to transfer them to illiterate workers ? It is possible ! Any concept we can understand, they can understand. The difficulty consists only in finding the right and clear way for achieving this maximum common intellegibility. It is a very laborious but feasible task. I myself have spent thousands hours of my working time in this endeavour, and found this effort the most exciting and rewarding of all my educational professional life.

Self-Instructional Materials in Traditional and Functional Literacy Programmes

It can be said that about 15 million new illiterates are to be added each year to the total number of adult illiterates, estimated today at 800 million. The only chance these young illiterates have to recuperate the lost schooling is their participation in the remedial operations of adult literacy projects. And it is not uncommon to hear educationists commenting that in this specific situation, made worse by the scarcity of qualified instructors, as well as by the paucity of funds available for adult education expenditures, *adult literacy should adopt curricula developed according to the techniques of the programmed instruction*, which might become an effective answer to this world need.

The technique of the programmed instruction, which, "nihil sub sole novi", reminds some verbal Socratic procedures, has been developed by B.F. Skinner, in the learning laboratories of Harvard University, during 1954/55 ; in the beginning the technique required teaching machines to present the material but later it was introduced in the form of programmed instructional books. The programmed instruction has been proved extremely successful in many areas of formal education and the experience gained in those fields has been considered sufficient for justifying the hypothesis of its utilisation for literacy purposes.

The use of programmed instruction in literacy, *e.g.*, has been strongly advocated, years ago, by P.K. Komoski, president of the "USA Centre for programmed instruction", before the American Management Association Conference :" . . . It is true that we know very little about how to apply programmed instruction to the most important educational task of this century, literacy ; but to speak about programming literacy is to realize the kind of responsibility one must undertake in the modern world. . . . Clearly the amount of work that needs doing here is all but overwhelming, and it will overwhelm anyone who goes about the task without a clearly delineated,

manageable aspect of it in mind. However, with enough talented and dedicated people attacking all the aspects, human, material and technological, of this immense problem, perhaps some significant progress can be made. . . ." More recently : alternative strategies for programming literacy have been enunciated and conceptually developed together with special programmes which need to be implemented by the utilization of electro-mechanical teaching machines (see : Hayes, "Literacy", edited by the "Centre for Applied Linguistics—Washington", Chapters : III/2, V/9c).

It has also been announced that specific experimentations will be started, in the near future, in Nigeria and Brazil, within the frame of the "U.N. World Experimental Literacy Programme". But, to my knowledge, in very few cases these advanced conceptions have been tried out, or are being tried out, in previous or actual practices; and their validity remains still to be proved.

I have been familiar, for example, only with one of them, sponsored by the USA Midwest Consortium of Universities, and carried out in Lima, under the guidance of W. Dent, from Michigan State University. It has been addressed to totally illiterate persons, and, *in the first phase*, it has been completely self-instructional.

For these reasons, and taking also into account the fact that from its elements of success or failure certain inferences can be drawn which could orientate us when examining the feasibility of using programmed instruction in functional literacy, we will refer, "in extenso", about the experience in the following paragraphs.

It has been carried out, in the late sixties, in a private primary school of a poor perypheric quarter of Lima, Peru, with a group of 24 adult women, all with children, whose work consisted in selling vegetables at local market. They were eager to learn how to read and write for the security it offers, when their husbands will desert them. Their mother tongue was the Quechewan, one of the peruan Indian languages, and their spoken Spanish vocabulary was very limited.

The material for the programmed teaching commenced at a level which assumes that the students have had no previous experience in school and it was developed for teaching Spanish. The teaching

curriculum was developed in three stages and a set of programmed booklets was prepared for each one of them. The goals of these three stages were respectively the following :

I—Pre-literacy discrimination of the alphabetic letters and development of controlled response skills.

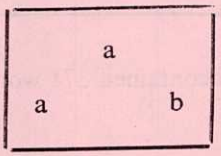
II—Fundamental phonetic and vocabulary training.

III—Language development. Basic grammar and sentence structure.

A preparatory phase was dedicated to explain to the adults how to hold a pencil and how to draw a circle around a figure or a letter, in order to prepare them in the technique to match the samples. They have also been orally briefed by the teacher on how the programme works.

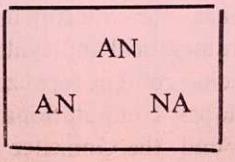
During the first stage : 9 booklets were utilized, whose content was aiming at a progressive identification and a written mastery, by the adults, of all the letters of the Spanish alphabet. In order to achieve this goal the adults were trained initially how to discriminate, between printed letters, that similar to the stimulus ; and this : by "matching the sample". Here below an example of one of the first discrimination cards :

a (stimulus)



The successive objective was to train the adults how to identify one letter equal to the stimulus, put in the middle of a set of letters, very similar. Then the number of alternative to one stimulus was gradually increased from finding : 1 among 8, to : 5 among 40. After groups of 2 or 3 letters were presented to the adults, as shown by the following example :

NA



Groups of 3 and 4 letters were progressively introduced, meanwhile the printing size was progressively reduced. Lastly the adults were asked to copy twice, below the card, the letters indicated by the stimulus. The first set of 9 booklets contained a total of 1284 linear frames and asked for 1660 individual responses.

The second stage could not start immediately with self-instructional material. An oral traditional teaching on the phonetico-graphic relationships between sounds and signs was needed, and it was imparted by the teacher. Consequently a new set of 5 booklets was introduced to the adults. They were designed to produce meaningful reading and writing of a basic vocabulary. The words chosen were those Spanish words having affinity with the Quechewan ones. They were grouped according to their spelling similarity, such as : ola (wawe), bola (ball), cola (tail). The adults were required to write the correct word for each appropriate picture, and then to discriminate between three words that are appropriate to a given picture, as by the following example :

drawing of a ball

ola	cola	bola

The second set of 5 booklets contained 271 words and asked for 2035 individual responses.

The third stage was developed with the help of 3 booklets conceived for permitting the adults to observe and describe diagrammed actions developing by people or animals. It was also asked to them to encode, by writing, questions and answers, at same time. For example, a drawing showing Pablo Gonzalez building a wall, might be commented with two written phrases, the first one : "What Pablo Gonzalez does ?", and the second : "Pablo Gonzalez builds a wall". These processes were developed in order to make the adults able to master the verb's present tense, the interrogative form of sentence, and progressively other grammatical and syntactical functions. The last two booklets had a specific content focalized on practical subjects, such as : costs, weights, colours, computational problems, and "loci" geography ; all keyed around the Gonzalez family life. This third

set of booklet contained a total of 447 frames and asked for 1360 individual responses. Thus, the total number of responses asked by the three sets of booklets was : 5055.

A daily record was kept with statements on: time, pages covered per session, number of errors, number of correct responses.

The course had a duration of three months, with a total of 250 hours of teaching, distributed in 3 hours per day. They were dedicated not only to the programmed booklets, but also to oral presentation, orientation, re-orientation, correction, and to certain traditional matters such as : Hygiene, Nutrition, Child care, Knitting and Sewing, Hand-work, and Medical care. According to the teacher responsible for the experiment, only 48 hours were spent by the adults working on the programmed booklets and, in the light of his experience, this represents about half the time needed for achieving the same acquisitions by the adoption of traditional primers and readers.

At the end of the course two tests were administered : one, containing a list of 50 basic words, in order to check the adults' comprehension ability and another one based on dictation. The level of failure rate, for the first one, was : Av. 27%, Max. 46%, Min. 10%. The average mark, for the second one, was 6.2 out of 10, with a Max. of 8 and a Min. of 2.

The lesson of this experiment can be summarized as follows.

Positive factors : the adults work at their own rate; if they are forced to leave, for a certain time, the class they can continue after when they have let off; they proceed by small steps, and always know when are right and when are wrong; the task of the teacher becomes less complex, and can be also accomplished by a monitor.

Negative factors : laborious introduction to the use of the programmed material; necessity of continuous orientation and guidance; permanence of traditional teaching techniques during certain delicate phases of the literacy process; scarcity of local qualified specialists skilled in elaborating self-instructional programmes.

Will an attempt of adopting programmed instruction in functional literacy lead us to the same results, shown by the Lima

experience ? Probably yes, but the right answer can be given only after having tried out the validity of our hypothesis in real teaching-learning practices, involving illiterate workers, and aiming to upgrade them in their vocations, by the use of written verbal messages, the linguistic mechanisms of which ought to be transferred to them by programmed self-instructional materials.

However, we can imagine, from now, that it will not be an easy task. The functional literacy process, in fact, integrates the teaching of literacy with the training in specific areas and the contents of the training are not preconceived but elicited from the given social, economic, cultural, human context of the target audience. They are not rigid but variable and flexible to take account of the diversity of the situations and targets; they must be tailored-to-measure to suit the requirement—as discovered and defined through inter-disciplinary analysis—of each group ; and they must be continuously adapted on the basis of objective evaluation of their efficiency.

To prepare so many differentiate, integrate and flexible programmes requires, indeed, a number of highly skilled national specialists and an amount of money, still greater than those needed for preparing self-instructional materials for traditional literacy. Could, at present, these two inputs be easily provided by developing countries ? May be the studies and researches to which the Unesco programme for the new biennium makes reference, and which ought to be undertaken, in Nigeria and Brazil during 1971, under the auspices of the "World Experimental Literacy Programme," will offer us some enlightenments on this relevant point.

Pending the outcome of these and other investigations, I believe, however, that we can already attempt to conceive, as hypotheses, some limited interactions between programmed instruction techniques and functional literacy process.

Programmed courses, for example, could be designed to teach only certain elements of the functional literacy training and be combined only with some of its pedagogical procedures. The circumscribed areas of the functional literacy process to be programmed could be those, initially, devoted to fixation of the mechanisms of reading, writing and calculation and those, successively, devoted to the development of the language skills.

In the beginning of the literacy course, in fact, the adult learners have to master the mechanisms which can permit them: (*i*) to analyse phrases and words, in their sound-spelling units; (*ii*) to fix the shapes of these sound-spelling units in their eyes, minds and hands; (*iii*) to recompose these units, by synthesis, in new ensembles, *i.e.*, in new words and phrases. Afterwards they have to improve, progressively and constantly, by exercises, repetitions and drills, their literacy skills and develop a new language. A long, hard task, which can by achieved only through a very laborious psychosomatic travail.

Their fatigue can be surely diminished and their results optimalized, if the effort they are deploying will be supported by stimulating, maieutic, materials.

It is in building up these materials, in preparing the exercise sheets and cards, in constructing the workbooks for writing and arithmetics that we can apply some of the programmed instruction's patterns; among them, particularly, those permitting an autodidactic process such as : the structure by frames, the articulation in four areas: presentation, question, answer and control, together with their graphic mode of presentation.

Moreover self-instructional programmes may also play a very useful and important role if adopted, not at beginning of the functional literacy courses, but only afterwards, *i.e.*, at the end of the second stage, during the follow-up period, when the adults, no longer members of the functional literacy groups, might be eager to continue *individually* their process of learning. They could be provided, at that time, with systematic self-instructional programmes on subjects and matters chosen according to their interests in new knowledges and to their needs for continuous vocational upgrading. Possessing already basic skills in reading, writing and written calculation they are virtually ready to, usefully, utilize the programmed instruction; their task ought to be made more easy by giving them, during the second stage of the functional literacy process, a special orientation on how a "programme" works and by leading them to a complete mastery of a self-instructional *set*, with the help of progressive practices, going from the utilization of partially

programmed materials to the use of complete "demonstration" programmes.

Self-instructional programmes, envisaged *ad hoc* for new literate workers, could possibly be standardized by broad branches and have a nation-wide generalization, because it can be assumed that groups of adult workers, living and acting in the same country, would, surely, have in common many aspirations, interests, needs and problems.

Training of Functional Literacy Agents

The Functional approach in literacy teaching aims to combat not only the instrumental literacy, but all the illiteracies among men, namely : the instrumental, the social, the economic and the political ones. If so, the actions to be carried out for achieving this multi-faced target cannot be confined to a simple didactic transfer of skills and knowledge. On the contrary they have to awake all the unlimited capacities of understanding and doing possessed by the illiterates.

In this perspective the illiterates themselves have to become the true agents of the literacy process while the primary task to be attributed to the literacy agents will be that of helping them in their human, social and economic development, as the catalysts who aids chemical changes in other bodies.

The literacy workers should be able to make the adults aware of the steps to be taken towards the solution of their existential problems, to help them in acquiring a new consciousness regarding their capacities to overcome natural obstacles, to examine with them the technical and intellectual elements needed for a better implementation of their working tasks, to establish with them the guidelines, the plans for the execution of the above mentioned tasks, and to motivate them towards intensive, united group and inter-group actions. In conclusion to enlighten them about the active role they have to play in the society *i.e.* about their duty to transfer to the society their concrete and practical mind, their intuition, their capacities and the other values proper to them.

By consequence the responsibility for this type of guidance cannot be assigned to the primary teachers alone, as it has been done till now. The latter, with their rigidity and with their psycho-professional resistance, have difficulty in adapting themselves, to approaches different from those scholastic ones they are accustomed to apply with children. This new responsibility should be given to

any open mind and open heart literate person from the community, whose soul will never be appeased till "human dignity" is offended even in one member of his society.

This behaviour cannot be transferred either by indoctrination or by training, therefore a literacy programme, founded on the above mentioned new terms, will be successful only if we have in, or send to, a community such type of literacy worker.

And only after having found the right persons at community level, we can think of giving them orientation and training both in the occupational and pedagogical aspects of the educational process they will be called to develop.

What have we done till now in preparing syllabi for the training courses of literacy agents ? We have generally built them on the following topics :

(*a*) Magnitude of the problem of illiteracy at national and international level;

(*b*) Psycho-pedagogy of the adults' teaching-learning processes;

(*c*) Methodology of the teaching of reading and writing;

(*d*) Methodology of the teaching of arithmetic;

(*e*) Techniques for group discussion and group-work; and so on.

This type of training : theoretical, generic and uniform, is inadequate to our objectives. The training programmes we need cannot be theoretical, cannot be generic, cannot be uniform. They have to be practical, specific and they have to vary according to the social and vocational origin of the literacy workers, as shown by the following table, elaborated by Unesco, on the basis and in the light of the experience gained in the various Functional Literacy Projects of the World Experimental Adult Literacy Programme :

Types of literacy workers		*Essential aspects relating to the training*
Drawn from the socio-vocational environment	(1) Inadequate technical level	Technical training Educational training
	(2) Good technical level	Educational Training
Drawn from outside Socio-vocational environment	(3) Good technical level	Study of the environment Educational training
	(4) Inadequate technical level	Study of the environment Educational training Technical training
Teachers	(5) From outside social environment	Educational readaptation Study of the environment Technical training
	(6) From the social environment	Educational readaptation Technical training

We give now here below, as an indicative example, a list of topics, which ought to be taken into consideration in establishing a syllabus for a training course offered to the instructors, included in the group 3 of the preceding Table, i.e. coming from outside environment and having a good technical level :

I Part :

(*a*) Characteristics of the zone of intervention, its economic developmental goals and its manpower requirements, etc.

(*b*) Characteristics of the target population : situation, composition, interests, needs, aspirations, virtualities, etc.

II Part :

(*c*) Objective of the Functional Literacy programme, which will be developed in the given zone.

(*d*) Rationale for the programme's objectives and contents.

(*e*) Anticipated changes.

III Part :

(*f*) Introduction of the curricular content and its break out.

(*g*) Thorough examination of the curricular nuclei and units which will be developed by the trainees during the didactic process.

IV Part :

(*h*) Introduction of the didactic materials related to the curriculum and instruction in how to utilize them with learners.

V Part :

(*i*) Instruction in how to teach reading, writing and calculation *within* specific curricular content areas.

The resulting inferences are the following :

(*a*) a training course for functional literacy workers cannot be started before having developed the curriculum and prepared its related instructional materials;

(*b*) the curriculum and the materials have to emanate from a survey of the area of intervention and from a research on the target population needs, whose results have to be communicated and discussed with the trainees at beginning of the training course.

For the implementation of these preparatory steps a time double than that to be dedicated to the operational phases, will be required. But without this laborious preparation no functional literacy process can be successful.

Let us devote few lines to the methods of training to be applied during the development of the course. According to the new pedagogy, the methodology of teaching does not need to be taught theoretically. It will be learned, practically. How ? By applying during the training course of the cadres the same methods and techniques they will have to adopt with the illiterate adults. We can hypothesize, for example, that the process for transferring skills, knowledge and aptitudes to the illiterates of a certain zone will be based on dynamic group-work, and more specifically, that the content of each curricular unit will be always conveyed to them by the following progressive steps:

(*a*) information on the topic or on the operation under consideration with the help of supporting visual materials;

(*b*) demonstration and repetition of the demonstration by the learners;

(*c*) group discussion on the theme under experience;

(*d*) team work for elaboration plans of action.

Well, in this case the same methodological scheme will be applied in transferring to the trainees the contents of their course, then at the end of the training, it will be explained to them that the criteria to be followed by them in teaching the adults have to be elicited directly from their own learning experience.

It has to be emphasized here again that, if we want to achieve effective results, no training activities have to start before having taken all the needed preparatory steps, which are reported below :

(*a*) Survey of the area of intervention and recognition of its developmental goals.

(*b*) Identification of the target population, demographic and social characteristics.

(*c*) Identification of the target population needs, interests, aspirations and problems.

(*d*) Development and break out of the curriculum content.

(*e*) Preparation of the instructional materials related to curriculum.

Where, the specialists, who have to perform these highly demanding interdisciplinary tasks, can be found ? I think that many members of the institutions or bo lies, which are now sponsoring functional literacy programmes all over the world, possess the intellectual capacities and also the social and moral imperatives for undertaking those tasks.

Why, for example, each institution does not ask its professional members for the gift of their expertise in benefit of illiterates. Their contribution will not be required for teaching purpose, we have already mentioned who has to assume in the communities the teaching responsibilities—but for designing surveys, for interpreting data,

for developing curricula. And with the help of international specialized agencies, if needed, *operational* seminars or workshops could be organized for the training of cadres specialized in the preparation of instructional materials and didactic tools. Today, in almost all the Third World's countries, a high intellectual and technical potential is present. It has to be exploited also for educational purposes. I know there are many other important activities which have to be put in action by the intellectuals and by the technicians but the human promotion problems, faced by the mankind, here and now, are so crucial and urgent that educational undertakings have to be considered by all, as essential and primary.

The Problem Solving Approach

> ..."Far from being uniform and standardized, Functional Literacy programmes must be adaptable to concrete individual and group needs, and differentiated according to the environment and the social and economic objectives ; ... they must be oriented towards solution of the practical problems which are encountered in the professional and social life of groups concerned... (Unesco's Programme 1971/72 Part II—Chapter I — Education : §§ 324, 325.)

One of the basic principles of the Experimental World Functional Literacy Programme is that of building curricula on the problems identified as obstacles to the attainment of specific socio-economic objectives. How does one go from the problems to the curricula contents and from those to the practical solutions?

Here below : an inventory of the various progressive steps, which had to be taken in developing a problem solving Functional Literacy Curriculum, addressed to a target audience, constituted, *e.g.*, by farmers. The scheme, elaborated by me, has been inspired from the Functional Literacy experience conducted in Jaipur, Rajasthan, India, in 1971/72, within the frame of the U.N. Experimental World Programme.

1. *Exploration Phase*

    1. Identification, by an opinion field-survey of the technical *problems* faced by the farmer, future participants to the Functional Literacy courses. The word : *problem* should be taken to mean : a situation in which the attainment of the agricultural target is delayed or prevented due to the lack of particular experience, knowledge or skills.
    2. Confrontation of the farmers' perceptions of the problems with the diagnoses given by the agriculturists and with the opinions of the officials.

3. Final assessment of the real nature of the problem.
4. Classification of problems by priority and selection of those among them which are *crucial*, and *common* to the target-audience.
5. Recognition of the linguistic patterns—phonological, lexical, grammatical and syntactical—of the daily spoken language of the farmers, by analysing the texts of the group-inter views, which have been recorded on tape during the above mentioned opinion field-survey.

2. *Curriculum Construction Phase*

It will be only after having completed the exploration phase that the Functional Literacy curriculum can be elaborated. The paragraphs, given here below, illustrate the major steps involved in the curriculum construction phase.

6. Inventory of the remedial measures required for the solution of the problems. These measures have to be prescribed by local or regional agricultural specialists, in consultation, when and if needed, with national institutes of research.
7. Sequencing of the remedial measures required for the solution of the problems, according to the order in which they have to be implemented : a sequence per each problem.
8. Juxtaposition of the different sequences, according to the calendar of adoption of the measures included in them.
9. Interweaving of the above mentioned sequences in a unique list, in which the various remedial measures will be distributed according to the chronological order of their adoption and inscribed within the seasons of the agricultural calendar. The outcome will be a list of innovative working tasks to be added to those traditionally executed by the farmers. This list has to be discussed with them, and only after having been approved by them it can be officially adopted as the *syllabus* of the Functional Literacy programme.
10. Break-out of the planned working tasks, in their primary working operations, if and when required by their complexity.

11. Inventory of the skills, the knowledge and the *socio-economic information* needed by the farmers for implementing in a right, conscious and autonomous way, each one of the working tasks or operations.

12. Organisation in separate instructional units, of the "corpus" of skills, knowledge and socio-economic information, needed for the implementation of each working task or operation.

The entire set of instructional units required for the solution of the crucial and common problem faced by the farmers participating to the programme will constitute the *Functional Literacy curriculum*, which will represent the instructional reformulation of the *syllabus*. The Functional Literacy curriculum, therefore, will not be a breviary of generic topics selected according to the judgment of professional educators or pedagogists, but an itinerary for a journey towards practical and intensive targets. A curriculum not knowledge oriented, but wealth oriented, if we utilize the work : *wealth* in the acception given by Buckminster Fuller of energy compounded with intellectual know-how.

3. *Material Preparation Phase*

The transfer to the farmers of the selected contents can be achieved "de facto" by the mediation of three communication systems : (*i*) the spoken language; (*ii*) the visual non-verbal language; *i.e.* static or cinematic images, illustrations, graphs, drawings etc.; (*iii*) the written verbal language. We are mainly concerned with the third one, because the written communication system is the only one which opens to the farmers the door of more advanced training programmes' and offers them the opportunity of a constant improvement of their conditions of life.

13. Therefore, a simple written verbal and numerical "progressions", clearly conveying the contents of each instructional units, have to be prepared. The structures of these progressions have to be very carefully designed, by dosing, in a balanced and harmonic way, the logical patterns of the farmers', language and mind, identified in the exploration phase, and the innovative syntactical schemes required by the technicality of an advanced agricultural language.

These progressions should be also accompanied by visual non-verbal supports, such as posters, maps, working plans, diagrams and graphs. All together they will constitute the *Functional Literacy Materials*, which will be utilized for the implementation of the programme. To prepare these materials an inter-disciplinary team is required. It has to be composed of an agriculturist, an educationist, a pedagogist, a linguist and an illustrator. (To find such specialists is not an impossible task, as at first instance, it seems to us. In the majority of our developing countries there is today, also at field level, a wealth of intellectual and professional resources; the problem is that they have not yet been fully utilized for education.)

The consumers of a Functional Literacy programme being illiterate farmers, it is clear that, in the beginning, they will be unable to decode the messages conveyed by the materials. For this reason the contents of the first instructional units have to be transferred by them by the instructors: orally or with the help of demonstrations. The same instructors will, globally, introduce to the farmers small written phrases and short written arithmetical expressions, taken out from the respective, already established, verbal and numerical progressions. Contemporaneously these phrases and these arithmetical expressions will be analysed and decomposed in their basic articulations; either words, syllables and letters, or numbers and digits. These basic articulations, once *fixed* in the mind and in the senses of the farmers, will be utilized for composing new words and phrases, or new numbers and arithmetical expressions. This two-way process, progressively developed, will lead the farmers towards the mastery of the reading, writing and written calculation mechanisms, and will permit them, eventually, the *direct* utilization of the materials.

14. Consequently, a collection of worksheet and handout sheets containing progressive exercises for the development of reading, writing and written calculation skills, have to be prepared by the pedagogist. Each instructional unit will be endowed with a set of exercises, the themes of which will be strictly related to the verbal and arithmetical expressions of the same units.

15. An Instructors' Guide has also to be prepared by the pedagogist. It will contain : a briefing on the objective of

the instructional unit, a clear introduction of its contents, suggestions about their optimum way of presentations, orientation for an appropriate utilisation of the exercise-sheets and of the supporting aids and finally indications of the presumable time requirements.

16. Tests, questionnaires, interviews, schedules, obervation guides, etc. have to be prepared by the pedagogist, in consultation with a psychologist, in order to evaluate the validity of the contents and the adequacy of the materials of each instructional unit, as reflected in the rate of learning. This in view of remedying to their eventual deficieneics.

4. *Instrumentation for an Economic Evaluation*

The evaluation of the accomplishments of the Functional Literacy programme with regard to its economic objective, has to be planned, from the beginning. Competent specialists have to define the results expected in economic terms, to identify the measurement scales and their critical points with which the obtained results have to be compared, to adopt appropriate designs carefully constructed in order to avoid the attribution of results to certain factors when they are provoked by others and prepare the specific measurement tools required for evaluating economic growth and social changes *i.e.*, for answering to the question indefatigably posed by the planners : "How does literacy effect economic development ?"

5. *A Chart giving an indicative synoptical view of the phases of a Functional Literacy problem solving process is shown in the next page.*

Developmental objective specific to the given rural region : *INCREASE THE RICE YIELD FROM 4000 TO 6000 KGS. PER ACRE, PER HARVEST.*

First Phase :

Identification and selection of the problems educationally solveable, together with their possible solutions, by interviewing and discussing with local agricultural officers and farmers.

Second Phase :

Establishing with the help of local agriculturalists and farmers, the list of those operations which have to be implemented for overcoming the problems.

Third Phase :

Integrate training, by demonstrations and discussions with the help of didactic materials conveying information and knowledge by means of pictorial frames, graphs and simple written, verbal and numerical expressions. The analysis of these latter expressions and the utilization of their elements for new written linguistic and arithmetic constructions will be achieved by a series of literacy teaching sessions complementing the training. During these, the farmers, with the help of workbooks and worksheets, will perform practices and exercises which will progressively lead them to the mastery of the language and calculation mechanisms.

Fourth Phase :

Implementation of the remedial measures by the farmers, with the technical assistance of the extension workers.

Fifth Phase :

Appraisal of the results, by the farmers in consultation with local specialists.

I		II	III			IV	V
Problems	*Solutions*	*Planned Remedial Operations*	*Technical Information*	*Scientific and Mathematical Knowledge and Socio-economic information*	*Literacy*	*Actions*	*Self-evaluation*
1. Soil Acidity →	Use of lime →	—Testing Soil —Getting and transporting lime —Grinding and Screening lime —Land preparation —Applying lime → —Etc.	—Quantity per acre, to raise pH value of the soil from 3 to 6 → —Dimension of the plots → —Spacing and depth of the rows → —Regulations of the ploughshares → —Frequency of application → —Watering/Liming application → —Etc.	—pH value; Microlife of the soil; Nutrients; Weight measurements; costs. — Linear measurement. Length × Width = Area — Depth; Speed; Time = Distance / Speed — Angles — Progressions and Rate; Benefits. — Ratio; Volume; Flow = Volume × Unit of time. — Etc.	Analysis of the minimal articulations structuring the simple written verbal expressions, conveying information about "Quantity of lime per acre". Fixation, by appropriate exercises, of those alphabetic patterns met here and now for the first time. The arithmetical expressions inherent in the above mentioned topic, will also be analysed and their not yet known mechanisms elicited and fixed.	Progressive execution of the planned working operations, according to the established calendar of adoption.	The farmers will assess the elements of success or failure, identifying causes of negative and positive results, and plan for an improvement of the operations, when repeated.
2. Unawareness of the pest attacking the paddy plants.	Recognition by observation, of the first symptoms of the pest, and preventive application of pesticides						
3. Etc.							

So Spoke Ram Kumar

(*India, Kharif, 1971*)

Ram Kumar is reluctant to grow high yielding varieties. Why? Lack of information ? Lack of communication ? Lack of knowledge? Lack of skills needed for the new agricultural practices? Lack of awareness about the economic benefits they may bring to him ? Negative attitudes due to the socio-cultural or psychological factors?

Let us listen to him :

—May I know your name ?

—Ram Kumar .

—Are you literate or illiterate ?

—Illiterate.

—Approximately, how old are you ?

—Fifty years.

—Which is your occupation ?

—Farming.

—How much land does your family have ?

—Three acres.

—Is it a good land ?

—It is dry and salty.

—Please let me know which of these animals you possess : buffalo, cow, camel, sheep ?

—Camel. One camel.

—Approximately, how much money do you earn in a year ?

— . . . . Seven hundred rupees.

—How many children do you have ?

—Seven.

—Do they attend the school ?

—No.

—Which are the most common diseases affecting their health ?

—They have fever. . .the smaller have a big belly. . . .

—Are you member of any civic, economic or social organization?

—Yes. I am member of the Panchayat, the Carchamandal and of the Cooperative Society.

—Which are the major crops do you cultivate in your field ?

—Bajra during Kharif and wheat during Rabi.

—Which seeds do you use ?

—Our seeds.

—Which fertilizers ?

—The manure of the farm. It is very scarce. . . .

—Which implements ?

—My plough and my hoes.

—Have you heard about high yelding varieties of seeds ?

—Yes.

—Have you heard that they can grow more ?

—Yes.

—Have you thought of sowing them in your field ?

—Yes.

—And why have you not applied them ?

— . . . . . .

—Tell me, please.

Ram Kumar, illiterate, head of a big family, owner of three acres of dry land and of a camel, looked into our eyes, and almost voiceless, slowly, told us his reasons : "Yes, it is true ! I don't grow the new Bajra in my field. But it is not because I am against. It is because my soil is sick. I am afraid that the new seeds will die in it. I have no water, no manure . . . I am also afraid that once I start to grow the new bajra in my field, the seeds, the fertilizers, the loans will not reach me. I am not telling this without a reason. This fear is because of my past experience. . . I am afraid of this new pest. The white grub has destroyed my Kharif crop, during the last three years and the poison is so expensive, so dangerous . . . and I don't know how to apply it . . . The Food Corporation is far away. I do not have tractor, I do not have trucks, only a camel. How to take my produce to it ? I have to sell my

grains to the intermediary. He will give me money without delay. But he pays me ten times less than the Food Corporation. The local, bajra can be sold, at a good price here in the village market, and I am not forced to do so many calculations and to put my thumb on so many papers ... The Cooperative does not help us. The administrator is very exigent, the shares are high and I have been requested to repay the loans when I do not had any money. It is less complicated and easier to get money from the money lender ... The Bank ? How ask help from it. I don't know. I have seen a sheet full of writing ... I cannot read. But I want to know how to get credits, how to repay them. I am sure I can learn all these things, if they are really made for my benefit ... I know I am ignorant, but I am not against the new seeds, I am not against the new practices. I feel myself alone, I feel myself too small. I am afraid....."

Functional Literacy Methodology and its Implications for the Broader Field of Adult Education

1. Adult Education: tomorrow

Approximately 50% of the school age population of the Third World, because of the low rate of initial enrolment and because of the high rate of dropouts, is, at present, not receiving any formal education. Thus, many children of today, reaching the age range of fifteen to twenty in the 1980's will be in need of Adult Education.

From then, more than 15 milion young people will enter each year into the family of the adult learners. The young population explosion and the consequent paralysis of the institutionalised educational structures will, certainly, increase in the future the demand for out of school education. The contemporary growth, in geometric progression, of technology, science and knowledge will extend, at a later stage, the educational processes further into the adult life.

2. Its dilemma

Is Adult Education ready for this immense new task? Is there any indication about plans, objectives, designs, methods, technologies, the adoption of which will best serve adult education in its future performances? Which audience has to be reached in priority? How to conciliate the general educational needs of a population with the specific goals of given groups, and with the diversified natures and rhythms of maturity of each individual? How to formulate the Adult Education universal principle in a context which is far from having a common credo about the finality of the man's existence? How the scientific spirit of our times has to pervade the Adult Education processes? How to determine the appropriate strategies of approach, the contents of the programmes, the organizational patterns and the "delivery system" to be adopted? How to correlate educational activities and developmental processes and which will be their interaction? Which qualitative and quantitative segments of knowledge have to be imparted to the adults, and how?

3. The Functional Literacy Experience*

The experience gained, during six years of field work, by the various Functional Literacy Projects in Asia, Africa and Latin America, within the frame of the "U.N.D.P. World Experimental Literacy Programme" has offered initial answers to some of the above mentioned questions; particularly to those concerned with the methodology of designing curricula and transferring knowledge, skills and aptitudes to adult workers, living in developing situations and approached by outside their working floors. We list the most relevant among those answers in the following paragraphs. They have been elicited mainly from the Functional Literacy experiences conducted in Iran and in India.

4. The New Criterion of Homogeneity

Groups of the same sex, age interval, family status, performing the same working activities, or pertaining to the same professional categories have been, in the past, "a priori" : often considered *homogeneous*. For this reason Adult Education programmes have been "ad hoc" prepared for: women, youths, farmers, industrial workers, craftmen, etc. But the Functional Literacy field experience has taught us that in developing situations, members of the same professional category carry with them objectives, needs and interests which are frequently heterogeneous and mobile, because their adhesion to, and their involvement in, a specific trade have been determined, in many cases, by hazard and under constraints, more than by a free choice. Many adult workers living in developing situations are mixed labourers; they have a chronomadic professional mobility within a working day, which often for them is constituted of sixteen hours and of three vocations: industry, farm and small business**.

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*The expression "Functional Literacy" should be taken to mean, herein, an instructional process integrating the teaching of reading, writing and written calculation with the accelerate intensive training in given *developmental* areas, such as : advanced agriculture, upgraded industrial work, family life planning, applied nutrition, etc, : *i.e.* in the acceptation, historically, given to it, after the 1965 Teheran World Congress of Ministers of Education".

**See my Chapter in this book"Autodafe of an Adult Literacy Worker" also "W.O.A.L. P.P.—Iran—Evaluation Studies—Nos. 3-4-5, Esfahan. 1969/70: (particularly: N. 3, Tables from I to VIII, Concerned with the characteristic of the participants to the Esfahan Functional Literacy industrial and agricultural programmes).

Therefore, a better criterion to be followed in constituting homogeneous groups might be that of gathering together persons who have decided to attain *in common* new existential objective, vis-a-vis of which their actual conditions of life appear inadequate and the need for change arises in full consciousness. The selection of those persons who share common aspirations, and the consequent identification of their common training needs, can be attempted only through a deep dialogue among adult educators and adult learners to be established and developed at grass-root level, in the same zone of influence. This dialogue, which has to be propaedeutic to any operational activity, had to permit, at last, a *synchronic* selection of the 'Adult Education programmes' target-audience and content-areas. No preconceived Adult Education programme can be prescribed by outsiders, as solution for hypothetical needs of certain groups; only by involving the adults themselves in an auto-diagnostic process, aiming to the identification of objectives and needs, the constitution of homogeneous groups and the definition of appropriate content-areas will be naturally and rightly achieved. This involvement, moreover, represents in itself the attainment of an educational target.

5. The educational objectives

If we look to the roles traditionally assigned to Adult Education, we will find that they have been often defined as follows: it has to pursue the self-realization of a man in a social context; it has to awake his political consciousness and self-reliance; it has to lead to the betterment of the individual within his social and cultural environment; etc.

When we have asked to the members of adult literacy group organized in developing countries, which returns were they expecting from their participation to the educational activities, generally, the majority of them answered: *more income.** Some of them wish to get more income by mastering new working techniques, others by being trained in new jobs, few by obtaining a primary school diploma. They are right. They cannot be interested indeed, in self-realization

*See: W.O.A.L.P.P. Iran—Evaluation Study, No. 3, page 15—Table XI—Esfahan 1970.

within their own social context, *except in this very way.* They are poor, they fight each day for basic survival; many of them are scarcely fed, afraid of hunger, in bad health, inadequately clothed, full of debts, mortgages, and other pains. What they really need is what they are asking, i.e. a higher level of income because at their actual one there is no possibility of dignity, justice, equality and freedom. There is only room for a slavish condition, which is sterile soil for any educational approach.

They need to earn more, or better they need *to know more for earning more*: this is their primary developmental target, *i.e.* for them education and development have the same meaning as it is by the diachronic etymologies of both words.

We can affirm, therefore, that the educational and training needs of adult workers living in developing situations are never purely epistemological, on the contrary, they are ergological. Knowledge and skills are specifically requested by the adults to be transformed in working energy and this latter is needed by them for executing given tasks, which are planned for attaining concrete, utilitarian goals.

6. The Functional Literacy work-oriented curriculum

(*c*) It seems to us, that the Functional Literacy curriculum design and structures may give answers to many actual dilemma of Adult Education, such as the following ones : "Which parts out of the immense galaxies of the actual knowledge have to be transferred to the adult learner ? How to abolish the artificial chemical division of the knowledge in subject-matters and to attempt the process of learning as unit ? How to avoid, while imparting work-oriented training the danger of doing dressage instead of educating? How to teach the adult the reasoning, exploring, discovering processes for himself ? How to integrate knowledge into the inner "ego", of the adult, creating an harmonic and unfied personality, endowed not only with an "avoir educatif" but also with an "etre educatif" ? Let us spell out the answers in a more exhaustive way.

(*i*) *What has to be transferred to the adults ?* Only those segments of knowledge and skills, only those aptitudes,

intensively needed by the adults for the implementation of the operations considered by them urgent and crucial for the attainment of their specific and practical goals.

(*ii*) *How to achieve their integration and globalization* ? By establishing a curriculum distributed in modular units, having as a core functional tasks, on which all the various elements of the training are geared of. These various elements, once taken out from the frames of given subject matters and aggregated in a centripetal way around the common core, lose their artificial connotations and acquire a new ecological nature, which corresponds perfectly to the experience of the adults. For them, indeed, each specific action is closely interrelated with different aspects of their every day life and it is pluralistically felt, within a 360° horizon. On the contrary the approach adopted by the content-areas specialists often puliverizes the adults' experience in a series of various, parallel and monographic topics.

(*iii*) *Is this intensive and work oriented training more a dressage than education ?* The mastery of given knowledge related to working experiences, and the application of the rational principles elicited from them to analogical new situations, is for the adults an inestimable source of continuous energy, vitality and faith. There is more educational charge in such accelerate training for life than in many years of scholastic humanities. In the light of the first qualitative results of our actual field experiences, this statement should no longer be considered as an hypothesis.

(*iv*) *How to give the adults the power for a continuative self-determining and self-renewing education ?* If we look at the work-oriented curriculum having in mind the "*product*" of its adoption, we can say that the information and the instruction provided by it, being applied to concrete situations and merged into activities, will be naturaly recalled whenever those activities, are again required and if we look at it as "*process*" then we can say that it aims at giving the adults a

consciousness of their capacities of solving rationally any problem can they encounter in the future. Both these aspects can be considered as the learners' *take off* towards an autonomous, permanent education.

(v) *How knowledge can be integrated into life ?* Experience has shown that inducing attitudinal changes is a necessary gradual process. Neither indoctrination nor demonstration are of much use in achieving lasting changes. Rather the adult learner must be brought by degree, to develop habits and accept an outlook conducive to the types or behaviour that he is being induced to acquire. We think, indeed, that the work-oriented curriculum contains in each unit an inducement to new attitudes, values and behaviours. By providing the learners with the opportunity to reflect, rationally, upon their working experiences, it is hoped that, little by little, they could shift from an unthinking acceptance of the realities to a critical understanding of them. By making them witness, of the socio-economic implications and of the historic dimension of their functions it is expected to instill in them a new conciousness of their social rights and responsibilities. Both processes in fact aim at last to free the learner from any fatalistic acceptance and to make him aware of his capacity to influence his natural and social milieu.

7. The adult mind's process of learning

Another delicate aspect of the Adult Education methodology is that concerned with the "adequatio" between the communicating processes and the adult mind learning processes. Generally, concepts are given in unnatural isolation and in vertical progression, with a full respect of the so-called logic of the pedagogy, which is generally, foreign to the adult mind. The adult learner, indeed, possesses quick logical processes of association and interrelationship, together with the capacity of assimilating knowledge horizontally and "per saltus", *i.e.* not systematically. This, particularly, when knowledge is connected with the deeds of his existential experience. It is for this reason that traditional scholastic teaching procedures have to be considered incompatible with the learning processes of the adult mind. Let us give an example of this incompatibility. In

Iran during the first two years of the Esfahan Functional Literacy Scheme, while the farmers following the "General agriculture" programme showed high mental capacities for calculation, their achievements in written calculation were very poor. The reason for this inefficiency appeared to reside in the above-mentioned dichotomy between the procedures adopted by the teachers on the blackboard and those followed by the adult mind. Encouraging results were achieved when, finally, the method for teaching basic arithmetic was based on adult's mental approach, as shown by the tables I and II, given at the end of this chapter.

We can affirm, therefore, that before to start any transfer of specific knowledge to an adult learner, the inner processes adopted by the adult mind in dealing pragmatically with that given field of knowledge have to be known and used in preference to the scholastic ones.

8. The delivery system

Which will be the optimum duration of an Adult Education stage, the best time in a day for organizing the meetings, the best Adult Education floor, the best type of Adult Education agents, and the most appropriate organizational arrangements for its implementation ? The selection of the best "delivery system" cannot be made simply by choosing from among existing prototypes ; on the contrary it has to be "ad hoc" designed according to the characteristics, human and physical, of the "milieux" in which the programme has to be implemented.

If we consider again the findings of the Iranian Functional Literacy field experience, we can say that the adult learners working and living in its zone of influence were, in general, busy and rarely free." Many of them were constantly engaged in some ephemeral occuption, because their life was at subsistence level. In some cases, they were also seasonal immigrants six months here, six there. If farmers : they were totally employed and completely unavailable during the most important seasonal cultivating operations, such as harvest time. If workers in an industry : they had to spend, sometimes, two hours for reaching the duty station from their far dormitory villages. And they had also to respect the many cultural, religious and national holidays. Often in the moment in which the adult

learners were free adult educators were not with them, being on leave or engaged in other activities.*

For these reasons the adoption of a delivery system designed without paying the right attention to the various external factors limiting the adults participation to the courses may jeopardize the success of present and future Adult Education programmes.

9. "From the Complex to the Simple"

The situations and the data introduced in the preceding paragraphs will also lead us towards another important consideration. The Adult Education curricula to be designed for workers living in developing situations cannot be rigid and closed. They have to be open and adaptable to the different concrete exigencies of the groups. Their contents cannot be distributed following pre-established graded pedagogical progressions, but only the order in which they are required for the implementation of the planned tasks. This nullified the pedagogical principle demanding a teaching process going from simple to complex. If necessary : complex concepts can be given from the very first day, because they are urgently needed by the adults and because the adult mind will have, at beginning and at the end, equal capacity to grasp them. At the same time, the curricular units have to be liberated from the chain of a continuous rhythm. Each unit has to be, as far as possible, an all in itself, has to have an inner, complete, exhaustive nature and logic, in such a way that it could be, ideally transferred and assimilated without knowing neither about the preceding nor about the following.

10. Theory's and Practice's Diachronism

Each unit of an Adult Education curriculum has to be grounded on the execution of a given practice and strictly focussed on its adoption time. But the assumption of a strict synchronic integration between the educational and the adoption calendar has to be given up, because of the intermittance, irregularity and discontinuity of the adult participation, as we have seen before, and because of the fact that the rhythms of an agricultural cycle or of an industrial circuit are quicker and more intense than those of the educational process, as shown by the example conveyed by the Table III, which is at the end of this chapter. The example has been elicited from the

*See : W.O.A.L.P.P. Iran. Evalution Study No. 2 "Registration, Participation and Attendance in Functional Literacy Courses"—Graphs 1 to 10—Esfahan 1970.

Functional Literacy Curriculum developed for the farmers cultivating Hybrid Bajra (millet) in the Jaipur District of the Rajasthan State of the Union of India :

11. Who has to prepare the Adult Education Curricula ?

The Adult Education Curriculum cannot be prepared by educationists only, it needs to be elaborated by a high skilled interdisciplinary staff, working as a team in the same environment of the groups."* What in other words means, impossibility of realizing an effective educational process, without true dialogue between white and blue collars, members of the same community. Continuing Adult Education will remain a dream, without achieving a contemporary cultural integration of the society, starting at the community level.

Therefore, there is an urgency of giving to any professional working at field level an educational dimension, an urgency of finding ways for materializing the potential educational charge, which is merged with any professional tasks. Once materialized it will become irreducible. In the majority of the developing countries this target can be attained, because there is to-day a wealth of intellectual resources ; a wealth which, unfortunately, has not yet been fully utilized in the benefit of the national societies.

12. The Training of the Cadres

The topics uniformly suggested for a syllabus of a training course addressed to adult educators are generally the following ones : "History and Philosophy of Adult Education; Sociology of Adult Education; Psychology of Adult Education; Administration; Education and Development etc." But, if the lesson of the field experience has to be learnt, and Adult Education programmes have to be differentiated according to the educational needs of the adult groups, which differ from place to place, from area to area, from state to state, then the syllabi of Training Courses for Adult Educators must be completely revised. They have to be conceived taking into consideration the relativism of the operational approaches and to be focussed, consequently, more on the methodological than on the contentual aspects of an Adult Education process. The trainees should be enlightened. *e. g.*, on the appropriate *criteria, methods, techniques and*

*See : W.O.A.L.P.P. Iran—Educational Studies, No. 2—Table No. 23: "Elaboration of curricula phases and interdisciplinary organization"—Esfahan 1970.

tools, required for :

(*i*) —defining Adult Education objectives congenial to a given target-audience;

(*ii*) —recognizing the target-audience's socio educational needs;

(*iii*) —identifying the target-audience's training needs, and selecting the respective training-areas of the programme;

(*iv*) —designing differentiate curricula, tailor made for the various homogeneous groups of the target-audience;

(*v*) preparing sets of instructional materials, specifically related to each differentiate curriculum;

(*vi*) —devising of a delivery system, appropriate to the target audience and to the given zone of operations;

(*vii*) —adequating, constantly, the educational process to the mobility of the situations;

(*viii*) —evaluating the intermediate and final results of the programme.

3. The adults' participation

This topic is purposely considered at end of the chapter, as "viaticum", because we want to emphasize its great value, and strongly call the attention of our colleagues on the fact that, as the Functional Literacy experience has clearly indicated to field workers, *the success or the failure of an Adult Education process is mainly determined by the level of the adults' active participation in it.*

For this reason, they have to be called in, from the very beginning. They have to be associated with the educators in the definition of the educational objectives, in the recognition of their training needs, in the preparation of the syllabus and the curriculum, in all the phases of the implementation of the programme, in the evaluation of the achievements, in the envisagement of improvements, when needed. They have to share with the cadres and the agents the responsibility of organizing and directing their own training programme.

By exercising themselves in having opinions, in taking options and in operating accordingly, they will discover how unlimited are their potentialities of understanding and doing and, may be, little by little, *how to formulate freely their own objectives and their own values; this has to be considered as the final, and may be the only, target of Adult Education.*

Table I

Addition and Subtraction, based on Adults' Mental Approach, as distinct from the Scholastic One

279+
183

1. *Read Aloud*

"*Two hundred and seventy-nine plus one hundred and eighty-three*"

2. *Write down as said*

200	70	9
100	80	3

3. *Add the parts in the order which is simplest to the operator* (*this will vary from person to person*)

e.g. (*i*) 200+100=300
70+ 80=150
9+ 3= 12

(*ii*) 300+150=450
450+ 12=462

365−
128

1. *The approach is by "making up" from the lower to the higher number* (*as when counting out change*)

e.g. 128 to 130= 2
130 to 150= 20
150 to 200= 50
200 to 300=100
300 to 365= 65

2. *Now proceed with addition ; read aloud and write as said :*

2
20
50
100
60 5

100 130 7=237

Table II

Comparison of test-results in Arithmetics *before* and *after* the change in the Teaching Method

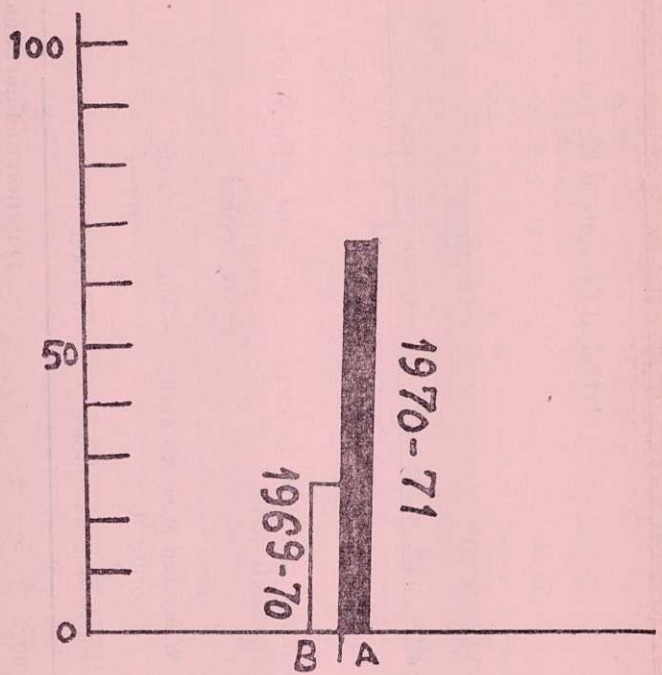

Table III

A—Remedial Measures : *Application of Phorate 10% against White Grub.* (*Holstrichia consanguinea*)

—B— Working operations	—C— Technical Contents of the Related Instructional Units		
	Skills	*Knowledge Math. and Science*	*Socio-econ. information*
1. Provision of Phorate 10%	—Phorate 10%	—Percentage	—Suppliers and Supplying price
	—How much is needed ?	—Quantity = Area × Quant/Unit Area	—Expected benefits
	—How to get it ?	—Action ; effects ; costs	—Safe storage
2. Detection of White Grub	—When and How to detect the adult bettle ?	—Life cycle of the White Grub —Progression	—Natural equilibrium
3. Application of Pho rate 10%	—When and How to apply Phorate 10%	—Time-Distance / Speed	—Safety and precaution measures when applying Phorate.
	—Furrowing techniques	—Poison	

Duration of the operations :
c. Seven days

Duration of Functional Literacy Teaching :
Twenty-one days
(one week per instructional unit)

Literacy Idola

"...Adult literacy is an humanism, ... is an ethic dictate, ... is a political imperative, ... is a productive economic investment ... is a challenging opportunity of research and experimentation ... etc."

Adult literacy is, simply, a need. A need felt by a number of persons acting in a milieu where to be illiterate is like being blind in a museum. It can be said, as corollary, that illiteracy is not a scourge, is not a plague, is not a shame, is only the lack of written communication skills. It becomes uncomfortable, and sometimes painful, when men who do not possess those skills become involved, voluntarily or involuntarily, in situations which require them. It is in itself so relevant a problem, that any rhetoric is superflous.

"... Adult illiteracy is one of the main causes of underdevelopment...".

Illiteracy is the consequence of political and socio-economic causes, the effect of persisting feudalisms. To hope to remove illiteracy without eradicating its causes is pure senselessness. Literacy, therefore, has to be considered as an educational dimension in development, which, indeed, will contribute to, and may accelerate, socio-economic growth just as yeast is able to raise bread. But to make bread, fire, water and flour are needed.

Let us clarify this statement with an example, more precisely with a "case" which I have personally experienced a few years ago, in a mountainous zone of southern Italy, constituted of seven rural communities.

The socio-economic objective planned as a transformational target for that zone was the following : to reach, in 1970, Lit. 850,000 of gross product at selling price per worker employed in agriculture. It was in 1964, in the region of Lit. 350,000. The 1970 target should have been reached by a 9.2% annual increase

in productivity of work ; the latter to be presumbly obtained by a −7.3% annual decrease of the population employed in agriculture and by a 1.9% annual increase in agricultural production.

Studies on the rural emigrations trend and consistance, and on the composition of the rural population, per age and sex, revealed that, in spite of the emigration phenomenon, a substantial stability in the quantitative level of the rural manpower was to be foreseen for the following years, thanks to a more intense presence of women and old men. We realized then that an increase in productivity of the work should have been possible only by an ulterior increase in agricultural production.

Consequently, we did a repartition of the farms by classes of extent, level of work productivity and management capitals per worker employed, and we surveyed some of them chosen, at random, from each group. Thanks to this survey we could estimate the practical different perspectives of an increased and improved agricultural production and indicate the various measures to be taken for their pursuing. Here below we enumerate, in broad terms, some of these measures.

Among the technical ones : to reach an increase in milk production of 500 kgs. per annum, and this by extending the forage areas and improving the siling facilities, (a hectare of wheat gave at that time an annual gross product at selling price of $100 ; reconverting it to forage could permit to raise 0.5 milking cow) ; to develop the mechanization of the transports, by establishing a cooperative, in view of a progressive substitution of horses with cattle.

Other measures were political or financial, *e.g.* to arrest the exodus of the young population from agriculture and its emigration from the

country, and this to be obtained by professional training processes and social assistance ; to find new external sources of investment, due to the enterprises' absolute impossibility of autofinancement, (the investment needed for one new head of cattle for the total of farms was in the region of Lit. 400/500,000.000). Other were socio-economic such as : the establishment of new land-units, by cooperative organisations, in order to overcome the negative effects of the parcels' pulverisation.

How many out of these technical, political, financial and socio-economic measures, could have been implemented alone by our, instrumentally and functionally, illiterate groups ?

". . . Mass approach is the condition sine qua non for fighting adult illiteracy. . ."

In many regions of the Third world, today, illiteracy has reached such high quantitative levels, that a mass approach, conceived as such from the beginning. is no longer conceivable ; and this for technical and logistical reasons. When illiterates number hundreds of millions, no existing structures or institutions are adequate for the magnitude of the task ; no agents can be found in sufficient number (with a ratio of 1/30,350,000 literacy in structors are needed for each 100 millions of illiterate adults) ; no stocks of paper are available in the required quantity for the literacy texts, nor are there enough forests, to be transformed into paper ; no presses for printing those texts ; no trucks or trains for distributing them. The only possible approach is the selective one ; applied progressively wherever it is demanded, whenever it is possible.

". . .What we have to teach the adult illiterates is reading, writing and calculation, i. e. pure literary, that's all ! . . ."

Literacy, as function and behaviour of a society, does not exist outside given areas of experience. Therefore, it cannot be learnt by illiterates if it is not taught within content areas having for them an existential value. Teaching literacy in a vacuum is a useless and sterile exercise, like

teaching the students of a school of music the names of notations instead of the melodic tunes carried by them. Gandhi wrote many years ago that instrumental literacy is not even the beginning of education.

". . .Adult literary, when integrated with occupational training is not education but dressage . . ."

There is more educational charge in an accelerate work-oriented literacy process than in many years of scholastic humanities. The mastery of knowledge, related to working experiences, and the application of the rational principles elicited from them to situations is for the adults an inestimable source of continuous energy, vitality and faith. During the XV and XVI eenturies, in Europe, indoctrination was imparted by the academies and universities, training for life by the workshops ; it is significant that in Florence, Michelangelo and Leonardo, were both educated in such workshops.

". . .Why teach reading and writing ? Oral communication is enough!..."

Plato in "Faidros" advocated this very idea. An idea which was, indeed, coherent with the society he was conceiving : a society rigidly structured of learned high castes, unlearned low castes and slaves. But if our society has to be different : open, harmonic and just, we have no choice : either written communication for all, or oral communication for all. If we are convinced that reading and writing are a necessity for us and for our children, then no member of our society, who feels himself in need of these skills, should be denied them.

". . .Adult literacy is a mere governmental task, and it has to be executed exclusively by its educational institutions. . ."

Literacy is an out of school adult educational process, while the governmental educational structures are scholastic and meant for children and young people. It should be said, in addition, that the inadequacy of these educational governmental institutions as well as, of their structures and agents, has been the primary cause of adult illiteracy. Therefore, adult literacy can not be their concern, it has to be the concern of political parties, of trade unions, of entrepreneurial

and managerial bodies, of universities and colleges, of social clubs, of voluntary organizations, of community committees, and eventually of any literate person who will not rest until there is no member of his community whose dignity is limited through his illiteracy.

". . . Why literacy for adults ? Would it not be better to concentrate any available funds on child literacy ? . . ."

In the last twenty years the number of illiterates rose to the actual 183 million. They will become 650 million in 30 years. An immense task will be assigned to adult education in the next future. If so, why should the importance of our actual first attempts be so underestimated !

. . .One year has passed since the adult literacy course began, yet no relevant socio-economic changes have occurred in the community. . ."

A one year course means the mastery of 400 or 600 written words. No socio-economic changes can be determined by such an acquisition. More ambitious levels or retention are also to be considered vain targets. Literacy, as a factor of change, is not a product, it is a process : a vital intersubjective life-long process, the first feeble beginning of which only takes place during the duration of the course. Its effects can certainly be measured, but not after one year, neither within the short period of a Five Year Plan, only in genetic terms, after one or two generations.

". . .Only a cost benefit analysis will tell us if adult literacy is worth paying . . ."

How can such a strict monetary economic criterion be applied to a literacy programme ? Adult literacy is not an input, nor a material good, it is a need ; and the answer we give to this need is determined more by the entire system of our values than only by hopes of financial returns. Who will calculate the cost of health programmes in terms of financial benefits ? There are social costs which a national community has to cover even when they are very high. Eventually benefits will come, for the neoliterates as well for us, both members of the same society, and their costs will be well worthwhile.

Literacy should secure the set up of adequate human resources for the economic growth of our country.

Unfortunately there is today, virtually everywhere, a tacit consent on the idea that development means economic growth. Economic growth which is seen as an end in itself, and for its attainment politicians, technocrats, economists hope that the literacy imparted to the workers, living in a transformational zone, may perfect and accelerate the building of a dam, the re-forestation of a mountain, the opening of a road, the establishment of an industry. (Did the Pharaons need literate workers for constructing their Pyramidis, the Romans their roads, the Americans their sky-scrapers ?).

We advocate a different approach. Instead of human resources development for economic growth, we seek economic resources for the development of the human condition of the people. The redeemed valleys will be populated by people, the reforested mountains inhabited by people, the opened roads walked by people, the new industries animated by people. Men whose wants, aspirations, choices have been subordinated to the calculations of the planners, men : whose intellectual and scientific acculturation has not been commensurated to the physical and technological changes of their habitats. Literacy for them may represent, the first step towards their own development and, by this, towards their responsible and active participation to the transformational processes.

We dream a planning policy leading to a convergence, may be never attempted before, between economic dictated and ethic values, between economic and human development.