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EDUCATIONAL RECONSTRUCTION

ED 167

Being a collection of Gandhiji's articles on the Wardha Scheme, the Zakir Husain Committee Report, and their Detailed Syllabus, along with a summary of the proceedings of the All India National Education Conference, Wardha

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HINDUSTANI TALIMI SANGH
SEGAON, WARDHA, C. P.

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FOREWORD

[From the 2nd Ed. of 'Basic National Education']

The fact that the first one thousand copies of this pamphlet have been sold out shows that what Dr. Zakir Husain and his committee have called Basic National Education is exciting fair interest in India and outside. A more correct though much less attractive description would be Rural National Education through village handicrafts. 'Rural' excludes the so-called higher or English education. 'National' at present connotes truth and non-violence. And 'through village handicrafts' means that the framers of the scheme expect the teachers to educate village children in their villages so as to draw out all their faculties through some selected village handicrafts in an atmosphere free from super-imposed restrictions and interference. Thus considered, the scheme is a revolution in the education of village children. It is in no sense an importation from the West. If the reader bears this fact in mind, he will be better able to follow the scheme in the perparation of which some of the best educationists have given their undivided attention.

M. K. GANDHI

Segaon, Wardha
28th. May, 1938

RESOLUTIONS PASSED AT THE WARDHA NATIONAL EDUCATION CONFERENCE

22nd & 23rd October, 1937

1. That in the opinion of this Conference free and compulsory education be provided for seven years on a nation-wide scale.

2. That the medium of instruction be the mother-tongue.

3. That the Conference endorses the proposal made by Mahatma Gandhi that the process of education throughout this period should centre around some form of manual and productive work, and that all the other abilities to be developed or training to be given should, as far as possible, be integrally related to the central handicraft chosen with due regard to the environment of the child.

4. That the Conference expects that this system of education will be gradually able to cover the remuneration of the teachers.

PART I

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SECTION I

GANDHIJI'S PROPOSITIONS

I

EDUCATION

How to solve the problem of education is the problem unfortunately mixed up with the disappearance of the drink revenues. No doubt there are ways and means of raising fresh taxation. Professors Shah and Khambatta have shown that even this poor country is capable of raising fresh taxation. Riches have not yet been sufficiently taxed. In this of all countries in the world possession of inordinate wealth by individuals should be held as a crime against Indian humanity. Therefore the maximum limit of taxation of riches beyond a certain margin can never be reached. In England, I understand, they have already gone as far as 70% of the earnings beyond a prescribed figure. There is no reason why India should not go to a much higher figure. Why should there not be death duties? Those sons of millionaires who are of age and yet inherit their parents' wealth, are losers for the very inheritance. The nation thus becomes a double loser. For the inheritance should rightly belong to the nation. And the nation loses again in that the full faculties of the heirs are not drawn out, being crushed under the load of riches. That death duties

cannot be imposed by provincial Governments does not affect my argument.

But as a nation we are so backward in education that we cannot hope to fulfil our obligations to the nation in this respect in a given time during this generation, if the programme is to depend on money. I have therefore made bold, even at the risk of losing all reputation for constructive ability, to suggest that education should be self-supporting. By education I mean an all-round drawing out of the best in child and man — body, mind and spirit. Literacy is not the end of education nor even the beginning. It is only one of the means whereby man and woman can be educated. Literacy in itself is no education. I would therefore begin the child's education by teaching it a useful handicraft and enabling it to produce from the moment it begins its training. Thus every school can be made self-supporting, the condition being that the State takes over the manufactures of these schools.

I hold that the highest development of the mind and the soul is possible under such a system of education. Only every handicraft has to be taught not merely mechanically as is done to-day, but scientifically, *i. e.*, the child should know the why and the wherefore of every process. I am not writing this without some confidence, because it has the backing of experience. This method is being adopted more

or less completely wherever spinning is being taught to workers. I have myself taught sandal-making and even spinning on these lines with good results. This method does not exclude a knowledge of history and geography. But I find that this is best taught by transmitting such general information by word of mouth. One imparts ten times as much in this manner as by reading and writing. The signs of the alphabet may be taught later when the pupil has learnt to distinguish wheat from chaff and when he has somewhat developed his or her tastes. This is a revolutionary proposal, but it saves immense labour and enables a student to acquire in one year what he may take much longer to learn. This means all-round economy. Of course, the pupil learns mathematics whilst he is learning his handicrafts.

I attach the greatest importance to primary education which, according to my conception, should be equal to the present matriculation less English. If all the collegians were of a sudden to forget their knowledge, the loss sustained by the sudden lapse of the memory of say a few lakhs of collegians would be as nothing compared to the loss that the nation has sustained through the ocean of darkness that surrounds three hundred millions. The measure of illiteracy is no adequate measure of the prevailing ignorance among the millions of villagers.

I would revolutionize college education and relate it to national necessities. There would be degrees for mechanical and other engineers. They would be attached to the different industries which should pay for the training of the graduates they need. Thus the Tatas would be expected to run a college for training engineers under the supervision of the State; the mill associations would run among them a college for training graduates whom they need. Similarly for the other industries that may be named. Commerce will have its college. There remain arts, medicine and agriculture. Several private arts colleges are to-day self-supporting. The State would, therefore, cease to run its own. Medical colleges would be attached to certified hospitals. As they are popular among monied men they may be expected, by voluntary contributions, to support medical colleges. And agricultural colleges to be worthy of the name must be self-supporting. I have a painful experience of some agricultural graduates. Their knowledge is superficial. They lack practical experience. But if they had their apprenticeship on farms which are self-sustained and answer the requirements of the country, they would not have to gain experience after getting their degrees and at the expense of their employers.

This is not a fanciful picture. If we would but shed our mental laziness, it would appear to be an eminently reasonable and practical

solution of the problem of education that faces the Congress Ministers and therefore the Congress. If the declarations recently made on behalf of the British Government mean what they should to the ear, the Ministers have the organizing and organized ability of the Civil Service at their disposal to execute their policy. The Services have learnt the art of reducing to practice the policies laid down for them even by capricious Governors and Viceroys. Let the ministers lay down a well-conceived but determined policy, and let the Services redeem the promise made on their behalf and prove worthy of the salt they eat.

There remains the question of teachers. I like Prof. K. T. Shah's idea of conscription being applied to men and women of learning. They may be conscripted to give a number of years, say five, to the teaching for which they may be qualified, on a salary not exceeding their maintenance on a scale in keeping with the economic level of the country. The very high salaries that the teachers and professors in the higher branches demand must go. The village teacher has to be replaced by more competent ones.

Harijan, 31-7-1937 M. K. GANDHI

II

" THE EDUCATIONAL PUZZLE "

" The cruellest irony of the new Reforms lies in the fact that we are left with nothing but the liquor revenue to fall back upon in order to give our children education, " said Gandhiji in one of his numerous talks he has been giving on the subject, ever since the Congress Ministers took up office. " That is the educational puzzle, but it should not baffle us. We have to solve it and the solution must not involve the compromise of our ideal of prohibition, cost whatever else it may. It must be shameful and humiliating to think that unless we got the drink revenue, our children would be starved of their education. But if it comes to it, we should prefer it as a lesser evil. If only we will refuse to be obsessed by the figures and by the supposed necessity of giving our children the exact kind of education that they get to-day, the problem should not baffle us. " That explains Gandhiji's emphasis on our educationists' putting their heads together in order to evolve a system of education which is at once inexpensive and also in consonance with the needs of our vast rural population.

"Then you would really abolish what is called secondary education and give the whole education up to matriculation in the village schools?" asked a questioner in great surprise.

"Certainly. What is your secondary education but compelling the poor boys to learn in a foreign language in seven years what they should learn in the course of a couple of years in their own mother-tongue? If you can but make up your minds to free the children from the incubus of learning their subjects in a foreign tongue, and if you teach them to use their hands and feet profitably, the educational puzzle is solved. You can sacrifice without compunction the whole of the drink revenue. But you must resolve to sacrifice this revenue, and think of the ways and means about education later. Make the beginning by taking the big step."

"But would just the mere declaration of prohibition mean prohibition? May it not be that we may sacrifice the revenue without touching the curse of drink, not to talk of abolishing it?"

"The declaration does not mean that you will thereafter sit still. You will impress everyone into your service. In fact, the whole staff is there—the staff of excise inspectors, their superior officers, and the whole of their subordinate staff. You will tell them that they will serve on no other terms but those of working for total abolition of drink. You will convert

every grog-shop into a recreation centre. You will concentrate on places where opportunities for getting drunk are greatest. You will ask the mill-owners and factory-owners to provide bright refreshment stalls, you will provide there refreshing drinks for them like sugar-cane juice, games for them, lantern-shows for them, and make them feel that they are like you. Impress everyone, without exception, into your service. The village school-master and the other officials should all be prohibition workers."

"Very good. But in many places you will find the village *patel* and others joining the drinking folk in their drunken revels. What about them?"

"Every one of your school children will be a prohibition worker. Ministers will be going up and down the country visiting the grog-shops turned recreation centres, have their cup of refreshing drink with the common folk and make these houses fashionable."

(Only the other day Minister Raman Menon told his audience that the whole nation should be interested in the stupendous experiment. Prohibition is the task of not one individual but of the whole nation. And apropos of the idea of converting the grog-shops into recreation centres, one may remember the famous "Dew Drop Inn" of Mary Hughes, that indefatigable worker in the cause, the daughter of the author of "Tom Brown's School Days", who has given

more than fifty years of her life to the task, and built the "Dew Drop Inn" over the ruins of a grog-shop.)

"Don't," said Gandhiji, "be deterred by the thought that prohibition failed in America. Remember that the stupendous experiment was tried there, where drinking is not looked upon as a vice, where millions usually drink. Here drink is held reprehensible by all religions, and it is not the millions who drink, but individuals who drink."

There is but a glimpse of the direction in which Gandhiji's mind is working and in which he wants all the Congressmen's minds to be working. Premier Rajagopalachari is burning the candle at both ends in making prohibition a success. "If people were generous-minded," he said at one of the innumerable meetings he is addressing, "they would say that they would do without education and have prohibition instead. What after all is the benefit of this education? The drunkard gets intoxicated with his drink and the educated man gets intoxicated with his luxuries. This educated man is not more cultured than the drunkard!"

M. D.

Harijan, 21-8-'37

III

WHAT ABOUT LITERACY?

I have received many opinions on the ideas I have been propounding in these columns on education. I may be able to reproduce the most important of them in these columns. For the moment I wish to answer a grievance a learned correspondent has made of the neglect of literacy of which he imagines I have been guilty. There is nothing in what I have written to warrant such a belief. For, have I not contended that the children in the schools of my conception will receive every instruction through the handicrafts they may be taught? That includes literacy. In my scheme of things, the hand will handle tools before it draws or traces the writing, the eyes will read the pictures of letters and words as they will know other things in life, the ears will catch the names and meanings of things and sentences. The whole training will be natural, responsive, and therefore the quickest and the cheapest in the land. The children of my school will, therefore, read much more quickly than they will write. And when they write they will not produce daubs as I do even now (thanks to my teachers), but they will trace correct letters even as they will trace

correct figures of the objects they may see. If the schools of my conception ever came into being, I make bold to say that they will vie with the most advanced schools in quickness, so far as reading is concerned, and even writing, if it is common ground that the writing must be correct and not incorrect as it now is in the vast majority of cases. The children of the Segaon school may be said to be writing in accordance with the orthodox standard; they spoil slate and paper according to my standard.

28-8-'37

M. K. GANDHI

IV

SELF-SUPPORTING EDUCATION

Dr. A. Lakshmipathi writes:

"I have seen some institutions conducted by missionaries, where the schools are worked only in the mornings, the evenings being spent either in agricultural operations or in some handicraft work for which the students are paid some wages according to the quality and quantity of work done by them. In this way, the institution is made more or less self-supporting, and the students do not feel like fish out of water when they leave the school, as they have learnt to do some work enabling them to earn at least their livelihood. I have noticed that the atmosphere in which such schools are conducted is quite different from the dull routine of the stereotyped schools of the Education Department. The boys look more healthy and happy in the idea that they have turned out some useful work, and are physically of a better build. These schools are closed for a short period in the agricultural seasons when all their energy is required for field work. Even in cities, such of the boys as have an aptitude may be employed in trades and professions, thereby

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enabling them to find a profession. One meal may also be provided at school for those boys who are in need, or for all who wish to partake of the same in an interval of half an hour during the morning classes. Poor boys may thus be persuaded to run to the school with pleasure and their parents may also encourage them to go to school regularly.

If this scheme of half-day school be adopted, the services of some of these teachers may be utilized for promoting adult education in the villages without any extra payment for such services. The building and other apparatus may also be useful in the same way.

I have seen the Minister for Education, Madras, and presented a letter stating that the deterioration of health of the present generation is mainly due to unsuitable hours of education at schools. I am of opinion that all schools and colleges should work only in the morning, i. e., between 6 and 11 a. m. A study of four hours at school must be quite enough. The afternoon should be spent at home, and the evening should be devoted to games and physical development. Some of the boys may employ themselves in earning their livelihood, and some may help their parents in their business. The students will be more in touch with their parents,

which is essential for development of any vocational calling and hereditary aptitudes.

If we realize that body-building is nation-building, the proposed change, though apparently revolutionary, is according to Indian customs and climate, and it would be welcome to most people."

Of Dr. Lakshmipathi's suggestion for restricting school hours to mornings, I do not wish to say much save to commend it to the educational authorities. As to the more or less self-supporting institutions, they could not do' anything else if they were to pay their way partly or wholly and make something of their pupils. Yet my suggestion has shocked some educationists because they have known no other method. The very idea of education being self-supporting seems to them to rob education of all value. They see in the suggestion a mercenary motive. I have, however, just been reading a monograph on a Jewish effort in matters educational. In it the writer speaks thus of the vocational training imparted in the Jewish schools :

> "So they find the labour of their hands to be worthy in itself. It is made lighter by intellectual activity, it is ennobled by the patriotic ideal which it serves."

Given the right kind of teachers, our children will be taught the dignity of labour and learn to regard it as an integral part and a means of their intellectual growth, and to

realize that it is patriotic to pay for their training through their labour. The core of my suggestion is that handicrafts are to be taught, not merely for productive work, but for developing the intellect of the pupils. Surely, if the State takes charge of the children between seven and fourteen, and trains their bodies and minds through productive labour, the public schools must be frauds and teachers idiots, if they cannot become self-supporting.

Supposing that every boy and girl works, not as a machine but as an intelligent unit, taking interest in the corporate work done under expert guidance, the corporate labour should be, say after the first year of the course, worth one anna per hour. Thus for twenty-six working days of four hours per day, each child will have earned Rs. 6-8-0 per month. The only question is whether millions of children can be so profitably employed. We should be intellectual bankrupts, if we cannot direct the energy of our children so as to get from them, after a year's training, one anna worth of marketable labour per hour. I know that nowhere in India do villagers earn so much as one anna per hour in the villages. That is because we have reconciled ourselves to the intense disparity between the haves and the have-nots, and because the city people have, perhaps unwittingly, joined in the British exploitation of the village.

Harijan, 11-9-'37 M. K. GANDHI

V

THE MEANING OF MANUAL WORK

Sjt. Ravishanker Shukla, the Education Minister, C. P., was good enough to pay a visit last week in company with all his educational experts including the Director of Education, Mr. Owen, and Mr. DeSilva. They wanted to understand from Gandhiji his idea of the revolution he intended in the present system of education, before they actually started the experiment. "It is by making the children return to the State a part of what they receive from it that I propose to make education self-supporting," he explained. "I should combine into one what you call now the primary education and secondary or high school education. It is my conviction that our children get nothing more in the high schools than a half-baked knowledge of English, besides a superficial knowledge of mathematics and history and geography, some of which they had learnt in their own language in the primary classes. If you cut out English from the curriculum altogether, without cutting out the subjects you teach, you can make the children go through the whole course in seven years, instead of eleven, besides giving them manual work whereby they can make a fair return to the

State. Manual work will have to be the centre of the whole thing. I am told that Messrs Abbot and Wood recognize the value of manual work as an important part of rural education. I am glad to be supported by reputed educationists. But I do not suppose they place on manual work the kind of emphasis I place. For I say that the development of the mind should come through manual training. The manual training will not consist in producing articles for a school museum, or toys which have no value. It should produce marketable articles. The children will not do this as children used to do under the whip in the early days of the factories. They will do it because it entertains them and stimulates their intellect."

"But," objected Mr. DeSilva, "whilst I accept the proposition that we must teach through creative work, how can we expect an immature child to compete with a mature individual?"

"The child will not compete with the mature individual. The State will take over the articles and find a market for them. Teach them to make things suitable for the requirements. Take mats for instance. What they do at home as tedious labour they will do here intelligently. The tremendous problem will become easy when the education you give will become both self-supporting and self-acting."

"But before we can give them this kind of education, we shall have to wipe out the present generation of teachers."

"No. There is no intermediate stage. You must make a start and prepare the teachers whilst you go through the process."

Later Gandhiji requested these gentlemen to confer at length with Sjt. Aryanayakam, who was taking a keen interest in the new idea, Dr. Bharatan Kumarappa, and Kakasaheb, and others who had enough experience of education and were keen educationists. They are having a very useful discussion in order to evolve a practical scheme, whilst these notes are being written, and we shall soon know the results of their discussions.

In the meanwhile, let me help to throw further light on Gandhiji's meaning of manual work. I translate from a letter he wrote to one who has combined manual training with literary training in his school for a certain number of years: "I am afraid," he said, "you have not sufficiently grasped the principle that spinning, carding, etc., should be the means of intellectual training. What is being done there is that it is a supplementary course to the intellectual course. I want you to appreciate the difference between the two. A carpenter teaches me carpentry. I shall learn it mechanically from him, and as a result I shall know the use of various tools; but that will hardly develop

my intellect. But if the same thing is taught to me by one who has taken a scientific training in carpentry, he will stimulate my intellect too. Not only shall I then have become an expert carpenter but also an engineer. For, the expert will have taught me mathematics, also told me the differences between various kinds of timber, the place where they come from, giving me thus a knowledge of geography and also a little knowledge of agriculture. He will also have taught me to draw models of my tools, and given me a knowledge of elementary geometry and arithmetic. It is likely that you do not correlate manual work with intellectual training which is given exclusively through reading and writing. I must confess that all I have up to now said is that manual training must be given side by side with intellectual training, and that it should have a principal place in national education. But now I say that the principal means of stimulating the intellect should be manual training. I have come to this conclusion because the intellect of our boys is being wasted. Our boys do not know what to do on leaving schools. True education is that which draws out and stimulates the spiritual, intellectual and physical faculties of the children. This education ought to be for them a kind of insurance against unemployment."

Harijan, 11-9-'37 M. D.

VI

FOUR THINGS NECESSARY

The modulation of the voice is as necessary as the training of the hand. Physical drill, handicrafts, drawing and music should go hand in hand in order to draw the best out of the boys and girls and create in them a real interest in their tuition.

That this means a revolution in the system of training is admitted. If the future citizens of the State are to build a sure foundation for life's work, these four things are necessary. One has only to visit any primary school to have a striking demonstration of slovenliness, disorderliness and discordant speech. I have no doubt, therefore, that when the Education Ministers in the several provinces recast the system of education and make it answer the requirements of the country, they will not omit the essentials to which I have drawn attention. My plan of primary education certainly comprises these things which easily become possible the moment you remove from the children's shoulders the burden of having to master a difficult foreign language.

Of course, we have not the staff of teachers who can cope with the new method. But that

difficulty applies to every new venture. The existing staff of teachers, if they are willing to learn, should be given the opportunity of doing so, and should also have the immediate prospect of a substantial increase in their salaries if they will learn the necessary subjects. It is unthinkable that for all the new subjects that are to become part of primary education separate teachers should be provided. That would be a most expensive method and so wholly unnecessary. It may be that some of the primary school teachers are so ill-equipped that they cannot learn the new subjects within a short time. But a boy who has studied up to the matriculation standard should not take more than three months to learn the elements of music, drawing, physical drill and a handicraft. If he acquires a working knowledge of these, he will be able always to add to it while he is teaching. This presupposes, no doubt, eagerness and zeal on the part of the teachers to make themselves progressively fit for the task of national regeneration.

M. K. GANDHI

11-9-'37

VII

MORE TALKS ON SELF-SUPPORTING EDUCATION

In spite of the weak state of his health and the quantities of rest that he needs, Gandhiji has shown his readiness to discuss his theory of self-supporting education with anyone who has thought about the subject and wants to contribute his share to making the new experiment a success. The discussions have been, in view of his health, necessarily few and brief, but every now and then something new has emerged, and whenever he has talked, he has had some fresh suggestion to make and fresh light to throw. Thus on one occasion he sounded a warning against the assumption that the idea of self-supporting education sprang from the necessity of achieving total prohibition as soon as possible. "Both are independent necessities," he said. "You have to start with the conviction that total prohibition has to be achieved, revenue or no revenue, education or no education. Similarly, you have to start with the conviction that looking to the needs of the villages of India our rural education ought to be made self-supporting if it is to be compulsory."

"I have the first conviction deep down in me," said an educationist who carried on the discussion. "Prohibition to me is an end in itself, and I regard it as a great education in itself. I should, therefore, sacrifice education altogether to make prohibition a success. But the other conviction is lacking. I cannot yet believe that education can be made self-supporting."

"There, too, I want you to start with the conviction. The ways and means will come as you begin to work it out. I regret that I woke up to the necessity of this at this very late age. Otherwise I should have made the experiment myself. Even now, God willing, I shall do what I can do to show that it can be self-supporting. But my time has been taken up by other things all these years, equally important perhaps, but it is this stay in Segaon that brought the conviction home to me. We have up to now concentrated on stuffing children's minds with all kinds of information, without ever thinking of stimulating and developing them. Let us now cry a halt and concentrate on educating the child properly through manual work, not as a side activity, but as the prime means of intellectual training."

"I see that too. But why should it also support the school?"

"That will be the test of its value. The child at the age of 14, that is, after finishing a

seven years' course, should be discharged as an earning unit. Even now the poor people's children automatically lend a helping hand to their parents—the feeling at the back of their minds being, what shall my parents eat and what shall they give me to eat if I do not also work with them ? That is an education in itself. Even so the State takes charge of the child at seven and returns it to the family as an earning unit. You impart education and simultaneously cut at the root of unemployment. You have to train the boys in one occupation or another. Round this special occupation you will train up his mind, his body, his handwriting, his artistic sense, and so on. He will be master of the craft he learns."

"But supposing a boy takes up the art and science of making khadi. Do you think it must occupy him all the seven years to master the craft ?"

"Yes. It must, if he will not learn it mechanically. Why do we give years to the study of history or to the study of languages ? Is a craft any the less important than these subjects which have been up to now given an artificial importance ?"

"But as you have been mainly thinking of spinning and weaving, evidently you are thinking of making of these schools so many weaving schools. A child may have no aptitude for weaving and may have it for something else."

"Quite so. Then we will teach him some other craft. But you must know that one school will not teach many crafts. The idea is that we should have one teacher for twenty-five boys, and you may have as many classes or schools of twenty-five boys as you have teachers available, and have each of these schools specializing in a separate craft—carpentry, smithy, tanning or shoe-making. Only you must bear in mind the fact that you develop the child's mind through each of these crafts. And I would emphasize one more thing. You must forget the cities and concentrate on the villages. They are an ocean. The cities are a mere drop in the ocean. That is why you cannot think of subjects like brick-making. If they must be civil and mechanical engineers, they will, after the seven years' course, go to the special colleges meant for these higher and specialized courses.

"And let me emphasize one more fact. We are apt to think lightly of the village crafts because we have divorced educational from manual training. Manual work has been regarded as something inferior, and owing to the wretched distortion of the *varna* we came to regard spinners and weavers and carpenters and shoe-makers as belonging to the inferior castes, the proletariat. We have had no Cromptons and Hargreaves because of this vicious system of considering the crafts as something inferior, divorced from the skilled. If they had been

regarded as callings having an independent status of their own equal to the status that learning enjoyed, we should have had great inventors from among our craftsmen. Of course, the 'Spinning Jenny' led on to the discovery of water-power and other things which made the mill displace the labour of thousands of people. That was, in my view, a monstrosity. We will, by concentrating on the villages, see that the inventive skill that an intensive learning of the craft will stimulate will subserve the needs of the villagers as a whole."

Harijan, 18-9-'37 M. D.

VIII

SELF-SUPPORTING SCHOOLS

This article* is a striking case of preconceived notions blurring one's vision. The writer has not taken the trouble to understand my plan. He condemns himself when he likens the boys in the schools of my imagination to the boys on the semi-slave plantations of Ceylon. He forgets that the boys on the plantations are not treated as students. Their labour is no part of their training. In the schools I advocate boys have all that boys learn in high schools less English but plus drill, music, drawing and, of course, a vocation. To call these factories amounts to an obstinate refusal to appreciate a series of facts. It is very like a man refusing to read the description of a human being and calling him a monkey because he has seen no other animal but a monkey, and because the description in some particulars, but only in some, answers that of monkeys. The Professor would have been on safe ground if he had cautioned the public against expecting all that I have claimed for the proposal. The caution

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* Received from an anonymous friend in criticism of Gandhiji's suggestions.

would, however, be unnecessary because I have uttered it myself.

I admit that my proposal is novel. But novelty is no crime. I admit that it has not much experience behind it. But what experience my associates and I have encourages me to think that the plan, if worked faithfully, will succeed. The nation can lose nothing by trying the experiment even if it .fails. And the gain will be immense if the experiment succeeds even partially. In no other way can primary education be made free, compulsory and effective. The present primary education is admittedly a snare and a delusion.

Shri Narhari Parikh's figures have been written in order to support the plan to the extent they can. They are not conclusive. They are encouraging. They supply good data to an enthusiast. Seven years are not an integral part of my plan. It may be that more time will be required to reach the intellectual level aimed at by me. The nation won't lose anything whatsoever by a prolongation of the period of instruction. The integral parts of the scheme are :

1. Taken as a whole a vocation or vocations are the best medium for the all-round development of a boy or a girl, and therefore all syllabus should be woven round vocational training.

2. Primary education thus conceived as a whole is bound to be self-supporting even though for the first or even the second year's course it may not be wholly so. Primary education here means as described above.

The Professor questions the possibility of giving arithmetical and other training through vocations. Here he speaks without experience. I can speak from experience. I had no difficulty in giving at the Tolstoy Farm (Transvaal) all-round development to the boys and girls for whose training I was directly responsible. The central fact there was vocational training for nearly eight hours. They had one or, at the most, two hours of book learning. The vocations were digging, cooking, scavenging, sandal-making, simple carpentry, and messenger work. The ages of the children ranged from six to sixteen. That experiment has been since much enriched.

M. K. GANDHI

Harijan, 18-9-'37

IX

TWO PROPOSITIONS

What I have been saying as a layman, for the lay reader, Dr. Arundale has said as an educationist, for the educationist, and those who have in their charge the moulding of the youth of the country. I am not surprised at the caution with which he approaches the idea of self-supporting education. For me it is the crux. My one regret is that what I have seen through the glass darkly for the past forty years, I have begun to see now quite clearly under the stress of circumstances.

Having spoken strongly in 1920 against the present system of education, and having now got the opportunity of influencing, however little it may be, ministers in seven provinces, who have been fellow workers and fellow sufferers in the glorious struggle for freedom of the country, I have felt an irresistible call to make good the charge that the present mode of education is radically wrong from bottom to top. And what I have been struggling to express in these columns very inadequately has come upon me like a flash, and the truth of it is daily growing upon me. I do, therefore, venture to ask the educationists of the country, who have

no axes to grind and who have an open mind, to study the two propositions that I have laid down, without allowing their preconceived and settled notions about the existing mode of education to interfere with the free flow of their reason. I would urge them not to allow my utter ignorance of education, in its technical and orthodox sense, to prejudice them against what I have been saying and writing. Wisdom, it is said, often comes from the mouths of babes and sucklings. It may be a poetic exaggeration, but there is no doubt that sometimes it does come through babes. Experts polish it and give it a scientific shape. I therefore ask for an examination of my propositions purely on merits. Let me restate them here, not as I have previously laid them down in these columns, but in the language that occurs to me as I am dictating these lines:—

1. Primary education, extending over a period of 7 years or longer, and covering all the subjects up to the matriculation standard, except English, plus a vocation used as the vehicle for drawing out the minds of boys and girls in all departments of knowledge, should take the place of what passes to-day under the name of primary, middle and high school education.

2. Such education, taken as a whole, can, must be, self-supporting; in fact, self-support is the acid test of its reality.

Harijan, 2-10-'37 M. K. GANDHI

X

PRIMARY EDUCATION IN BOMBAY

In discussing the question of primary education I have hitherto deliberately confined myself to the villages, as it is in the villages that the bulk of India's population resides. To tackle successfully the question of the villages is to solve the problem for the cities also. But a friend interested in the question of primary education in the city of Bombay puts the following poser:

> "The Congress is just now preoccupied with the question of financing primary education. The cry to make primary education self-supporting is in the air. It would, therefore, be worth while to examine as to how and to what extent this can be done in the case of a city like Bombay. The annual budget of the Bombay Corporation for education is said to be somewhere between 35 and 36 lakhs of rupees. But this amount would have to be augmented by several lakhs of rupees, before the scheme of introducing compulsory primary education in Bombay can be realized. At present over twenty lakhs of rupees are annually spent on teachers' salaries, while another four lakhs go as rent. This gives an average of

Rs. 40 to, Rs. 42 for each student. Can a student earn this amount in the course of his vocational training? And if not, then, how can primary education be made self-supporting?"

I have no doubt in my mind that the city of Bombay and its children would only stand to gain by adopting a vocational basis for primary education. At present all that these children can show at the end of their primary education course is not worth much and certainly not calculated to fit them for citizenship.

I have no hesitation in recommending the adoption of a vocational basis for primary education for cities. It would enable the better part, if not the whole, of the 35 lakhs of the present expenditure on primary education in Bombay to be saved. Taking, for the sake of convenience, Rs. 40 to be the annual expense of giving primary education to a child in Bombay, it would mean that 87,500 children in all are at present receiving education out of the educational grant of the Bombay Corporation. Now, taking the population of Bombay to be ten lakhs, the total number of children of the school-going age ought to be at least one lakh and a half. This means that no less than 62,000 children of school-going age in the city of Bombay are at present going without primary education. If we take away 6,000 out of this figure, as the number of children who are

possibly receiving their education privately in their homes, it would still leave 56,000 children for whom primary education has still got to be provided. At the present scale of expenditure this would require a sum of Rs. 22,40,000 which, so far as I can see, is hardly likely to be forthcoming on this side of Doomsday.

I am a firm believer in the principle of free and compulsory primary education for India. I also hold that we shall realize this only by teaching the children a useful vocation and utilizing it as a means for cultivating their mental, physical and spiritual faculties. Let no one consider these economic calculations in connection with education as sordid or out of place. There is nothing essentially sordid about economic calculations. True economics never militates against the highest ethical standard, just as all true ethics to be worth its name must, at the same time, be also good economics. An economics that inculcates Mammon-worship, and enables the strong to amass wealth at the expense of the weak, is a false and dismal science. It spells death. True economics, on the other hand, stands for social justice; it promotes the good of all equally including the weakest, and is indispensable for decent life. I therefore make bold to suggest that Bombay would be setting a noble example for the whole country to follow, if by teaching its children a useful industry it can make primary education pay its

way. Supposing a student works at a vocation for four hours a day, then taking the number of working days in a month to be twentyfive and the rate of remuneration two pice per hour, he or she would be earning Rs. 3-2-0 per month for the school. The vocational exercise will keep the mind of the student fresh and alert while providing at the same time a means for drawing out his or her intellect. This does not mean that the child would begin to pay two pice per hour from the commencement. But he will pay during the whole period of seven years at the rate of two pice per hour

It is a gross superstition to think that this sort of vocational exercise will make education dull, or cramp the child's mind. Some of my happiest recollections are of the bright and joyful faces of children while they were receiving vocational instruction under competent teachers. As against this, I have also known the most fascinating of subjects boring children when taught in the wrong way by an incompetent instructor.

But, it may be asked, wherefrom are we going to get capable instructors of the kind that we require? My reply is that necessity is the mother of invention. Once we realize the necessity for reorientation of our educational policy, the means for giving effect to it will be found without much difficulty. I am sure that, for a fraction of the time and expense incurred

on the present educational system and the staff to man it, we could easily train all the manual instructors that we should require for our work. It ought to be possible for a committee of educational experts of Bombay, if they are in earnest, to draw up a scheme of primary education on the lines suggested by me and to put it into operation without loss of time. Only they must have a living faith in it as I have. Such faith can only grow from within; it cannot be acquired vicariously. Nothing great in this world was ever accomplished without a living faith.

What kinds of vocations are the fittest for being taught to children in urban schools? There is no hard and fast rule about it. But my reply is clear. I want to resuscitate the villages of India. To-day our villages have become a mere appendage to the cities. They exist, as it were, to be exploited by the latter and depend on the latter's sufferance. This is unnatural. It is only when the cities realize the duty of making an adequate return to the villages for the strength and sustenance which they derive from them, instead of selfishly exploiting them, that a healthy and moral relationship between the two will spring up. And if the city children are to play their part in this great and noble work of social reconstruction, the vocations through which they are to achieve their education ought to be directly

related to the requirements of the villages. So far as I can see, the various processes of cotton manufacture, from ginning and cleaning of cotton to the spinning of yarn, answer this test as nothing else does. Even to-day the cotton is grown in the villages and is ginned and spun and converted into cloth in the cities. But the chain of processes which cotton undergoes in the mills from the beginning to the end constitutes a huge tragedy of waste in men, materials and mechanical power.

My plan to impart primary education through the medium of village handicrafts like spinning and carding, etc., is thus conceived as the spear-head of a silent social revolution fraught with the most far-reaching consequences. It will provide a healthy and moral basis of relationship between the city and the village and thus go a long way towards eradicating some of the worst evils of the present social insecurity and poisoned relationship between the classes. It will check the progressive decay of our villages and lay the foundation of a juster social order in which there is no unnatural division between the 'haves' and 'have-nots' and everybody is assured of a living wage and the right to freedom. And all this would be accomplished without the horrors of a bloody class-war or a colossal capital expenditure such as would be involved in the mechanization of a vast continent like India. Nor would it entail a helpless

dependence on foreign imported machinery or technical skill. Lastly, by obviating the necessity for highly specialized talent, it would place the destiny of the masses, as it were, in their own hands. But who will bell the cat? Will the city-folk listen to me at all? Or will mine remain a mere cry in the wilderness? Replies to these and similar questions will depend more on lovers of education like my correspondent living in cities than on me.

Harijan, 9-10-'37

M. K. GANDHI

XI

SOME CRITICISM ANSWERED

A high educational officer who wishes to remain unknown has sent me, through a common friend, an elaborate and considered criticism of my plan for primary education. For want of space I may not reproduce the whole argument here. Nor is there anything new in it. And yet it deserves a reply, if only for the pains the writer has bestowed on his paper.

This is how my suggestions have been paraphrased by the writer:

"(i) Primary education should start and end with training in crafts and industries, and that whatever may be necessary by way of general information should come in as auxiliaries in the initial stage, and that formal training through the medium of reading and writing in subjects like history, geography and arithmetic come right at the end.

(ii) Primary education should be self-supporting from the first, and that this should and could be achieved by the State taking over the finished articles coming from the schools and selling them to the public.

(iii) Primary education should be fully up to the Matriculation standard — less, of course, English.

(iv) Prof. K. T. Shah's idea of conscripting young men and women to teach in the primary schools should be fully examined and, if possible, acted upon."

The writer at once proceeds to say:

"If we analyse the above programme it seems to us that the underlying ideas are in some cases medieval, and in some cases based upon assumptions which would not bear examination. Probably No. (iii) is a very high standard."

It would have been better if, instead of paraphrasing, the writer had quoted my own words. For all the statements in the first paraphrase are wide of the truth. My point is not that the start should be made with crafts and the rest should come in as auxiliaries. On the contrary, I have said that the whole of the general education should come through the crafts and simultaneously with their progress. This is wholly different from what the writer imputes to me. I do not know what happened in the Middle Ages. But I do know that the aim in the Middle Ages or any age was never to develop the whole man through crafts. The idea is original. That it may prove to be wrong does not affect the originality. And an original idea does not admit of a frontal attack unless it is tried on a sufficiently large scale. To say *a priori* that it is impossible is no argument.

Nor have I said that the formal training through the medium of reading and writing

should come right at the end. On the contrary, the formal training comes in at the very beginning. Indeed, it is an integral part of the general equipment. I have indeed said, and I repeat here, that reading may come a little later, and writing may come last. But the whole process has to be finished within the first year; so that at the end of the first year in the school of my imagination a seven year old child, boy or girl, will have much more than the general information that any boy or girl has in the present primary school during the first year. He will read correctly and draw correct letters instead of making the daubs that the children generally do at present. The child will also know elementary additions and subtractions and the simple multiplication table. He will have learned all this through and while he has learned a productive craft, say spinning, by choice.

The second paraphrase is just as unhappy as the first. For, what I have claimed is that education through handicrafts should be self-supporting during the sum total of seven years I have assigned for it. I have specially said that during the first two years it may mean a partial loss.

Medieval times may have been bad, but I am not prepared to condemn things simply because they are medieval. The spinning wheel is undoubtedly medieval, but seems to have come to stay. Though the article is the same

it has become a symbol of freedom and unity as at one time, after the advent of the East India Company, it had become the symbol of slavery. Modern India has found in it a deeper and truer meaning than our forefathers had dreamt of. Even so, if the handicrafts were once symbols of factory labour, may they now be symbols and vehicles of education in the fullest and truest sense of the term. If the ministers have enough imagination and courage, they will give the idea a trial in spite of the criticism, undoubtedly well-meant, of high educational officers and others, especially when the criticism is based on imaginary premises.

Though the writer has been good enough to assume the possibility of Prof. K. T. Shah's scheme of conscription being sound, he later on evidently repents of it. For he says :

> "The idea of conscripting teachers is to our mind an outrage. We shall have in schools, where young children assemble, men and women who have voluntarily dedicated their lives to this profession so far as such a dedication is possible in this world, and who will bring sunshine and zeal. We have made far too many experiments with our young men and women, but this one bids fair in its results to land us in a ruin from which there will be no escape for at least half a century. The whole thing is based on the notion that

teaching is one of those arts for which no adequate training is necessary and that everyone is a born teacher. How a man of K. T. Shah's eminence comes to hold it is inexplicable. The idea is a freak idea bound to be tragic in results if applied. Again, how can each and everyone train children in handicrafts, etc ?"

Prof. Shah is well able to defend his proposition. But I would like to remind the writer that the existing teachers are not volunteers. They are hirelings (the word is used in its natural sense) working for their bread and butter. Prof. Shah's scheme does contemplate possession of patriotism, spirit of sacrifice, a certain amount of culture, and a training in a handicraft, before they are taken up. His idea is substantial, quite feasible, and deserves the greatest consideration. If we have to wait till we have born teachers, we shall have to wait till the Judgment Day for them. I submit that teachers will have to be trained on a wholesale scale during the shortest term possible. This cannot be done unless the services of the existing educated young men and women are gently impressed. It will not be unless there is a general willing response from that body. They responded, however feebly, during the civil disobedience campaign. Will they fail to respond to the call for constructive service against maintenance money ?

Then the writer asks:

"1. Are we not to allow for a great deal of wastage in raw materials when handled by little boys?

2. Are the sales to be effected by a central organization? What about the cost of this?

3. Are the people to be compelled to buy at these stores?

4. What about the cases of those communities which are at present manufacturing these? What will be the reaction on these?"

My answers are:

1. Of course there will be wastage, but there will be, even at the end of the first year, some gain by each pupil.

2. The State will absorb much of the material for its own requirements.

3. Nobody will be compelled to buy the nation's children's manufactures, but the nation is expected to buy with pardonable pride and patriotic pleasure what its children make for its needs.

4. There is hardly any competition in the products of village handicrafts. And care will be taken to manufacture things which do not come into unfair competition with any indigenous manufactures. Thus khadi, village paper, palm *gur* and the like have no competitors.

Harijan, 16-10-'37 M. K. GANDHI

XII

THE SEGAON METHOD AS I SEE IT

1. The Segaon Method is the name given to the principles and system of education enunciated by Mahatma Gandhi.

2. It is the application of the law of non-violence in the training of the child as a prospective citizen of the world.

3. It is claimed that the method is applicable, with appropriate changes, to children of all countries and classes where the military spirit is to be substituted by the peaceful. Anyway it is the only proper system for the people of India.

4. Its aim is to make the child share the obligations of citizenship from the earliest age at which it begins to show some power of discrimination.

5. The centre of the method lies in a productive industry. All training will be principally through the medium of and in correlation with such industry. Thus history, geography, mathematics, physical and social sciences and general literature will centre round and be related to that industry. Other matters in the above subjects will not be omitted, but greater emphasis will be laid on the former.

6. Industry will not be only the means and medium of instruction; but, to the extent it is an inevitable condition of human life, it will also be an end of instruction. So that the aim will be to inculcate in the pupil a sense of the dignity of all manual labour — even scavenging — and the duty of earning an honest livelihood by labour.

7. It shall be the aim of the teacher to bring out the moral, rational and physical capacities of the child through the industry taught.

8. Social sciences and hygiene will not be taught as mere class-room subjects, but by planning joint and several programmes of service to the whole village not excluding dumb creatures. The school will be the centre for the radiation of culture to the surrounding society.

9. The method may be shortly summed up in the phrase, "From the hand and the senses to the brain and the heart, and from the school to society and God."

10. It is held that three to four hours' joint daily labour in the corporate life of a school is a healthy and educative engagement for children of both sexes, whatever the class they come from. "In the interests of both science and industry, as well as of society as a whole, every human being, without distinction of birth, ought to receive such an education as would enable him or her to combine a thorough knowledge of

science with a thorough knowledge of handicraft." (Kropotkin)

11. Under the present system most pupils do not know, even at the end of their college career, what they will do after completing their studies. Unless their material circumstances are hopelessly adverse, young boys and girls pass on at an enormous expense from primary to secondary schools, and from secondary schools to colleges, not for the love of the cultural and other education which the schools and colleges profess to give, but simply because they do not know what else they should or can do. They go on with their studies merely in order to put off till the last day, the difficult question of settling the main career of life. More than twenty years of the growing period of life spent in such an aimless manner must inculcate in the pupil habits of procrastination, hesitation, irresoluteness and inability to take decisions in the pursuits of life. The Segaon method will aim to bring about in the child, at as early an age as possible, the determination of the future career it should expect to pursue, and will arm him with at least one occupation, which will give him a wage sufficient for a healthy subsistence.

12. In the Segaon method, literacy (that is, information on various matters through reading and writing, and capacity to follow logical or pseudological controversy) is not considered

knowledge or even the medium of knowledge, but is regarded only as a symbolical representation both of knowledge as well as accomplished ignorance. The knowledge of these symbols is necessary and useful if the sources of knowledge are alive. It will be the aim of the Segaon method to keep these sources alive. The means of doing so are work, observation, experience, experiment, service and love. Without these, learning through books acts as a hindrance to the development of the spiritual and rational faculties of the student, and also impairs his physique.

13. The basic course under the Segaon method should include a good knowledge of the mother-tongue, a fair acquaintance with its literature, a working knowledge of the national language of India, a general knowledge of such subjects as mathematics, history, geography, physical and social sciences, drawing, music, drill, sports, gymnastics, etc., as well as of a vocation; the vocation should be mastered to a degree which should enable an average student to start a modest career, and a zealous and bright student, if he will, to take up a course of higher general or vocational training. At that stage it should not include English or such other subjects as are not generally required in practical life, or are not absolutely essential for the training of the intellect or as a fair background for further self-education.

14. The basic course should extend to not less than seven years, and may be a little more if necessary. If the schools become self-supporting, as explained later on, and if the guardians also derive some benefit, the maintenance of children for a longer period will present no obstacle to the parents.

15. Underlying the Segaon method, there are a few fundamental principles regarding the functions and duties of the State and the minimum living wage. They are stated in the following paragraphs.

16. A State is not worth its name, if it cannot usefully employ all adults willing to work for it and trained by it under a measure of compulsion, and pay them the minimum wage necessary for healthy subsistence.

17. Under the present market rates, it is held that the living minimum wage for India should not be less than one anna for each hour of work at the average speed.

18. The present system of government and the structure of society do not come up to this standard. We are not, therefore, worthy of the name "State." Whether the deficiency is due to foreign domination or to ourselves, it has to be remedied. It is claimed that the Segaon method, rightly and courageously applied, will give us sufficient strength and means to bring about the necessary changes.

19. In order to achieve this the Government must establish its hold over at least one such industry, in which it can employ practically an unlimited number of workers without loss to itself.

20. It is submitted that hand-spinning and hand-weaving is the only industry which can do so in India. This country has all the natural advantages of raw material, and enormous manpower for specialization in that industry and only a small outlay is required. This is backed by tradition since for centuries India was the sole manufacturer of cotton fabrics for the world.

21. But the spinner's wage, which was never very satisfactory, suffered still more in the effort to compete with machine-made goods. The Government as well as the public must remove the competition and, until that is done, entirely disregard it by supporting the khadi industry at a price which will give the spinner a living wage.

22. It is also necessary that the wage should increase all round at least to the level of the minimum living wage. The Government must gather strength and the people must co-operate to make this possible.

23. The minimum wage mentioned above is the adult's wage. For a pupil of a primary school it is taken to be half anna per hour.

24. Reckoning on an average three hours of work per day for about nine months in the year, the test of the efficiency of a Segaon school should be that a full school of not less than seven classes, with on an average 25 pupils per class and eight or nine members on the staff, should be able to earn the annual salaries of the staff from the products manufactured in the school. The minimum salary of a teacher is expected to be Rs. 25 per month; (in no case should it be less than Rs. 20).

25. The capacity of the pupils must be increased and the implements and methods of instruction must be improved until at least this standard of efficiency is reached.

26. With the school wage reckoned as above, there is no apprehension of the school products entering into competition with private artisans' products at the present village wage. By the time the village wages rise to the standard expected above, the same progress in capacity and implements will have been made by the village artisan also. Consequently the apprehension of competition seems groundless.

27. The school wage mentioned above must, for the present, be guaranteed by the State. At any rate, it should be at a par with the rates prescribed by the A. I. S. A. and the A. I. V. I. A., and progress with them, till for the basic school it reaches the standard of half an anna per hour. For the present, this will seem like

subsidizing the school in an indirect manner and, according to present market prices, it may be felt as a financial burden on the Government. But it is felt that there is so much room for improvement in the capacity and implements of workers that within a period of five years, it should be possible for the school as well as for private artisans (who take to similar training and implements) to earn the minimum wage desired for them, without making the products appreciably more costly than they now are.

28. The principle that the school must be self-supporting in the sense explained above, has been laid down not merely from economic considerations, but because it will also provide a practical test of the efficiency of the school as an educational institution on its vocational side.

29. The method as outlined above has been worked out mainly for basic education through the khadi industry. Other industries are not to be discouraged or neglected; only there are not enough data for working out other handi-crafts.

30. With appropriate changes the principles of the Segaon method can be applied also to higher stages of education. All education should have a self-supporting factor in its scheme. In the higher stages, either the institution must be supported by the pupils' labour or fees, or the pupil must be able to support himself from his school or other labour, if he does not pay fees.

Harijan, 4-12-'37

K. G. MASHRUWALA

XIII

THE NEW EDUCATION

At a meeting of the newly created National Education Board, Gandhiji gave the inner meaning and objective of the new education. He said, "We have to make of this training school a school for winning freedom and for the solution of all our ills, of which the chief one is our communal troubles. For this purpose we shall have to concentrate on non-violence. Hitler's and Mussolini's schools accept as their fundamental principle violence. Ours is non-violence according to the Congress. All our problems have therefore to be solved non-. violently. Our arithmetic, our science, our history will have a non-violent approach, and the problems in these subjects will be coloured by non-violence. When Madame Halide Edib Hanum delivered her address to the Jamia Millia Islamia on Turkey, I remarked that whereas generally history is a chronicle of kings and their wars, the future history will be the history of man. That can be or is only non-violent. Then we shall have to concentrate not on city industries but on rural industries, that is to say, if we want to keep all the 7,00,000 of our villages alive, and not only a fraction of

them, we have to revive our village handicrafts. And you may be sure that if we can impart scholastic training through those crafts we can bring about a revolution. Our text-books will have also to be prepared with the same end.

" I want you to give your close consideration to what I am saying and reject what does not appeal to you. If what I say does not appeal to our Mussalman brethren, they may reject it summarily. The non-violence I want is not non-violence limited to the fight with the British but is to be applied to all our internal affairs and problems — true active non-violence from which will issue live Hindu-Muslim unity and not a unity based on mutual fear like the pact, for instance, between Hitler and Mussolini."

Harijan, 7-5-'38

XIV

RELIGIOUS INSTRUCTION

In June 1938, the delegates to a training course organized by the Hindustani Talimi Sangh to prepare the educational officers of congress provinces for education on the lines of the Wardha scheme, had the opportunity of meeting Gandhiji twice at Segaon, and placing their questions and difficulties before him.

The most important of all the problems placed before Gandhiji for solution was the place of religious instruction in the Wardha scheme. To the question, as to what is the place of religious instruction in the Wardha scheme he answered:

"We have left out the teaching of religions from the Wardha scheme of education because we are afraid that religions as they are taught and practiced today lead to conflict rather than unity. But on the other hand, I hold that the truths that are common to all religions can and should be taught to all children. These truths cannot be taught through words or through books — the children can learn these truths only through the daily life of the teacher. If the teacher himself lives up to the tenets of truth and

justice, then alone can the children learn that truth and justice are the basis of all religions."

When Mahatmaji was asked whether it is possible to teach children between the ages of seven and fourteen, equal respect for all religions, he answered, "Yes, I think so. The truth that all religions are the same in essentials, that we must love and respect others' faiths as we respect our own, is a very simple truth, and can easlily be understood and practised by children of seven. But of course, the first essential is that the teacher must have this faith himself."

XV

EDUCATION THROUGH VOCATION— A SYNTHESIS

In the course of a number of talks, Gandhiji explained at length the genesis, in his own mind, of the new education scheme, and the synthesis between vocation and education that he has in view. "I had long been impressed with the necessity for a new departure," said he, "as I knew the failure modern education had been, through the numerous students who came to see me on my return from South Africa. So I started with the introduction of training in handicrafts in the Ashram School. In fact, an extra emphasis was placed on manual training, with the result that the children soon got tired of the manual training and thought that they had been deprived of literary training. There they were wrong, for even the little that they gained was more than children ordinarily get in the orthodox schools. But that set me thinking, and I came to the conclusion that not vocation cum literary training, but literary training through vocational training was the thing. Then vocational training would cease to be a drudgery and literary training would have a new content and new usefulness. The acceptance of office

by the Congress prompted me to place the thought before the nation, and I am glad that it was welcomed in many quarters."

Proceeding he said: "English we decided to taboo, because we knew that most of the time of the children was taken up with memorizing English words and phrases, and even then they could not put in their own language what they had learnt, and could not properly follow what the teacher taught them. On the other hand they forgot their own language by sheer neglect. Education through vocational training seemed to be the only way to avoid both these evils.

"I should make a start on the first day with finding out the calibre of the boys — whether they know any reading and writing, any geography, and then start with trying to add to their equipment through the introduction of the takli.

"Now you might well ask me why I picked up the takli out of many other existing handicrafts. Because takli was one of the first crafts that we found out and which has subsisted through the ages. In the earliest ages all our cloth used to be made of takli yarn. The spinning wheel came later, and the finest counts could not be produced on the spinning wheel, one had to go back to the takli. In devising the takli, man's inventive genius reached a height that had not been reached before. The cunning of the fingers was put to the best

possible use. But as the takli was confined to the artisans who were never educated, it fell into disuse. If we want to revive it today in all its glory, if we are to revive and reconstruct the village life, we must begin the education of children with the takli. My next lesson would therefore be to teach the boys the place the takli used to occupy in our daily life. Next I would take them into a little history and teach them how it declined. Then would follow a brief course in Indian history, starting from the East India Company, or even earlier from the Muslim period, giving them a detailed account of the exploitation that was the stock-in-trade of the East India Company, how by a systematic process our main handicraft was strangled and ultimately killed. Next would follow a brief course in mechanics — construction of the takli. It must have originally consisted of a small ball of clay or even wet flour dried on to a bamboo splinter running through its centre. This has still survived in some parts of Bihar and Bengal. Then a brick disc took the place of the clay ball and then in our times iron, steel and brass have taken the place of the brick disc and a steel wire the place of the splinter. Even here, one might expatiate with profit on the size of the disc, and the wire, why it is of a particular size and why not more or less. Next would follow a few lectures on cotton, its habitat, its varieties, the countries and the provinces of

India where it is at present grown and so on. Again some knowledge about its cultivation, the soil best suited for it, and so on. That would make us launch into a little agriculture.

"You will see that this takes a fund of assimilated knowledge on the part of the teacher before he can impart it to his pupils. The whole of elementary arithmetic can be taught through the counting of yards of spinning, finding out the count of the yarn, making up of hanks, getting it ready for the weaver, the number of cross threads in the warp to be put for particular textures of cloth and so on. Every process from the growing of cotton to the manufacture of the finished product — cotton picking, ginning, carding, spinning, sizing, weaving — all would have their mechanics and history and mathematics correlated to them.

"The principal idea is to impart the whole education of the body and the mind and the soul through the handicraft that is taught to the children. You have to draw out all that is in the child through teaching all the processes of the handicraft, and all your lessons in history, geography, arithmetic will be correlated to the craft.

"If such education is given, the direct result will be that it will be self-supporting. But the test of success is not its self-supporting character, but that the whole man has been drawn out through the teaching of the handicraft in a

scientific manner. In fact I would reject a teacher who would promise to make it self-supporting under any circumstances. The self-supporting part will be the logical corollary of the fact that the pupil has learnt the use of every one of his faculties. If a boy who works at a handicraft for three hours a day will surely earn his keep, how much more a boy who adds to the work a development of his mind and soul!"

Harijan, 11-6-'38

XVI

HIGHER EDUCATION

The Rt. Hon. Shri Srinivasa Sastri has criticized, as he had a perfect right to do, the views I timidly and very briefly expressed some time ago on higher education. I entertain a very high regard for him as man, patriot and scholar. It is therefore always painful to me when I find myself disagreeing with him. And yet duty compels me to re-express my views on higher education more fully than before, so that the reader may make out for himself the difference between his views and mine.

I admit my limitations. I have no university education worth the name. My high school career was never above the average. I was thankful if I could pass my examinations. Distinction in the school was beyond my aspiration. Nevertheless I do hold very strong views on education in general, including what is called higher education. And I owe it to the country that my views should be clearly known and taken for what they may be worth. I must shed the timidity that has led almost to self-suppression. I must not fear ridicule, and even loss of popularity or prestige. If I hide my belief, I shall never correct errors of judgment. I am

always eager to discover them and more than eager to correct them.

Let me now state my conclusions held for a number of years and enforced wherever I had opportunity of enforcing them :

(1) I am not opposed to education even of the highest type attainable in the world.

(2) The State must pay for it wherever it has definite use for it.

(3) I am opposed to all higher education being paid for from the general revenue.

(4) It is my firm conviction that the vast amount of the so-called education in arts, given in our colleges, is sheer waste and has resulted in unemployment among the educated classes. What is more, it has destroyed the health, both mental and physical, of the boys and girls who have the misfortune to go through the grind in our colleges.

(5) The medium of a foreign language through which higher education has been imparted in India has caused incalculable intellectual and moral injury to the nation. We are too near our own times to judge the enormity of the damage done. And we who have received such education have to be both victims and judges—an almost impossible feat.

I must now give my reason for the conclusions set forth above. This I can best do, perhaps, by giving a chapter from my own experience.

Up to the age of twelve all the knowledge I gained was through Gujarati, my mother-tongue. I knew then something of arithmetic, history and geography. Then I entered a high school. For the first three years the mother-tongue was still the medium. But the schoolmaster's business was to drive English into the pupil's head. Therefore more than half of our time was given to learning English and mastering its arbitrary spelling and pronunciation. It was a painful discovery to have to learn a language that was not pronounced as it was written. It was a strange experience to have to learn the spelling by heart. But that is by the way, and irrelevant to my argument. However, for the first three years, it was comparatively plain sailing.

The pillory began with the fourth year. Everything had to be learnt through English — geometry, algebra, chemistry, astronomy, history, geography. The tyranny of English was so great that even Sanskrit or Persian had to be learnt through English, not through the mother-tongue. If any boy spoke in the class in Gujarati which he understood, he was punished. It did not matter to the teacher if a boy spoke bad English which he could neither pronounce correctly nor understand fully. Why should the teacher worry? His own English was by no means without blemish. It could not be otherwise. English was as much a foreign language to him

as to his pupils. The result was chaos. We the boys had to learn many things by heart, though we could not understand them fully and often not at all. My head used to reel as the teacher was struggling to make his exposition on geometry understood by us. I could make neither head nor tail of geometry till we reached the 13th theorem of the first book of Euclid. And let me confess to the reader that in spite of all my love for the mother-tongue, I do not to this day know the Gujarati equivalents of the technical terms of geometry, algebra and the like. I know now that what I took four years to learn of arithmetic, geometry, algebra, chemistry and astronomy, I should have learnt easily in one year, if I had to learn them not through English but Gujarati. My grasp of the subjects would have been easier and clearer. My Gujarati vocabulary would have been richer. I would have made use of such knowledge in my own home. This English medium created an impassable barrier between me and the members of my family, who had not gone through English schools. My father knew nothing of what I was doing. I could not, even if I had wished it, interest my father in what I was learning. For though he had ample intelligence, he knew not a word of English. I was fast becoming a stranger in my own home. I certainly became a superior person. Even my dress began to undergo imperceptible changes. What happened

to me was not an uncommon experience. It was common to the majority.

The first three years in the High School made little addition to my stock of general knowledge. They were a preparation for fitting the boys for teaching them everything through English. High Schools were schools for cultural conquest by the English. The knowledge gained by the three hundred boys of my High School became a circumscribed possession. It was not for transmission to the masses.

A word about literature. We had to learn several books of English prose and English poetry. No doubt all this was nice. But that knowledge has been of no use to me in serving or bringing me in touch with the masses. I am unable to say that if I had not learnt what I did of English prose and poetry, I should have missed a rare treasure. If I had, instead, passed those precious seven years in mastering Gujarati and had learnt mathematics, sciences, Sanskrit and other subjects through Gujarati, I could easily have shared the knowledge so gained with my neighbours. I would have enriched Gujarati, and who can say that I would not have, with my habit of application and my inordinate love for the country and the mother-tongue, made a richer and greater contribution to the service of the masses ?

I must not be understood to decry English or its noble literature. The columns of HARIJAN

are sufficient evidence of my love of English. But the nobility of its literature cannot avail the Indian nation any more than the temperate climate or the scenery of England can avail her. India has to flourish in her own climate and scenery, and her own literature, even though all the three may be inferior to the English climate, scenery and literature. We and our children must build on our own heritage. If we borrow another, we impoverish our own. We can never grow on foreign victuals. I want the nation to have the treasures contained in that language, and for that matter the other languages of the world, through its own vernaculars. I do not need to learn Bengali in order to know the beauties of Rabindranath's matchless productions. I get them through good translations. Gujarati boys and girls do not need to learn Russian to appreciate Tolstoy's short stories. They learn them through good translations. It is the boast of Englishmen that the best of the world's literary output is in the hands of that nation in simple English, inside of a week of its publication. Why need I learn English to get at the best of what Shakespeare and Milton thought and wrote?

It would be good economy to set apart a class of students whose business would be to learn the best of what is to be learnt in the different languages of the world and give the translation in the vernaculars. Our masters

chose the wrong way for us, and habit has made the wrong appear as right.

I find daily proof of the increasing and continuing wrong being done to the millions by our false de-Indianizing education. Those graduates who are my valued associates themselves flounder when they have to give expression to their innermost thoughts. They are strangers in their own homes. Their vocabulary in the mother-tongue is so limited that they cannot always finish their speech without having recourse to English words and even sentences. Nor can they exist without English books. They often write to one another in English. I cite the case of my companions to show how deep the evil has gone. For we have made a conscious effort to mend ourselves.

It has been argued that the wastage that occurs in our colleges need not worry us if, out of the collegians, one Jagadish Bose can be produced. I should freely subscribe to the argument, if the wastage was unavoidable. I hope I have shown that it was and is even now avoidable. Moreover, the creation of a Bose does not help the argument. For Bose was not a product of the present education. He rose in spite of the terrible handicaps under which he had to labour. And his knowledge became almost intransmissible to the masses. We seem to have come to think that no one can hope to be like a Bose unless he knows

English. I cannot conceive a grosser superstition than this. No Japanese feels so helpless as we seem to do.

Nothing but a heroic remedy can deal with the deep-seated evil which I have endeavoured to describe. The Congress Ministers can, if they will, mitigate it, if they cannot remove it.

Universities must be made self-supporting. The State should simply educate those whose services it would need. For all other branches of learning it should encourage private effort. The medium of instruction should be altered at once and at any cost, the provincial languages being given their rightful place. I would prefer temporary chaos in higher education to the criminal waste that is daily accumulating.

In order to enhance the status and the market value of the provincial languages, I would have the language of the law courts to be the language of the province where the court is situated. The proceedings of the Provincial Legislatures must be in the language, or even the languages of the province, where a province has more than one language within its borders. I suggest to the legislators that they could, by enough application, inside of a month, understand the languages of their provinces. There is nothing to prevent a Tamilian from easily learning the simple grammar and a few hundred words of Telugu, Malayalam and Kanarese, all

allied to Tamil. At the centre Hindustani must rule supreme.

In my opinion this is not a question to be decided by academicians. They cannot decide through what language the boys and girls of a place are to be educated. That question is already decided for them in every free country. Nor can they decide the subjects to be taught. That depends upon the wants of the country to which they belong. Theirs is the privilege of enforcing the nation's will in the best manner possible. When this country becomes really free, the question of medium will be settled only one way. The academicians will frame the syllabus and prepare text-books accordingly. And the products of the education of a free India will answer the requirements of the country as today they answer those of the foreign ruler. So long as we the educated classes play with this question, I very much fear we shall not produce the free and healthy India of our dream. We have to grow by strenuous effort out of our bondage, whether it is educational, economical, social or political. The effort itself is three-fourths of the battle.

Thus I claim that I am not an enemy of higher education. But I am an enemy of higher education as it is given in this country. Under my scheme there will be more and better libraries, more and better laboratories, more and better research institutes. Under it we should

have an army of chemists, engineers and other experts who would be real servants of the nation, and answer the varied and growing requirements of a people who are becoming increasingly conscious of their rights and wants. And all these experts will speak, not a foreign language, but the language of the people. The knowledge gained by them will be the common property of the people. There will be truly original work instead of mere imitation. And the cost will be evenly and justly distributed.

Harijan, 9-7-'38 M. K. GANDHI

XVII

SOME OBJECTIONS

A Muslim correspondent writes :

" During the last four months opinions have been appearing in the Urdu press regarding the Wardha scheme. As usual nobody seems to have read the report carefully or to have thought out the subject of basic education. The objections centre round three points :

(a) that religious instruction has been completely ignored;

(b) that boys and girls are to be taught together; and

(c) that a respect for all religions is to be inculcated.

These objections have been culled from the Urdu press."

Religious instruction in the sense of denominational religion has been deliberately omitted. Unless there is a State religion it is very difficult, if not impossible, to provide religious instruction as it would mean providing for every denomination. Such instruction is best given at home. The State should allow enough time for every child to receive such instruction at home or otherwise. It is also conceivable that the

State should provide facilities for private tuition by those denominations which may wish to instruct their children at school provided that such instruction is paid for by such denominations.

As for co-education, the Zakir Husain Committee has not made it compulsory. Where there is a demand for a separate school for girls, the State will have to make provision. The question of co-education has been left open. It will regulate itself according to the time-spirit. So far as I am aware the members of the Committee were not all of one mind. Personally I have an open mind. I think that there are just as valid reasons for as against co-education. And I would not oppose the experiment wherever it is made.

As to the necessity of teaching equal regard for all religions, I personally hold strong views. Till we reach that happy state, I see no prospect of real unity among all the different communities. I regard it as fatal to the growth of a friendly spirit among the children belonging to the different faiths, if they are taught either that their religion is superior to every other or that it is the only true religion. If that exclusive spirit is to pervade the nation, the necessary corollary would be that there should be separate schools for every denomination with freedom to each to decry every other, or that the mention of religion must be entirely prohibited. The

result of such a policy is too dreadful to contemplate. Fundamental principles of ethics are common to all religions. These should certainly be taught to the children and that should be regarded as adequate religious instruction so far as the schools under the Wardha scheme are concerned.

Harijan, 16-7-'38 M. K. GANDHI

XVIII

A CLARIFICATION

An ex-professor writes a long letter on my article on higher education from which I take the following relevant extracts :

"There is need for further clarification of your views on higher education as they have appeared in the *Harijan* of the 9th inst. I agree with many of your views—especially those regarding the enormity of the damage caused by the foreign medium. I also feel that what passes as higher education to-day contains much brass mistaken for gold. I speak from experience as I was a teacher in the line of the so-called 'higher education' till very recently. It is your third conclusion about general revenue and claims of higher education and its corollary, viz. that universities should be self-supporting, that has left me unconvinced. I believe that every country to be a progressive country must have sufficient facilities for the pursuit of all branches of knowledge — not merely chemistry, medicine and engineering, but every kind of knowledge, literature, philosophy, history, sociology, both abstract and applied. All higher pursuits require

many facilities which cannot be had without State support. A country depending only on voluntary effort for such pursuits is sure to fall behind and suffer. It can never hope to be free and be able to maintain that freedom. The State must be jealously watchful over the position of higher education in ALL fields. Voluntary effort must be there and we must have our Nuffields and Rockfellers. But the State cannot and must not be allowed to remain a silent spectator. It must actively come forward to organize, help and direct. I wish you to clarify this aspect of the question.

You say at the end of your article: 'Under my scheme there will be more and better libraries.' I do not find '*The scheme*' you speak of in your article, nor am I able to make out how 'more and better libraries and laboratories' will come into being thereunder. I am of opinion that such libraries and laboratories must be maintained, and so long as donors and voluntary agencies are not coming forward in sufficient numbers, the State cannot divest itself of this responsibility."

My article is clear enough if the expression "definite use" mentioned in it is given its extensive meaning. I have not pictured a poverty-stricken India containing ignorant

millions. I have pictured to myself an India continually progressing along the lines best suited to her genius. I do not, however, picture it as a third class or even a first class copy of the dying civilization of the West. If my dream is fulfilled, and every one of the seven lacs of villages becomes a well-living republic in which there are no illiterates, in which no one is idle for want of work, in which everyone is usefully occupied and has nourishing food, well-ventilated dwellings, and sufficient khadi for covering the body, and in which all the villagers know and observe the laws of hygiene and sanitation, such a State must have varied and increasing needs, which it must supply unless it would stagnate. I can therefore well imagine the State financing all the education my correspondent mentions and much more that I could add. And if the State has such requirements, surely it will have corresponding libraries.

What, however, according to my view the State will not have is an army of B.A.s and M.A.s with their brains sapped with too much cramming and their minds almost paralysed by the impossible attempt to speak and write English like Englishmen. The majority of these have no work, no employment. And when they have the latter, it is usually clerkships at which most of the knowledge gained during their twelve years of high schools and colleges is of no use whatsoever to them.

University training becomes self-supporting when it is utilized by the State. It is criminal to pay for a training which benefits neither the nation nor the individual. In my opinion there is no such thing as individual benefit which cannot be proved to be also national benefit. And since most of my critics seem to be agreed that the existing higher education, and for that matter both primary and secondary, are not connected with realities, it cannot be of benefit to the State. When it is directly based on realities and is wholly given through the mother-tongue, I shall perhaps have nothing to say against it. To be based on realities is to be based on national, i. e. State, requirements. And the State will pay for it. Even when that happy time comes, we shall find that many institutions will be conducted by voluntary contributions. They may or may not benefit the State. Much of what passes for education today in India belongs to that category and would therefore not be paid for from the general revenue, if I had the way.

But the agreement of my critics on the two main points, medium and the 'realities,' cannot lull me to rest. They have criticized and tolerated all these many years the existing system. Now that the opportunity for reform has come, Congressmen ought to become impatient. If the medium is changed at once and not gradually, in an incredibly short time

we shall find text-books and teachers coming into being to supply the want. And if we mean business, in a year's time we shall find that we need never have been party to the tragic waste of the nation's time and energy in trying to learn the essentials of culture through a foreign medium. The condition of success is undoubtedly that provincial languages are introduced at once in government offices and courts, if the Provincial Governments have the power or the influence over the courts. If we believe in the necessity of the reform, we can achieve it in no time.

Harijan, 30-7-1938 M. K. GANDHI

XIX

A DETAILED STUDY

The aspect of the Wardha Scheme which has given rise to the greatest amount of criticism and scepticism has been its so-called "self-supporting aspect", or in other words its "productive aspect". So far, the arguments both for and against the economic possibilities of a scheme of education centreing round a handicraft were mainly hypothetical as we had no scientifically recorded evidence which could help us to arrive at definite conclusions.

About the middle of July an experiment was started in the practising school of the Vidya Mandir Training School at Wardha, to teach children in the first two grades through the basic handicraft of spinning on the takli. Careful and accurate records which can now be used for further discussion or research work have been kept, both for individual and group work.

It is necessary to point out in the first place that the experiment is being conducted under no specially favoured conditions. The pupils are children taken over from the municipal schools, mostly from the urban middle and lower middle classes, who have not been brought up in an atmosphere or tradition of craft work. The

teachers are neither expert craftsmen nor specially trained for this new educational experiment. They are from the old staff of the practising school and have received only a hasty training in spinning with the takli and in the technique of correlated teaching. In fact, they are learning the technique as they teach the children. Thus the experiment might be accepted as an average specimen.

There is no cut and dried time-table as the teaching depends primarily on the opportunities arising from the craft work, but the programme of work followed generally has been as follows:

Prayers, personal hygiene, spinning on the takli with correlated arithmetic, mother-tongue, dramatization, etc. social studies and group singing, general science, spinning on the takli, gardening and group games.

During this programme of correlated work distributed over 5½ hours, the time devoted to purely craft work was at the beginning only 40 minutes (30 minutes for spinning and 10 minutes for winding and recording). This period was gradually increased to 80 minutes, and is being gradually increased with the growth of the children's interest in craft work. But the maximum period of time devoted to craft work has been 2 periods of 40 minutes each. The total number of hours devoted to spinning by each boy was on an average 12 hours in July, 15 hours in August, and 23 hours in September.

As we are concerned here mainly with the productive and not the academic aspect of this educational experiment, we shall not dwell upon the effect of this system of education on the general attainment of the children. We give below the figures relating to the production and efficiency of 30 children, between the ages of seven and eight, the age selected by the Zakir Hussain Committee as the initial age for basic education.

No.	Name of child	Speed (No. of rounds per hour) at the end of the month			Total production					
					July		August		September	
		Jul.	Aug.	Sep.	No of rounds	hours	No. of rounds	hours	No. of rounds	hours
1.	Laxman Krishnarao	20	40	24	317	16	203	5	120	4
2.	Nilkanth Tukaram	12	21	32	152	12½	384	18	817	28
3.	Bhaurao Devarao	20	41	57	101	5	150	23	1,207	21
4.	Narayan Jauba	16	36	43	70	4½	580	16	1,264	29
5.	Pyarelal	26	41	59	292	10	195	4	1,300	12
6.	Ram Kailash	27	39	70	598	21	664	17	1,134	19
7.	Umashankar	35	45	65	320	9	318	7	1,108	17
8.	Purushottam	19	ab.	38	126	6	ab.	ab.	616	16
9.	Laxman	20	38	55	219	10	704	18	1,909	29
10.	Maurilal	16	40	61	208	12	509	12	955	15
11.	Ganpat Khati	ab.	71	129	ab.	ab.	1,290	18	3,737	29
12.	Satyanarayan	19	20	25	38	2	195	9	200	8
13.	Sitaram	58	69	162	1,147	20	1,150	18	1,650	14½
14.	Pawal	65	83	84	734	13½	1,271	19½	1,024	12½
15.	Shankarlal	41	66	98	630	17½	961	17	1,325	17
16.	Avadh Prasad	40	53	65	552	18	743	19	1,089	19

No.	Name of child	Speed (No. of rounds per hour) at the end of the month			Total production					
					July		August		September	
		Jul.	Aug.	Sep.	No. of rounds	hours	No. of rounds	hours	No of rounds	hours
17.	Mohan Prasad	28	41	61	509	19	655	18	996	22
18.	Sravan	36	76	95	357	10	861	15	1,702	21
19.	Bhaiya Lal	42	91	135	840	20	1,434	18	3,080	22¼
20.	Gajanan Ganpati	21	37	40	342	19	491	12	1,106	30
21.	Sharat Annasaheb	20	30	29	282	12	694	20	693	30
22.	Ramkrishna Ramachandra	18	39	38	180	10	794	10	1,593	32
23.	Shivaji Motibaba	13	36	48	186	14	431	12	1,326	33
24.	Krishna Nagorao	18	21	55	263	14	394	19	938	15
25.	Vijaya Shankarrao	23	50	65	209	9	924	18	1,292	35
26.	Vasant Dattatraya	11	18	22	123	11	403	25	972	30
27.	Gangadhar Budharao	48	56	74	590	12	895	18	1,915	38
28.	Kishan Narayan	36	50	60	571	19	1,016	18	2,136	39
29.	Vasant Mahadev	24	40	56	239	10	957	17	1,289	32
30.	Sharda Shankarrao	23	37	43	277	12	534	14	1,102	28

The findings of this record condensed are as follows:

	July	August	September
Highest speed of spinning per hour ...	50 Tars=200 ft.	91 Tars=364 ft.	133 Tars=532 ft.
Lowest speed of spinning per hour ...	12 Tars= 48 ft.	20 Tars=80 ft.	24 Tars=96 ft.
Average speed of spinning per hour ...	24 Tars= 96 ft.	44 Tars=176 ft.	64 Tars=256 ft.
Highest count of yarn ...	20 counts	30 counts	32 counts
Lowest count of yarn ...	4 counts	4 counts	5 counts
Average count of yarn ...	9 counts	12 counts	13 counts
Total production per month per class of 30 children	74 latis	160 latis	251 latis

If we compare these figures with the standard laid down in the detailed syllabus prepared by the Zakir Husain Committee, we shall find that both in efficiency and production the attainment of the students at the end of 2½ months exceeded the standard fixed at the end of 6 months.

"The average daily speed for the six months should be three fourths of a lati of ten counts yarn in three hours."* i. e., 40 rounds of ten counts yarn per hour. The average speed according to the recorded work for the last 3 months is 64 rounds of 13 counts yarn per hour.

Next we come to the earning capacity as represented by the production — both as a group and per child. The wages, it must be mentioned, have been calculated according to the present rates of the Maharashtra Charkha Sangh.

	July	August	September
Earnings per class, per month	0 13 0	2 8 3	4 1 0
Average earning capacity per child per month	0 0 5	0 1 1½	0 2 2
Lowest earning capacity per month	0 0 3	0 0 6	0 1 0
Higest earning capacity per month	0 1 8	0 4 1½	0 5 3

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* See Basic National Education (2nd Edition) pp. 95 and 96.

N. B. The average number of hours devoted to spinning (including winding) each month was as follows :

July - 12 hours. August - 15 hours. September-23 hours. These figures tell their own story and do not need any comment.

Harijan, 26-11-'38

A. D.

XX

WARDHA SCHEME UNDER FIRE

THE HINDUSTANI MEDIUM

Seventyfive delegates, sent by the various Provincial Governments and a few Indian States and private and national educational institutions to study the Wardha scheme of education, had completed their three weeks' course at the Teachers Training Centre at Wardha. Before returning to their respective provinces they wanted to meet Gandhiji and have a talk with him. A few of them saw him separately on the 3rd. inst. This was followed by talks with the whole group on the 3rd and 4th inst.

The majority of the delegates understood Hindustani but a few did not. Shrimati Asha Devi (Mrs. Aryanayakam) told Gandhiji that he could give his talk in Hindustani. He, accordingly, began in Hindustani, but the blank look on the faces of some of the delegates convinced him that she had been over-optimistic as to their capacity to understand the national language.

Gandhiji was anxious that any cobwebs that might be encumbering their minds with regard to the new experiment they were going to launch, should be effectively removed. He humorously

remarked, "It is a fashion these days to talk of the rights of minorities. Therefore, although those who understand English only are in a hopeless minority, I shall speak today in English. But I warn you that I shall not do so at the next meeting. You must go back with a firm resolve to learn Hindustani. It is impossible to put into practice the idea of basic education — an idea which is calculated to answer the educational requirements of our millions — if the mind works only through the English medium.

CLEARING THE COBWEBS

A number of questions were put to him by the delegates. The first question expressed a doubt as to whether the Wardha scheme was likely to stand the test of time, or if it merely was a measure of temporary expediency. Many prominent educationists were of opinion that sooner or later handicrafts would have to give place to whole-hog industrialization. Would a society educated on the lines of the Wardha scheme and based on justice, truth and non-violence, be able to survive the severe strain of the process of industrialization?

"This is not a practical question," replied Gandhiji. "It does not affect our immediate programme. The issue before us is not as to what is going to happen generations hence, but whether this basic scheme of education answers the real need of the millions that live in our villages. I do not think that India is ever going

to be industrialized to the extent that there will be no villages left. The bulk of India will always consist of villages."

"What will happen to the scheme of basic education if the Congress policy changes as a result of the recent presidential election?" he was asked next.

Gandhiji replied that it was a misplaced fear. A change in the Congress policy was not going to touch the Wardha scheme. "It will affect, if it at all does, higher politics only." He continued. "You have come here to undergo three weeks' training course, so that you may be able to teach your students along the Wardha method on your return. You should have faith that the method will answer the purpose intended.

"Although schemes for industrialization of the country might be put forth, the goal that the Congress has set before it today, is not industrialization of the country. Its goal is, according to a resolution passed by the National Congress at Bombay, revival of village industries. You cannot have mass awakening through any elaborate scheme of industialization that you may put before the kisans. It would not add a farthing to their income. But the A. I. S. A. and the A. I. V. I. A. will put lakhs into their pockets within the course of a year. Whatever happens to the Working Committee or the Ministries, personally I do not sense any danger

to the constructive activities of the Congress. Although started by the Congress, they have been having an autonomous existence for a long time, and have fully proved their worth. Basic education is an offshoot of these. Education Ministers may change but this will remain. Therefore, those interested in basic education should not worry themselves about Congress politics. The new scheme of education will live or die by its own merits or want of them."

"But these questions do not satisfy me," he remarked. "They are not directly connected with the scheme of basic education. They do not take us any further. I would like you to ask me questions directly pertaining to the scheme, so that I may give you my expert advice."

THE CENTRAL IDEA

Before going to the meeting, a friend had asked him if the central idea behind the scheme was that teachers should not speak a word to the pupils that could not be correlated to the takli. Gandhiji answering this question in the general meeting remarked :

"This is a libel on me. It is true I have said that all instruction must be linked with some basic craft. When you are imparting knowledge to a child of seven or ten through the medium of an industry, you should, to begin with, exclude all those subjects which cannot be

linked with the craft. By doing so from day to day you will discover ways and means of linking with the craft many things which you had excluded in the beginning. You will save your own energy and the pupils', if you follow this process of exclusion to begin with. We have today no books to go by, no precedents to guide us. Therefore we have to go slow. The main thing is that the teacher should retain his freshness of mind. If you come across something that you cannot correlate with the craft, do not fret over it and get disheartened. Leave it, and go ahead with the subjects that you can correlate. Maybe another teacher will hit upon the right way and show how it can be correlated. And when you have pooled the experience of many, you will have books to guide you, so that the work of those who follow you will become easier.

"How long, you will ask, are we to go on with this process of exclusion. My reply is, for the whole lifetime. At the end you will find that you have included many things that you had excluded at first, that practically all that was worth including has been included, and whatever you have been obliged to exclude till the end was something very superficial that deserved exclusion. This has been my experience of life. I would not have been able to do many things that I have done, if I had not excluded an equal number.

"Our education has got to be revolutionized. The brain must be educated through the hand. If I were a poet, I could write poetry on the possibilities of the five fingers. Why should you think that the mind is everything and the hands and feet nothing? Those who do not train their hands, who go through the ordinary rut of education, lack 'music' in their life. All their faculties are not trained. Mere book knowledge does not interest the child so as to hold his attention fully. The brain gets weary of mere words, and the child's mind begins to wander. The hand does the things it ought not to do, the eye sees the things it ought not to see, the ear hears the things it ought not to hear, and they do not do, see or hear, respectively, what they ought to. They are not taught to make the right choice and so their education often proves their ruin. An education which does not teach us to discriminate between good and bad, to assimilate the one and eschew the other is a misnomer."

EDUCATING THE MIND THROUGH THE HANDS

Shrimati Asha Devi asked Gandhiji to explain to them how the mind could be trained through the hands.

"The old idea," replied Gandhiji, "was to add a handicraft to the ordinary curriculum of education followed in the schools. That is to say, the craft was to be taken in hand wholly

separately from education. To me that seems a fatal mistake. The teacher must learn the craft and correlate his knowledge to the craft, so that he will impart all that knowledge to his pupils through the medium of the particular craft that he chooses.

"Take the instance of spinning. Unless I know arithmetic I cannot report how many yards of yarn I have produced on the takli, or how many standard rounds it will make; or what is the count of the yarn that I have spun. I must learn figures to be able to do so, and I also must learn addition and subtraction and multiplication and division. In dealing with complicated sums I shall have to use symbols and so I get my algebra. Even here, I would insist on the use of Hindustani letters instead of Roman.

"Take geometry next. What can be better demonstration of a circle than the disc of the takli? I can teach all about the circle in this way, without even mentioning the name of Euclid.

"Again you may ask how can I teach my child geography and history through spinning. Some time ago I came across a book called "Cotton — The Story of Mankind." It thrilled me. It read like a romance. It began with the history of ancient times, how and when cotton was first grown, the stages of its development, the cotton trade between the different countries

and so on. As I mention the different countries to the child, I shall naturally tell him something about the history and geography of these countries. Under whose reign were the different commercial treaties signed during the different periods? Why has cotton to be imported by some countries and cloth by others? Why can every country not grow the cotton it requires? That will lead me into economics and elements of agriculture. I shall teach him to know the different varieties of cotton, in what kind of soil they grow, how to grow them, from where to get them, and so on. Thus takli spinning leads me into the whole history of the East India Company, what brought them here, how they destroyed our spinning industry, how the economic motive that brought them to India led them later to entertain political aspirations, how it became a causative factor in the downfall of the Moghuls and the Marathas, in the establishment of the English Raj, and then again in the awakening of the masses in our times. There is thus no end to the educative possibilities of this new scheme. And how much quicker the child will learn all that, without putting an unnecessary tax on his mind and memory.

"Let me further elaborate the idea. Just as a biologist, in order to become a good biologist, must learn many other sciences besides biology, the basic education, if it is treated as a science, takes us into interminable channels of learning.

To extend the example of the takli, a pupil teacher who rivets his attention not merely on the mechanical process of spinning, which of course he must master, but on the spirit of the thing, will concentrate on the takli and its various aspects. He will ask himself why the takli is made out of a brass disc and has a steel spindle. The original takli had its disc made anyhow. The still more primitive takli consisted of a wooden spindle with a disc of slate or clay. The takli has been developed scientifically, and there is a reason for making the disc out of brass and the spindle out of steel. He must find out that reason. Then, the teacher must ask himself why the disc has that particular diameter, no more and no less. When he has solved these questions satisfactorily and has gone into the mathematics of the thing, your pupil becomes a good engineer. The takli becomes his Kamadhenu—the "Cow of Plenty". There is no limit to the possibilities of knowledge that can be imparted through this medium. It will be limited only by the energy and conviction with which you work. You have been here for three weeks. You will have spent them usefully if it has enabled you to take to this scheme seriously, so that you will say to yourself, 'I shall either do or die'.

"I am elaborating the instance of spinning because I know it. If I were a carpenter, I would teach my child all these things through

carpentry, or through cardboard work if I were a worker in cardboard."

"What we need", he continued, "is educationists with originality, fired with true zeal, who will think out from day to day what they are going to teach their pupils. The teacher cannot get this knowledge through musty volumes. He has to use his own faculties of observation and thinking and impart his knowledge to the children through his lips, with the help of a craft. This means a revolution in the method of teaching, a revolution in the teacher's outlook. Up till now you have been guided by inspectors' reports. You wanted to do what the inspector might like so that you might get more money yet for your institutions or higher salaries for yourselves. But the new teacher will not care for all that. He will say, 'I have done my duty by my pupil if I have made him a better man and in doing so I have used all my resources. That is enough for me.'"

TRAINING TEACHERS THROUGH A CRAFT

Q. In training pupil teachers, would not it be better if they are first taught a craft separately and then given a sound exposition of the method of teaching through the medium of that craft? As it is, they are advised to imagine themselves to be of the age of seven and relearn everything through a craft. In this way it will take them years before they can master

the new technique and become competent teachers.

A. No, it would not take them years. Let us imagine that the teacher when he comes to me has a working knowledge of mathematics, history and other subjects. I teach him to make cardboard boxes or to spin. While he is at it, I show him how he could have derived his knowledge of mathematics, history and geography through the particular craft. He thus learns how to link his knowledge to the craft. It should not take him long to do so. Take another instance. Suppose I go with my boy of seven to a basic school. We both learn spinning and I get all my previous knowledge linked with spinning. To the boy it is all new. For the seventy years old father it is all repetition but he will have his old knowledge in a new setting. He should not take more than a few weeks for the process. Thus, unless the teacher develops the receptivity and eagerness of the child of seven, he will end up by becoming a mere mechanical spinner, which would not fit him for the new method.

Q. A boy who has passed his matriculation can go to college if he wishes to. Will a child who has gone through the basic education syllabus too be able to do so?

A. Between the boy who has passed his matriculation and the boy who has gone through basic education, the latter will give a better

account of himself because his faculties have been developed. He will not feel helpless when he goes to college as matriculates often do.

Q. Seven has been put down as the minimum age for admission of children to a basic education school. Is it to be a chronological or mental age ?

A. Seven should be the average minimum age, but there will be some children of a higher and some of a lower age as well. There is physical as well as mental age to be considered. One child at the age of seven may have attained sufficient physical development to handle a craft. Another one may not be able to do so even at seven. One cannot therefore lay down any hard and fast rules. All the factors have to be taken into consideration.

Gandhiji continued : Many questions show that many of you are filled with doubts. This is the wrong way to go about the work. You should have robust faith. If you have the conviction that I have, that Wardha education is the thing required to give training for life to millions of our children, your work will flourish. If you have not that faith, there is something wrong with those in charge of your training. They should be able to imbue you with this faith, whatever else they may or may not give you.

Q. The basic education scheme is supposed to be for the villages. Is there no way out for the city-dwellers? Are they to go along the old ruts?

A. This is a pertinent question and a good one, but I have answered it already in the columns of Harijan. Sufficient for the day is the good thereof. As it is, we have a big enough morsel to bite. If we can solve the educational problem of seven lakhs of villages, it will be enough for the present. No doubt educationists are thinking of the cities too. But if we take up the question of the cities along with that of the villages, we shall fritter away our energies.

Q. Supposing in a village there were three schools with a different craft in each, the scope for learning may be wider in one than in the other. To which school out of these should the child go?

A. Such overlapping should not occur. For the majority of our villages are too small to have more than one school. But a big village may have more. Here the craft taught in both should be the same. But I should lay down no hard and fast rule. Experience in such matters would be the best guide. The capacity of various crafts to become popular, their ability to draw out the faculties of the student, should be studied. The idea is that whatever craft you choose, it should

draw out the faculties of the child fully and equally. It should be a village craft and it should be useful.

Q. Why should a child waste seven years on learning a craft when his real profession is going to be something else, e. g., why should a banker's son, who is expected to take to banking later on, learn spinning for seven years?

A. The question betrays gross ignorance of the new scheme of education. The boy under the scheme of basic education does not go to school merely to learn a craft. He goes there to receive his primary education, to train his mind through the craft. I claim that the boy who has gone through the new course of primary education for seven years, will make a better banker than the one who has gone through the seven years of ordinary schooling. The latter when he goes to a banking school will be ill at ease because all his faculties will not have been trained. Prejudices die hard. I will have done a good day's work, if I have made you realize this one central fact that the new education scheme is not a little of literary education and a little of craft. It is full education up to the primary stage through the medium of a craft.

Q. Would it not be better to teach more than one craft in every school? The children might begin to feel bored of doing the same thing from month to month and year to year.

A. If I found a teacher who becomes dull to his students after a month's spinning, I should dismiss him. There will be newness in every lesson such as there can be new music on the same instrument. By changing over from one craft to another a child tends to become like a monkey jumping from branch to branch with abode nowhere. But I have shown already in the course of our discussion that teaching spinning in a scientific spirit involves learning many things besides spinning. The child will be taught to make his own takli and his own winder soon. Therefore, to go back to what I began with, if the teacher takes up the craft in a scientific spirit, he will speak to his pupils through many channels, all of which will contribute to the development of all his faculties.

Harijan, Feb. 25 and Mar. 4, 1939

SECTION II

THE ALL INDIA NATIONAL EDUCATION CONFERENCE, WARDHA

(22nd & 23rd October, 1937)

I

QUESTIONS BEFORE EDUCATIONAL CONFERENCE

The Marwadi High School, recently renamed Navabharat Vidyalaya, is celebrating its silver jubilee. The management conceived the idea of calling on the occasion a small conference of nationally-minded educationists to discuss the plan of education I have been endeavouring to propound in these columns. The Secretary, Shri Shriman Narayan Agarwal, consulted me as to the desirability of convening such a conference, and asked me to preside, if I approved of the idea. I liked both the suggestions. So the conference will be held at Wardha on October 22nd and 23rd. Only those will attend who are invited thereto. If there are any educationists who would like to attend and who have not received invitations, they may apply to the Secretary, giving their names and addresses, and such particulars as would enable the management to decide whether they can afford to issue the invitation. Provision is being made only for a limited number who are deeply interested in the problem and can make a useful contribution to the discussion. The conference is not intended to be at all spectacular. There will be no

visitors. It will be a purely business meeting. A limited number of press-tickets will be issued. I advise pressmen to elect one or two representatives and share the reporting.

I approach the task in confidence, but in all humility, with an open mind, and with the will to learn and to revise and correct my views, whenever necessary.

The propositions I shall submit to the conference for consideration will be, so far as they occur to me at present, as follows :

1. The present system of education does not meet the requirements of the country in any shape or form. English, having been made the medium of instruction in all the higher branches of learning, has created a permanent bar between the highly educated few and the uneducated many. It has prevented knowledge from percolating to the masses. The excessive importance given to English has cast upon the educated class a burden which has maimed them mentally for life and made them strangers in their own land. Absence of vocational training has made the educated class almost unfit for productive work and harmed them physically. Money spent on primary education is a waste of expenditure inasmuch as what little is taught is soon forgotten and has little or no value in terms of the villages or cities. Such advantage as is gained by the existing system of education

is not gained by the chief taxpayer, his children getting the least.

2. The course of primary education should be extended at least to seven years and should include the general knowledge gained up to the matriculation standard less English and plus a substantial vocation.

3. For the all-round development of boys and girls all training should, so far as possible, be given through a profit-yielding vocation. In other words, vocations should serve a double purpose—to enable the pupil to pay for his tuition through the products of his labour and at the same time to develop the whole man or woman in him or her, through the vocation learnt at school.

Land, buildings and equipment are not intended to be covered by the proceeds of the pupil's labour.

All the processes of cotton, wool and silk, commencing from gathering, cleaning, ginning (in the case of cotton), carding, spinning, dyeing, sizing, warp-making, double twisting, designing, and weaving, embroidery, tailoring, paper-making, cutting, bookbinding, cabinet-making, toy-making, *gur*-making are undoubted occupations that can easily be learnt and handled without much capital outlay.

This primary education should equip boys and girls to earn their bread by the State guaranteeing employment in the vocations learnt

or by buying their manufactures at prices fixed by the State.

4. Higher education should be left to private enterprise and for meeting national requirements whether in the various industries, technical arts, belles-lettres or fine arts.

The State Universities should be purely examining bodies, self-supporting through the fees charged for examinations.

Universities will look after the whole of the field of education and will prepare and approve courses of studies in the various departments of education. No private school should be run without the previous sanction of the respective Universities. University charters should be given liberally to any body of persons of proved worth and integrity, it being always understood that the Universities will not cost the State anything except that it will bear the cost of running a Central Education Department.

The foregoing scheme does not absolve the State from running such seminaries as may be required for supplying State needs.

It is claimed that if the whole scheme is accepted, it will solve the question of the greatest concern to the State — training of its youth, its future-makers.

Harijan, 2-10-'37

M. K. GANDHI

II

A STEP FORWARD

A record of the work of the Educational Conference will be found elsewhere. It marks an important stage in the presentation of my plan to the public and the Congress Ministers. It was a happy augury that so many Ministers attended. The objection and criticism centred round the idea of self-support even in the narrow sense I have mentioned. Therefore, the conference has made the very cautious declaration it has. There is no doubt the conference had to sail on an uncharted sea. There was no complete precedent before it. If the idea is sound, it will work itself out in practice. After all it is for those who have faith in the self-support part to demonstrate it by working schools in accordance with the idea.

There was a remarkable unanimity so far as the question went of imparting full primary education including the secondary course less English, through a vocation. The fact that the whole person in the boys and girls has to be developed through a vocation automatically saves the schools from degenerating into factories. For over and above the required degree of proficiency in the vocation in which they are trained, the

boys and girls will have to show equal proficiency in the other subjects they will be expected to learn.

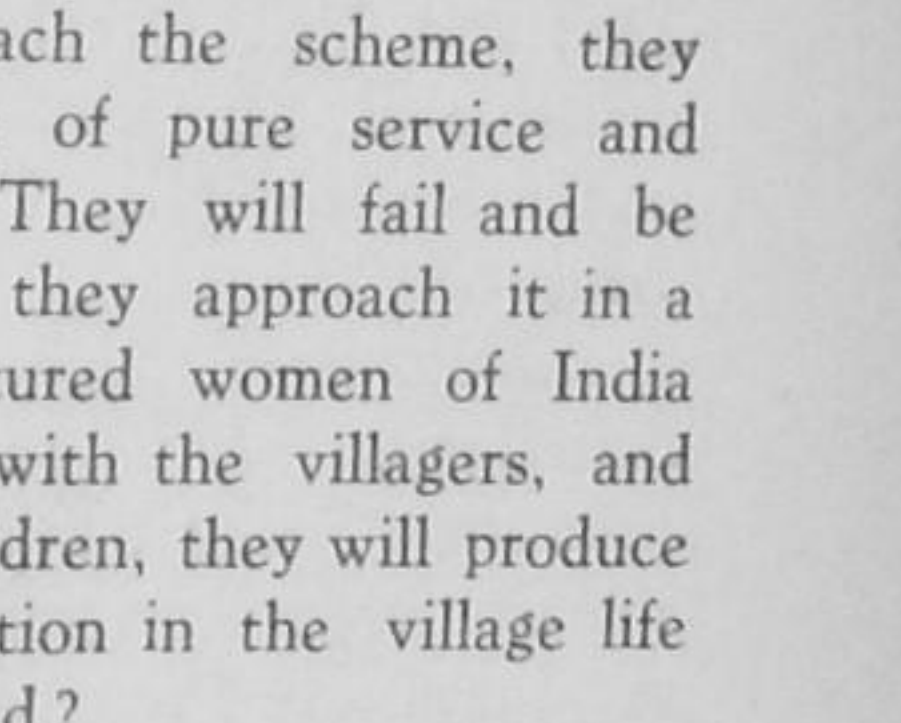
Dr. Zakir Husain's Committee's labour will show how the scheme can be worked is practice and wat exactly the boys and girls will be expected to know from year to year.

Objection has been raised that the conference's resolutions were a foregone conclusion. It has no validity. In the nature of things it was impossible to invite educationists at random to pronounce their views all of a sudden on what to them is undoubtedly a revolutionary plan. The invitations had, therefore, to be restricted to those who as teachers had had at least something to do with vocational training. I had myself no idea that the co-workers in the cause of national education would receive the new idea with sympathy. The wider circle of educationists will undoubtedly be invited to consider the scheme when it comes before the public in a concrete and fuller form, through the Zakir Husain Committee. I would request those educationists who may have helpful suggestions to make, to send them at once to Shri Aryanayakam, the Convener and Secretary of the Committee, at Wardha.

One of the speakers at the conference emphasized the fact that education of little boys and girls could be more effectively handled by women than men and by mothers rather than

maidens. From another standpoint, too, they are in a better position than men to answer Prof. Shah's conscription scheme. Here is undoubtedly an opportunity for patriotic women with leisure to offer their services to a cause which ranks amongst the noblest of all causes. But if they come forward, they will have to go through a sound preliminary training. Needy women in search of a living will serve no useful purpose by thinking of joining the movement as a career. If they approach the scheme, they should do so in a spirit of pure service and make it a life mission. They will fail and be severely disappointed if they approach it in a selfish spirit. If the cultured women of India will make common cause with the villagers, and that too through their children, they will produce a silent and grand revolution in the village life of India. Will they respond?

Harijan, 30-10-'37 M. K. GANDHI



III

ALL INDIA NATIONAL EDUCATION CONFERENCE, WARDHA

PROCEEDINGS

The All India National Education Conference was held at Nava Bharat Vidyalaya, Wardha, on 22nd and 23rd October, 1937, under the presidentship of Mahatma Gandhi, on the occasion of the Silver Jubilee Celebrations of the Marwari Education Society.

Welcoming the delegates of the Conference Seth Jamnalal Bajaj, the President of the Marwari Education Society, said that the idea of holding the Conference originated in some talks of Sjt. Aryanayakam, Principal, Nava Bharat Vidyalaya, and Sjt. Shriman Narayan Agarwal, Secretary, Marwari Education Society, with Mahatma Gandhi, in connection with the Silver Jubilee Celebrations of the Society. In the beginning, the organizers of the Conference wished to invite only a few workers in the field of national education, to discuss the scheme of self-supporting education as adumbrated by Gandhiji. But the number of invitees began to rise considerably, and the organizers then requested Mahatma Gandhi to preside over the deliberations of the Conference. The Marwari Education Society

was fully conscious of the responsibilities which it had undertaken and he hoped that all those interested in the cause of national education would co-operate with the Society in carrying out the important educational scheme.

MAHATMA GANDHI'S INAUGURAL ADDRESS

Mahatma Gandhi gave the following inaugural speech lasting for about 85 minutes :

Brothers and sisters,

I am thankful to you for the trouble you have taken in attending this conference. You know that I have been asked to preside over this conference, but it does not imply that I have to carry on the whole work single-handed. I have had very little responsibility in organizing this conference. Sjt. Shriman Narayanji who is the organizing secretary of the Marwari Education Society has taken great pains in convening it. It was he who first suggested to me the idea of convening a small conference to discuss my educational scheme on the occasion of the Silver Jubilee of the Education Society. I liked the idea and so here I am to place before you frankly all my ideas on national education which I have been adumbrating through the columns of the *Harijan*. I am open to free and frank criticism, so that I may clarify some misunderstandings in connection with my scheme. The proceedings of the conference will be mainly in Hindustani; I think it is quite natural, although

it might be slightly inconvenient to some of you to follow the proceedings in detail.

The ideas that I wish to place before you to-day are new in their method of presentation, at least to me, although my experience behind those ideas is very old. The propositions that I wish to put forward refer to both primary and college education, but we shall have to give special consideration to primary education. I have included secondary in primary education, because primary education is the only education so-called that is available to a very small fraction of the people in our villages many of which I have seen during my peregrinations since 1915. I have seen, perhaps more than anybody else, the conditions of the Indian villages. I gained good experience of the rural life of South Africa as well. I know fully well the type of education that is given in the Indian villages. And now that I have settled down in Segaon I can study the whole problem of national education from closer quarters. I am convinced that if we wish to ameliorate rural conditions we must combine secondary with primary education. The educational scheme, therefore, that we wish to place before the country must be primarily for the villages. I have no experience of college education, though I have come in contact with hundreds of college boys, have had heart to heart chats and correspondence with them, know their needs, their failings and the diseases they suffer

from. But we must restrict ourselves to a consideration of primary education. For, the moment the primary question is solved the secondary one of college education will be easily settled.

I am convinced that the present system of primary education is not only wasteful but positively harmful. Most of the boys are lost to their parents and to the occupation to which they are born. They pick up evil habits, affect urban ways and get a smattering of something which may be anything but education. What then should be the form of primary education? I think the remedy lies in educating them by means of vocational or manual training. I have some experience of them myself, for on the Tolstoy Farm in South Africa I trained my own sons and other children through some manual work e. g., carpentry or shoe-making which I learned from Kallenbach who had his training in a Trappist Monastery. I am confident that my sons and all the other children, lost nothing, though, as the time at my disposal was limited and my preoccupations were numerous, I could not give them an education which satisfied either me or them.

But the scheme that I wish to place before you to-day is not the teaching of some handicrafts side by side with so-called liberal education. I want the whole process of education to be imparted through some handicraft or industry. It may be objected that in the middle ages only handicrafts were taught to the

students; but the occupational training then was far from serving an educational purpose. The crafts were taught only for the sake of the crafts, without any attempt to develop the intellect as well. To-day, traditional craftsmen have either forgotten their crafts, or the technique has been neglected and not improved. Many have taken to clerical careers and are lost to the countryside. As a result, it is now impossible to find an efficient carpenter or smith in an average village. Handicrafts were dying out and since the spinning wheel was being neglected, it was taken to Lancashire where thanks to the English genius it was developed to an extent that is seen to-day. I say this irrespective of my views on industrialism.

The remedy lies in imparting the whole art and science of a craft through practical training and there-through imparting the whole education. While teaching takli-spinning, for instance, we must impart knowledge of the various varieties of cotton, the different soils in different provinces of India, the history of the decay of the handicraft, the political reasons for this, including the history of the British rule in India, a knowledge of arithmetic and so on. I am trying the same experiment on my little grandson who scarcely feels that he is being taught, for all the while he plays and laughs and sings. I am especially mentioning the takli and emphasizing its utility because I have realized its power and

its romance; also because the handicraft of making cloth is the only one which can be taught throughout the country, and because the takli is very cheap. If you have any other suitable handicraft to suggest, please do so without any hesitation so that we may consider it also. However, I am convinced that the takli is the only practical solution of our problem, considering the deplorable economic conditions prevailing in the country. The constructive programme of khadi since 1920 has led to the formation of Congress Ministries in seven provinces, and their success also will depend on the extent to which we continue to carry out this constructive programme.

I have placed the scheme before the ministers: it is for them to accept it or to reject it. But my advice is that primary education should centre round the takli. During the first year everything should be taught through the takli: in the second year other processes also can be taught side by side. It will also be possible to earn quite enough through the takli, because there will be sufficient demand for the cloth produced by the children. Even the parents of the children will be sufficient to consume the products of their children. I have contemplated a seven years' course which, so far as the takli is concerned, would culminate in practical knowledge of weaving, including dyeing, designing etc.

I am very keen on finding the expenses of a teacher through the product of the manual work of his pupils, because I am convinced that there is no other way to carry education to crores of our children. We cannot wait until we have the necessary revenue and until the Viceroy reduces the military expenditure. You should bear in mind that this primary education will include the elementary principles of sanitation, hygiene, nutrition, of doing their own work, helping parents at home etc. The present generation of boys knows no cleanliness, no self-help, and the boys are physically weak. I would therefore give compulsory physical training through musical drill.

I have been accused of being opposed to literary training. Far from it! I simply want to show the way in which it should be given. The self-supporting aspect has also been attacked. It is said that whereas we ought to expend millions on primary education we are going to exploit the children. It is also feared that there will be enormous waste. This fear is falsified by experience. As for exploiting or burdening the children, I would ask whether we burden the child when we save him from a disaster? The takli is a good enough toy to play with. It is no less a toy because it is a productive one. Even to-day children help their parents to a certain extent. The Segaon children know the details of agriculture better than I, for they have

worked with their parents on the fields. Whilst the child will be encouraged to spin and help his parents with agricultural jobs, he will also be made to feel that he belongs not only to his parents but also to the village and to the country, and that he must make some return to them. That is the only way. I would tell the ministers that they will make children helpless by doling out education to them. The children will become self-confident and brave if they pay for their own education by their own labour. This system is to be common to all, Hindus, Muslims, Parsees and Christians. Why do I not lay any stress on religious instruction?—people ask. Because I am teaching them practical religion, the religion of self-help.

The State is bound to find employment if needed, for all the pupils thus trained. As for teachers, Prof. Shah has suggested the method of conscription. He has demostrated its value by citing instances from Italy and other lands.

If Mussolini can impress the youth of Italy for the service of his country, why should not we? Is it fair that the compulsory enlistment of the service of our youth for a year or longer before they begin their career should be labelled as slavery? Youth has contributed much to the success of the movement for freedom during the past seventeen years, and I would now call upon them to give a year of their lives freely to the

service of the nation. If legislation is neccessary in this respect, it will not be compulsion, as it cannot be passed without the consent of the majority of our representatives.

I would, therefore, ask you to say whether this idea of imparting education through manual training appeals to you. The extent to which we can make it self-supporting will be a test of its efficiency. At the end of seven years, the children ought to be able to pay for their instruction and to be earning units.

College education is largely an urban proposition. I would not say that it is an unmitigated failure as primary education certainly is, but the results are fairly disappointing. Why should any one of the graduates have to be unemployed ?

I had proposed the takli as a concrete instance because Vinoba has had the largest amount of practical experience in it, and he is here to answer your objections, if any. Kakasaheb will also be able to tell you something, though his experience is more theoretical than practical. He has especially drawn my attention to Armstrong's *Education for Life*, especially the chapter on " Education of the Hand ". The late Madhusudan Das was a lawyer, but he was convinced that without the use of hands and feet the brain would be atrophied, and even if it worked it would be the home of Satan. Tolstoy taught the same lesson through many of his tales.

Gandhiji concluded by inviting the attention of the audience to the very fundamentals of his plan of self-supporting primary education: " We have communal quarrels — not that they are peculiar to us. England also had its Wars of the Roses, and to-day British imperialism is the enemy of the world. If we want to eliminate communal strife, and international strife, we must start with pure and strong foundations by rearing our younger generation on the education I have adumbrated. That plan springs out of non-violence. I suggested it in connection with the nation's resolve to effect complete prohibition, but I may tell you that even if there was to be no loss of revenue and our exchequer was full, this education would be a *sine qua non* if we did not want to urbanize our boys. We have to make them true representatives of our culture, of our civilization, of the true genius of our nation. We cannot do so unless we give them a course of self-supporting primary education. Europe is no example for us. It plans its programmes in terms of violence because it believes in violence. I would be the last person to minimize the achievement of Russia, but the whole structure is based on force and violence. If India has resolved to eschew violence, this system of education becomes an integral part of the discipline she has to go through. We are told that England spends millions on education. America

also does so; but we forget that all that wealth is obtained through exploitation. They have reduced the art of exploitation to a science, and might well give their boys the costly education they do. We cannot, will not, think in terms of exploitation, and we have no alternative but this plan of education which is based on non-violence."

Dr. Zakir Husain, Principal, Jamia Millia Islamia, Delhi, said :

"Mahatmaji thinks that the scheme which he has placed before you is absolutely original, and that it can be accepted only by those who believe in non-violence, and in rural civilization. But those who are working in the educational field will not find Mahatmaji's scheme very new. They know that true learning can be imparted only through doing. They also know that children have to be taught various subjects through manual work, no matter whether one believes in urban or rural civilization, in violence or non-violence. We teachers know that up to the age of thirteen children want to do and undo, break and mend things. This is how nature educates them. To ask them to sit still in one place with books is to do violence to them. Many educationists have, therefore, been trying to make some manual work the centre of education. In America this method is called the Project Method and in Russia the Complex Method. We can surely impart education to our children through the

takli and the charkha and some other suitable handicrafts.

"But the greatest difficulty in carrying out this scheme will be the scarcity of trained teachers. If we have to teach all the subjects through the takli, we cannot pull on with untrained teachers. I myself am a teacher; but if I am asked to-day to teach all subjects through spinning, I shall have to face great difficulties. Of course, with the help of books which show the way of correlating general education with the various processes of cloth-making, I should be able to teach my students. The preparation of such text-books will require some time and labour.

"There may be some aspects of a subject which cannot be taught through the takli. Shall we leave them out altogether? No. We shall teach through the takli as much of these subjects as possible. The rest we must not leave untouched. We should keep as our principle the development of the intellect through hand-work; but we should not be tied down to it. We should try to find out some other handicrafts through which all other aspects of the various subjects can be taught to our children.

"I wish to say a few words regarding the self-supporting aspect of education. Wherever this experiment has been tried it has not been possible to make education self-supporting. In America Prof. Dewey had a similar plan which

was welcomed enthusiastically, but he had to close down his school after a few years. America is a country where there is no scarcity of funds or state help. If the experiment could not succeed there, what hope of success has it in a poor country like ours?

"You will say that we want self-supporting schools because we are poor. Quite. But I should like to utter a note of warning. The greatest evil of the present system of education is examinations. At present all the teacher's energy is concentrated on examinations. But there is a danger in over-emphasizing the self-supporting aspect of education. Teachers may become slave-drivers and exploit the labour of poor boys. If this happens, the takli will prove even worse than books. We shall be laying the foundations of hidden slavery in our country.

"I know that the Government has not sufficient funds to spread compulsory universal education. If the Government tries to do so it will soon become bankrupt, but this bankruptcy will be preferable to the bankruptcy of national energies. In sponsoring this scheme we should not, therefore, forget this inherent danger."

After the speeches of Prof. Abdul Huq and Shrimati Saudamini Mehta, *Prof. K. T. Shah* delivered the following speech:

"I think it is difficult to have self-supporting education, for even those who render free service have to spend from somewhere. It is wrong to

think that the State should not bear any burden of education. Of course, I believe, that the present expenditure on education can be much reduced and the benefits can be increased. There is a great deal of wastage in primary education, and hardly 20% of the boys reach the final class. It is also found that boys educated in the village schools lapse into illiteracy after some time.

"Dr. Zakir Husain has pointed out that Gandhiji's scheme is not original. This only means that all educationists believe in the efficacy of manual work. But the cost of teaching handicrafts is much greater than the monetary return. We want to educate the largest number of boys possible with the present amount of expenditure. You will all agree with me when I say that the intellectual development of children begins at the age of twelve or thirteen. At that age they can easily assimilate what is taught to them. It is therefore imperative to chalk out a complete scheme of education in which all children should be given the same education up to a certain age and then they should be given scope for individual development.

It is good to emphasize manual work, but we must remember that we are living in the Machine Age. If you lay too much emphasis on hand-work and keep the machines at a distance this will be detrimental to the economic well-being of the country. You might be able to

increase the production of wealth, but the proper distribution of wealth is the real question. I believe in manual labour, but I do not wish to eliminate machines altogether, because they save human energy.

"If you make self-supporting education your ideal the Ministers will naturally take full advantage of the situation and the result will be that instead of the present evil of cramming, the evil of over-work and undue extraction of labour from the students will silently but surely creep in, and the real aim of education will recede into the back-ground. You can imagine the consequences of this evil, if the scheme is launched throughout the country. We have about three-and-a-half crores of children in India. What will happen to the market when all these children produce market able goods? The students will be given free raw material and there will be every facility for the marketing of their goods. This will mean unjust competition with professional artisans. The real solution, therefore, will be to ban all imports from foreign countries and produce all goods in our own country with the help of machines. I think the State should bear the whole burden of education and should also buy the school products. I cannot believe that all the expenses of education should be borne by the students themselves."

After the speeches of the principals of Tilak Vidyalaya, Nagpur and Khamgaon National

School, Dr. Bhagvat suggested that experiments should be started in a few selected villages. *Hon'ble Dr. Syed Mahmud*, Minister of Education, Bihar, who spoke next said :

"The scheme that Gandhiji has placed before us is very original and important. His ideas are fundamentally connected with our culture and civilization. The scheme is based on a particular ideal of citizenship. It may be difficult for us to carry out the scheme under the present circumstances of the country, but if we can successfully launch the scheme it will certainly be a great boon to the country. Educationists maintain that education should begin with the hand and I think the co-ordination of the hand and the intellect is very much needed in our country. I am doubtful whether the whole of the seven years' education can be made self-supporting. The State will have to go in for some expenditure at least. The seven years' course of primary education as outlined by Mahatmaji is quite necessary; but as Dr. Zakir Husain has pointed out, we should provide for some specialized course of two or three years after the primary stage."

In the afternoon Gandhiji opened the session by answering some of the criticisms. He said :

"By means of the scheme which I placed before you this morning we can make our boys self-confident and courageous. Takli spinning will not be the only thing that will be taught during the

seven years. I am of the opinion that in the first year we should teach boys a little carding, even before the takli. Then the boys should be taught to collect cotton in the fields. After this they can be taught spinning, first with the takli and then with the charkha. After spinning, the making of the takli and the charkha should also be taught to the students. They can learn carpentry and smithy as well. Thus, if we plan out the whole course during the seven years, the scheme is bound to succeed.

" Prof. Shah thinks that this scheme will create unequal and unjust competition between professional artisans and school boys . . . To my mind there is no cause for such fear; and if there is any competition it will be first with the mills and then with the Charkha Sangh. I am sure that neither the mills nor the Charkha Sangh are afraid of such competition. You also forget that my scheme is meant specially for the villages. When the ministers create a suitable atmosphere in the country people will like to buy school products even if they have to pay a higher price. Thus there will be no difficulty in marketing the school products. So far as cloth is concerned, I think the State will have to buy all the necessary cloth from the schools even though the price may be higher. For example, although the rates of the printing press in Yerawada jail are higher than those of the other local presses the Government has all its printing done there, and the question

of competition does not arise at all. Our work has to be done in the same way.

" In the beginning there is bound to be some waste in the village schools; but a clever and tactful teacher will see that the boys learn most with least waste. It is true that the articles produced in these schools will not be so cheap as those produced outside, but, as is the case with khadi, there will be no problem of competition. Even in the villages nobody needs to fear any competition with the school articles. Take paper for example. This cottage industry has almost altogether disappeared from the villages. The All-India Village Industries Association is trying to revive it at some places, and people like to buy it even at a higher price. In the same way the public will buy the articles produced by the school children. The same thing will happen in the case of palm-*gur*. As palm-*gur*-making is not prevalent in the country, there will be no problem of competition with the professional *gur*-makers who use sugar-cane as their raw material.

"Then take the question of machinery. I wish that we could dispense with machinery. We should use khadi cloth; and therefore, we do not require cloth-mills. We should try to produce all the necessary cloth in the villages, and we need not be the slaves of machines. I am afraid that by working with the machines we have ourselves become machines and have lost all sense

of art and hand-work. If you still think that we cannot dispense with machines the scheme that I have placed before you will be futile. You wish to keep our villages alive by means of machines and think of imparting education to the village children through them. I am confident that this will be impossible in our country. Machines will only help to make all the 35 crores of people unemployed. If you think that machines are really indispensable you must reject my scheme and suggest a new one. I shall be thankful to you.

"Dr. Zakir Husain has told us of the failure of Prof. Dewey's scheme in America. I think his scheme failed not because it was very expensive but because he could not work it on a large scale. My scheme is absolutely different, because it is a rural one. It is said that my scheme will bring about slavery in the schools. But this can be said about all good things, because in bad hands even good things become bad. Therefore I do not wish that my scheme should be carried out by those who have neither faith nor confidence in it.

"I wish to make one more point clear. I do not want to teach the village children only handicrafts. I want to teach through hand-work all other subjects such as history, geography, arithmetic, science, language, painting and music. All this teaching will have to be done according to a definite plan. Dr. Bhagwat has suggested nine hours daily for school work; but I do not agree

with him because I do not want to be cruel to the children. I want only five hours daily because I am sure the boys will also practise for some time at home what they are taught in the schools. I am confident that if we make calculations for the seven years together we shall find that education can be self-supporting. If in the first year each boy is able to earn two pice a day, in the next year he will be able to earn an anna. In this way their power of production will continue to increase, and they will be able to earn their living in later life.

"It has been suggested that agriculture should be made the medium of instruction in the village schools, but, the shame of it all is that we have not the necessary means. Agriculture as it is taught at present in the schools and colleges is useless for our villages, because it is not intimately related to rural conditions. However, if you accept my scheme and are able to find suitable teachers, I am sure it will be very useful for the village folk. The students will also go with their teachers to the fields and they will learn many subjects while ploughing, sowing, irrigating, and weeding the fields. They will also have sufficient physical exercise, and artificial exercises will therefore be unnecessary.

"I also think that there might be some waste in the first year of my scheme; but it is bound to be self-supporting in the third year. I say this from personal experience. There is no danger

of slavery because there will be no room for it. Of course, if all the teachers and the inspectors are worthless, there is no hope.

"You should not accept anything out of your regard for me. I am near death's door and would not dream of thrusting anything down peoples' throats. The scheme should be accepted only after full and mature consideration so that it may not have to be given up after a little while. I am not very particular about the duration ; it may be seven years or nine years. I agree with Prof. Shah that a State is not worth anything if it cannot provide for its unemployed. But providing doles is not the solution of unemployment. I would provide every one of them with work and give them food, if not money. God did not create us to eat, drink and be merry, but to earn our bread in the sweat of our brow. There should be no dearth of work in our country ; when we have 30 crores of living machines, why should we depend on the dead ones? I say that each of us must work eight hours a day. Nobody becomes a slave by working. Just as we do not become slaves of our parents at home when we carry out their instructions, so the question of slavery should not arise at all in our proposed schools. But if you insist on machines, I feel quite helpless, because I have no other scheme to suggest."

Acharya Vinoba, Head of the Nalwadi Ashram at Wardha said :

"The proposition that primary education should be free and self-supporting seemed to me self-evident the moment I read it. It may not be a new thing, but it has been presented in a new light. I am sure that all the ills of the world have sprung up because man has given up manual work and the revolucionary proposal of Gandhiji will cancel the ills at a stroke. But it is no use to give one's verbal assent to the proposition that manual training is necessary. What Gandhiji means is that manual training and education are one and inseparable. Goody-goody talk of manual training is not going to be of much avail whilst man continues to plan schemes for abolishing manual work. The Westerners may have accepted manual training as a part of their curricula, but they are exploiting nations, and for them manual training does not mean freedom from exploitation. When I went to the villages I found what self-supporting education meant. In Japan children of poor agriculturists are exempted from compulsory education. In India we shall have to exempt all children, which only means that all these children should be rendered earning units, if they and their parents are to live. One may or may not call the institutions schools, but they are a crying necessity.

"I have an industrial home at Nalwadi where boys come from a distance of four or five miles to do their eight hours' spinning between

seven and eleven and one and five. They have to leave home early in the morning and their mothers have to get up very early to give them their mid-day meal. When I examine the life they lead, I find much to learn. Legislation making education compulsory will not solve the problem. The problem will be solved only when we enable the children to add substantially to the income of the home at the end of their seven years of schooling. The whole school atmosphere has to be revolutionized—the children's books, their posture, their way of walking and talking, and so on. Most schools are nothing but dusty and dirty floors. It is absurd to suggest that the school-masters will be slave-drivers. Far from it! The schools will automatically evoke in the parents an unprecedented interest and they will keep a vigilant watch over them. The State, of course, will have to produce ideal teachers and necessary text-books."

Sir P. C. Ray said in a short speech:

"I hold up the ideal of Sjt. Satis Babu before all. He has made himself a pauper and become a tanner and scavenger and sweeper rolled into one. The world's biggest men such as Hitler, Mussolini and Stalin have risen from low estate; they were all workmen. In England all the Labour Ministers in the first Labour Ministry had worked in coal mines."

Then *Acharya Kakasaheb Kalelkar* spoke as follows:

"I have taken an active interest in national education since 1907. Originally I used to think that the aim of national education was to create revolutionaries. Later I found that it was impossible to have such revolutionaries unless there was a strong wave of patriotism throughout the country. Therefore, I then thought, that the aim of education was to create patriots. My experience taught me that true patriotism could not be created without the study of national culture. Thus, the idea of national education became wider and deeper.

"The problem of unemployment has taught us the futility of literary education. Although public opinion was growing in favour of manual training we did not much appreciate it, for we imagined that those who were learning manual work had no culture or patriotism. Later on we found that the so-called liberal education did not develop clear and logical thinking. Experience has taught us now that in order to develop the whole personality of the students education through manual work is essential. So far we have used the tongue and the ear for the evolution of the mind and the heart. Eyes also have been used more for cramming than for observation. But now we should realize that the true development of the mind and the heart can be achieved only through manual labour.

"When my teacher friends tell me that we should impart both intellectual and vocational

training to the students, I feel both surprised and hurt. They think that there is no intellectual training in handwork. As a matter of fact, real development of the intellect can be attained in a natural manner only through manual training. We have all agreed on the importance of vocational training; but its place in the curriculum is still a matter of controversy. I have never believed in mere "vocational bias". It is useless to give some time for "hand-work" in the present curriculum, just for a change. In the Gujarat Vidyapith we gave one hour for manual training to begin with. Later on, we allotted half of the time to manual work and the other half to book-work.

"The present education is not education at all. It benefits neither the pupils nor the teachers. Somebody has truly said, "Never allow your studies to interfere with your education." The same truth is expressed in another educationist's advice: "You must rescue your education from the four walls of the schoolroom." I think true education should get rid of even the term "education" because of its frozen traditional associations. Our new schools, as suggested by Gandhiji, may be called by the sceptic public "child-labour institutions". But before long it will be found that they will become dynamic centres of real and all-round education. So far I have taught only in the towns, but I am convinced that it will be

impossible to emancipate the country unless we impart general education to the village folk. Our real culture and strength lies in the villages and not in the towns.

"It is feared that in making education self-supporting we shall extract undue labour from the boys. I have no such fears, because I know that unless the teachers themselves work they will not be able to make the students work. Moreover, detailed records of work will be kept in the schools and the inspectors will keep a vigilant watch. I may add that if I had to choose between intellectual and labour slavery I would choose the latter.

"Prof. Shah thinks that we can emancipate the country through machines. I am not against small hand-machines like the charkha. Owing to the advent of the Machine Age we are today an exploited nation, because we buy machine-made goods. If we also begin machine manufactures we can become an exploiting nation. But until all the men and the domestic animals in the country are employed we have no right to use machines to snatch away their living. We should view education from the standpoint of non-violence, for I think that education and violence are fundamentally opposed to each other. Originally I was a revolutionary and believed in violence and corporal punishment: but I am now convinced that true education must be given

through non-violence; and this is a central idea in Gandhiji's educational scheme.

"There has been a good deal of controversy about the duration of primary education, *i. e.*, four years or seven years. I think that when education becomes self-supporting the public will not mind keeping the children at school for a longer time. Universal and compulsory primary education should be given from the seventh to the fourteenth year. Infant education from the third to the sixth year can be imparted by the parents at home. The State should, of course, publish useful literature on child education. It is beyond controversy that the medium of instruction should be the mother tongue, and not English. The only difficulty in carrying out Gandhiji's scheme will be that of suitable teacher-craftsmen. We shall have to start training schools for that purpose. I suggest that women should be given preference over men as primary teachers."

Shrimati Ashadevi, Wardha, said that we have to give up all the "idols" of the cave and the market place and bring a fresh outlook to bear on the question, remembering that we are going to create a new age — to bring a new social order into being, and so we have to unlearn all we have learnt and go back to the old educational ideal of the gurukula, which was based entirely on manual training.

Hon'ble Pandit Ravishankar Shukla, Minister of Education, C. P., said: " I wish to study Gandhiji's educational scheme from the standpoint of the prevailing economic conditions of the country. I might tell you that 80% of the agriculturists in C. P. have less than ten acres of land, and an examination of the accounts kept at the Government Agricultural Farm shows that it is impossible to secure a livelihood out of a holding of less than twentyfive acres. This shows that a supplementary occupation is a *sine qua non* for the bulk of our agriculturists. I have in my province high schools where handicrafts are being taught; but we have never tried to make them self-supporting. For the present an annual subsidy of 40 rupees is needed for each school. Mahatmaji thinks that the schools can become self-supporting through handicrafts. In my own Vidya Mandir Scheme, which I shall place before you to-morrow, I have provided for some land to be attached to every village school. So far, no experiments, in this direction have been made. I shall be only too glad to try the experiment suggested by Gandhiji in my province. I wish the first school of this kind to be started in Segaon, under the guidance of Mahatmaji. As the experiment succeeds and as we gather more experience, it will be possible to start schools of this kind throughout the province."

The meeting came to a close at 5 p. m. and at 8 p. m. the delegates again met to frame

resolutions in the light of the day's discussions on Gandhiji's proposition. Dr. Zakir Husain was in the chair. After a free and full discussion the following resolutions were drafted for submission to the open session on the following day.

1. That in the opinion of this Conference free and compulsory education be provided for seven years on a nation-wide scale.

2. That the medium of instruction be the mother-tongue.

3. That the Conference endorses the proposal made by Mahatma Gandhi that the process of education throughout this period should centre round some form of manual and productive work, and that all the other abilities to be developed or training to be given should, as far as possible, be integrally related to the central handicraft chosen with due regard to the environment of the child.

4. That the Conference accepts that this system of education will be gradually able to cover the remuneration of the teachers.

The Conference met again at 8 a. m. on the 23rd when Dr. Zakir Husain placed the draft resolutions before the Conference. Mahatma Gandhi read them aloud and said: "I am glad to know that almost all of you participated in last night's sitting. I know that the draft resolutions have been passed unanimously; still some differences of opinion are bound to remain. I would earnestly request anyone who does not

agree with my proposal to tell me so frankly. I do not want to impose my opinions on anybody. We have to sit together and thrash out some concrete scheme for national well-being in this hour of great need. I know that Prof. Shah has his doubts about my proposal. It is quite natural, since he belongs to a different school of thought. I should like to hear his criticism first."

Prof. K. T. Shah: "I like two points in Gandhiji's scheme: first, that the medium of instruction should be the mother-tongue, and secondly that education should be given through some form of hand-work. Manual training not only develops the intellect and trains the nervous system of the body but also creates self-confidence. However, the idea of making education self-supporting by marketing the products of the school children is undesirable because this will be service and not education. I know that our country is economically very poor and we require more money to ameliorate its present condition. But we should not try to find money in this way. It is the primary duty of the State to give free and compulsory education to all children. The money that the State spends on education should be regarded as a kind of national investment which repays itself in the form of able and efficient citizens. By trying to make education self-supporting from the very beginning you will create in the boys

a feeling of exchange-motive which is by no means desirable. I am sure that if from the age of seven the students are involved in this economic muddle, a kind of slavery will creep in.

"It has been proposed to impart education through one handicraft. You cannot expect every student to take interest in the same handicraft. You will therefore have to provide for different crafts in the same school. This will mean a huge expenditure and the question of self-supporting education will have to be given up. Mahatmaji's scheme is absolutely new for the country. I would therefore suggest that in the first place only a few experimental schools should be started. If the scheme proves successful the country will have no hesitation in accepting it wholesale. Before completing my observations, I should like to repeat that this scheme will hit the professional artisans hard by creating ruinous competition."

After the speeches of Acharya Deo Sharma, Maulavi Mohamed Hussain, and Shri T. S. Avinaslingam, M. L. A., (Central), *Prof. N. R. Malkani*, Delhi, spoke as follows:

"I think Prof. Shah's fears with regard to the dangers of self-supporting education are exaggerated. We are over-emphasizing the production by students of marketable commodities which will involve competition with the ordinary craftsman. In my opinion, rendering of service is

more important than production for a market. Each school should be a self-sufficient unit and should make cloth, shoes, soap, furniture, etc., for its pupils. Boys may be allowed to bring their own raw materials to school and to make finished articles for relatives. School parties should help in rural reconstruction—'in sinking wells, digging pits, making roads, etc. All this service should be, and can be, valued and credited to the boys' work account without being charged in a market.

"I think the real difficulty will arise later when the boys take up a vocation to earn their livelihood. Unless the agriculturists' lot is improved the revival of handicrafts will be hampered by the want of a market. I also suggest that in order to give a fair chance to Mahatmaji's scheme, training centres should be opened to prepare a new class of artisan-teachers, and committees should be appointed to prepare suitable text-books."

Hon. Mr. B. G. Kher, Premier, Bombay Presidency, said:

"It has been said that Gandhiji's scheme is not new; but I regard it as epoch-making, because it introduces non-violence in the field of education. I have learnt four things here; first, that education should be imparted through some handicraft; secondly, that education should be self-supporting; thirdly, that education should be universal; and fourthly, that the State

should guarantee employment to all the educated boys. I think all these principles are revolutionary.

"There is a village in my province where some people from the north are doing tannery work. I have been working there for about four years. The workers there have succeeded in creating a new artisan class, who are daily losing their prejudices and gaining a consciousness of their Indian citizenship. I have received several letters from managers of institutions near Poona and Satara, Dhond and Ankleshwar, where the experiment is being tried with very encouraging results. When I became the Education Minister, people suggested that I should introduce compulsory primary education throughout the province. We required about three crores of rupees for the purpose. I did not want to launch the scheme until I had fully investigated the details. In the meanwhile I read about Gandhiji's scheme which is so hopeful for the country. Gandhiji's scheme requires teachers imbued with feeling of national service. I am sure that if we are able to find such teachers the scheme will succeed, and education can be made self-supporting even within a year. Mahatmaji has clearly told us that a teacher who cannot make his students self-supporting within seven years is worthless. I fear he may add that those ministers who cannot launch the scheme are useless. I therefore wish to listen to

and understand the whole scheme before openly giving my assent to it. Several experiments in this direction are being tried in my province, and the results make me feel very hopeful about Gandhiji's revolutionary and epoch-making proposals. As Pandit Ravishankar Shukla has pointed out, we shall have to start a few experimental schools in each province before introducing the scheme wholesale."

Hon. Pt. Pyarelal Sharma, Education Minister, U. P., made the following speech:

"Mahatmaji has been emphasizing the need of primary education in the country. Some people feel that he should give a constructive and uniform scheme for higher education also. But it is better to solve our problems one by one.

"In my province only 6% of the people are literate. According to the new scheme education will be given through hand-work. The result will be that we shall no longer have the distressing problem of unemployed B. A.s and M. A.s, because after completing their education the students will be able to stand on their own feet.

"There are some schools in my province where handicrafts and agriculture are taught exclusively. But they are not under the education department. The schools which are under my jurisdiction are those which create the army of educated unemployed young men. I am convinced

that this problem cannot be solved until the whole educational system is overhauled. But before launching Gandhiji's scheme, I think it is necessary that all the ministers should meet and frame practical proposals for its introduction in the country on a large scale."

Hon. Dr. Subbaroyan, Minister of Education, Madras, made the following observations :

"We should all agree with Mahatmaji that our country's problem may be solved by education through some handicraft. In the past, education has never been related to the occupation in a particular locality. It has produced pupils unable to return to their surroundings on the completion of their education. Every government, therefore, should be willing to try the new scheme for the reorganization of primary education. The question of the self-supporting aspect of the elementary stages is controversial and can be proved only after the experiment has been tried in many schools. As far as I am concerned, we as a government will be willing to try this in a number of schools. The question of the curriculum and the training of teachers for this new system of education should be considered at the earliest possible date and arrangements should be made to train teachers who will understand the question of education through handicraft. The country will be thankful to Mahatmaji even if education

becomes half self-supporting for that will be a solution of the problem."

Hon. Mr. Vishwanath Das, Minister of Education, Orissa, said :

" Education is not worth the name unless it is national and useful. The system of education at present imparted in our schools is neither the one nor the other. It is a system of instruction which kills the creative genius of the boy and the man both in school and in college. From the day I took office I have felt this miserable position and have been thinking of a change. I glorify God for having vouchsafed to us this great chance through Mahatmaji. In Orissa the difficulty is peculiar. The separate province of Orissa has been created from areas from three different provinces. Therefore, to-day we have three different educational codes, syllabuses and courses of study. I must frankly confess that none of these fulfils the conditions essential for the training of children and the creation of a nation. The ideal of education is to bring out the best in man, to create a love for God and man. Education in this country falls far short of this ideal.

" A charge has been levied that the proposed change would revolutionize education. I welcome a revolution in the existing conditions. Mahatmaji, it has been your privilege always to bring about revolutions. The revolutions that you bring about are achieved not with bombs

and pistols but with "Ahimsa" and "Satya". With these weapons you effect an entire change in the nation's mentality and outlook. It has always been the privilege of great souls to effect such changes, which are therefore bound to be revolutionary. Your suggestions are expected to change not only the system of instruction but the very notion and conception of education. You propose to make education in India really useful to men to develop the creative genius of youth. I therefore assure you, on behalf of myself and all the ministers of education from various provinces, that we will give this new conception of education and the system adumbrated under it, the fairest and sincerest trial possible.

"The discussions make it clear that though in the long run education may be made to pay for itself to a considerable extent yet in the initial stages we have to spend a little more money. Nothing will prevent us from finding this initial investment. I know that I had a deficiency in the last budget. Money alone will not solve our difficulty. The education which it is proposed to impart demands new books, a different type of teacher and an altogether different atmosphere. May I, therefore, suggest that you appoint groups of educationists not only to draw up a detailed syllabus but also to write new text books on the lines suggested ? I fear that our present teachers may not be useful

for the changed conditions. Some of them are incorrigible. I do not propose that we should attempt to cure them. A good many of them may usefully be employed, but even this class of teacher will need a course of training to imbibe the changed method and system of instruction. I have always felt that the country would in no way suffer if all the text books available were gathered together and burnt. The vernacular languages have been starved and kept in the background since the days of Macaulay and Raja Ramamohan Roy. Everything should be revived, regenerated and innovated.

"While stating what little I had to say I should be failing in my duty, Mahatmaji, if I did not place before you my difficulties about this scheme. You have stated firstly that education must pay for itself and that it should be imparted to children through the use of their hands. This may be possible to a great extent after the boy reaches his tenth year. True education, it must be admitted, is guided by the needs of the child. I am afraid that if an outturn is expected at this stage education may be sacrificed for a mechanical outturn. Then again we cannot neglect the other difficulty which faces us. The teacher will be told that his subsistence depends on the outturn of the students' work. Human nature being what it is, he will care more for the outturn than for

education. Long hours of work and a rub between the parents and the teacher may be necessary consequences of such a course. I only present the difficulties as suggestions.

"One word more and I shall have done. I have seen your anxiety to have the existing educational system changed. For our part we are equally anxious to give an honest trial to this changed system of education. Need I therefore suggest, Mahatmaji, that you send a deputation of educationists to all the provinces in India to explain this to our educationists. I am anxious to have your system introduced as early as possible. This will make the passage smooth. Again, Mahatmaji, propaganda in favour of this system must be carried on and this could not be done better than by such a deputation to the provinces. For myself I welcome and agree to meet the expenses of a deputation."

Hon. Dr. Syed Mahmud spoke as follows:

"Before coming to this Conference I had outlined a scheme of compulsory primary education through manual training. Now that I have understood Gandhiji's scheme of self-supporting education I feel very hopeful about introducing it successfully in my province. I think the problem of new teachers can be solved, if we persuade the young men who pass matriculation each year to devote one or two years to teaching in primary schools in the villages. I think

their expenses of boarding and lodging can be easily borne by the villagers themselves. The State may pay them a few rupees for out of pocket expenses. Thus primary education can be spread throughout the province with an expenditure of only a few lakhs of rupees.

"I think we should take the help of the radio and the cinema in spreading general education in the villages. Russia has made very successful experiments in this direction, and we should take advantage of this experience.

"One point is not clear to me; what will happen to the present primary and secondary schools, when the new scheme is launched? I hope Mahatmaji will make this issue clear."

Hon. Pt. Ravishankar Shukla, gave the following speech:

"The Education Department of the Central Provinces has started manual training in some schools, but so far we have not been able to correlate general education with handicrafts. We shall have to change our system when introducing Mahatmaji's scheme. We shall have to find teachers for the new schools; and I hope to train such teachers in the Wardha Normal School. Dr. Syed Mahmud thinks that matriculates will be able to teach in the new type of schools. I personally think that it will not be possible for these matriculates to teach all the subjects through handicrafts. They can be utilized for purposes of adult education."

Explaining his "Vidya Mandir" scheme, Pt. Shukla said: "The present position in the Central Provinces and Berar is that the population is 1,55,67,723; the number of villages is 37,762; the number of villages having schools is 4,746; and the number of villages from which boys attend these schools is 9,762. This means that there are 25,254 villages which have no approach to any school. The present expenditure per head comes to Rs. 10/8. At the present rate, the total expenditure in educating all the boys would be Rs. 2,44,24,627. It is impossible to draw even half this amount from the provincial exchequer and other sources. Therefore the adoption of the "Vidya Mandir" scheme is the only way to achieve this end. The scheme contemplates the provision of a "Vidya Mandir" in every village or group of villages within a radius of a mile, where there is no school and where there are adout 40 boys and girls of school-going age. In all Vidya Mandirs, education will be through the medium of the mother-tongue. The name is attractive in more ways than one. To 99% of the village population it will be a source of inspiration, and it is hoped that it will appeal to generous and charitable minds. Vidya Mandirs will be people's schools. They will not be divorced from the environment. They will make the children realize the problems of village life and train them to take an active part in it. The welfare of the village community

will be one of the Vidya Mandir's principal aims, and there will be close co-ordination between the school and the community life. It will be an important social centre where teachers, parents, boys and girls will meet and discuss and solve the problems facing them. In fact a Vidya Mandir will be the source radiating light and learning in a village. Agriculture, hygiene, sanitation and all other things which make for the happiness of life will be taught there. Vidya Mandirs should first be established on a voluntary basis and if necessary it may become a statutory obligation on each village or group of villages to have a Vidya Mandir. The grant of land will be the primary source of income for the support of a Vidya Mandir. Grant of land sufficient in area to give the teacher a living wage of Rs. 15 per month, will be necessary. The income can be augmented from other sources such as village charities, Dharmadao, Panchayati kothis, etc. A limited number of Vidya Mandirs will be started in every tehsil in the first year at Government expense. It is estimated that a Vidya Mandir will require from 11 to 30 acres of land, and the sum of Rs. 1,000 to 2,000 to start the school.

"An important, if not the most important, item in the Vidya Mandir scheme is the staff. A Vidya Mandir is generally expected to be a one-teacher-institution, inasmuch as only boys and girls of the village in which it is situated will join it. If the number exceeds 50 and goes

even to 80, the double shift system may be adopted. A teacher in a Vidya Mandir will have to be of a different type. His minimum qualifications will be the present vernacular middle school certificate, but the higher the qualifications, the better. He will be on probation for five years after which he will have to serve for twenty years more. Ordinarily there will be no transfer from one Vidya Mandir to another. It will be a life-long work for twenty-five years. After confirmation the teacher's life will be insured for about Rs. 500. The teacher will reside in the Vidya Mandir, and will be *ex-officio* secretary of a Vidya Mandir trust. He will do such social service, village up-lift work, etc., as may be entrusted to him. Subjects of study will be related to the environment of the children and will have an industrial and agricultural bias.

"I am not proposing the Vidya Mandir scheme in place of Mahatmaji's scheme. My scheme is only to prepare the ground for the inauguration of the scheme as outlined by Gandhiji."

Sjt. Mahadev Desai said:

"The idea of self-supporting education cannot be divorced from the ideological background of non-violence, and unless we bear in mind that the new scheme is intended to bring into being a new age from which class and communal hatred is eliminated and exploitation

is eschewed, we cannot make a success of it. We should therefore approach the task with firm faith in non-violence and in the belief that the new scheme is evolved by a mind that has conceived non-violence as the panacea for all evils. Those who talk of the machine age do not know of the dangers ahead of us, and labour under the illusion that socialization tacked on to industrialization is the solution of all evils. But I may tell you that socialization cannot eradicate the inherent evils of industrialization, and it is necessary that socialization should be tacked on to a handicraft civilization and not to a factory civilization. I do not fear competition between the artisan and the student producer.

"A minister who cannot dispose of the products in the school without avoiding a clash with professional artisans will have to declare bankruptcy, and I say that Prof. Shah betrays a woeful ignorance of the countryside, of the many production centres in villages, and of the artisan class in general. If he leaves his study-room and sees these people, he will find them blessing Gandhiji's proposal, which will clothe them with a status that they have not previously enjoyed. In Russia a bridge has been built between theory and practice, artisan and student, industry and letters. Our effort is of a similar kind, though based on a different ideology. The one necessity is faith in the ideology and

determination to face the task and stamp out the existing evil."

Replying to some points raised by Sjt. Mahadev Desai, Dr. Zakir Husain said :

" Mahadevbhai has said that without faith it will not be possible to make the scheme a success. He thinks that I have no faith in the scheme. I may say that I agree with Mahatmaji's proposal and am hopeful of its success. But this does not mean that I should not point out any shortcomings of the scheme.

"Some of my friends have resented my statement that Gandhiji's proposals are not original. I do not mean any insult. Mahadevbhai himself has quoted from a book to show that this kind of education is being tried in Russia. But the way in which Mahatmaji has placed his present scheme is certainly original."

The resolutions were then put to the vote and were all but unanimously accepted, Prof. Shah not accepting the self-supporting part of the resolutions.

In winding up the proceedings of the Conference, Gandhiji said :

" After considering my proposals, a question arises : shall we close down the present primary and secondary schools ? I have no hesitation in making an affirmative answer. But it is for the ministers to decide finally. I think that if the present teachers accept my scheme, there will be no difficulty in overhauling the present schools.

At places where there are no schools at all, we can easily start institutions of the type suggested by me. I will myself try to run schools of this type in Segaon and Wardha.

"I am told that there are some doubts still lurking in your minds regarding my scheme. I want to know them so that I may be able to clear some possible misunderstandings. I think Prof. Shah's fears are groundless because there is no possibility of starting schools of the new type immediately in all the villages, which number about seven lakhs. Before making the scheme compulsory and universal, we shall have to vindicate its truth in some experimental schools. If the scheme fails, no Mahatma will be able to save it. But I have no such fears, because I combine in myself the visionary and the practical man. We should to-day appoint a committee to continue the work and prepare a detailed scheme.

"I wanted to place before you my ideas about college education, but I shall not do so to-day. I may write them later in the *Harijan*. I think we can postpone the question of higher education for some time; but the problem of primary education cannot be postponed even for a minute. We have been criticizing the present form of education for the last 20 years. Now that we have Congress Ministries working in seven provinces, we shall have to tackle the problem with constructive seriousness.

"I am grateful to all of you for having come and co-operated with me. I look forward to further co-operation as the Conference is but the first of the many that will have to follow. Malaviyaji has sent me a warning telegram, but I can put him at ease by saying that there is nothing final about the Conference, as it is a conference of seekers, and every one is invited to offer suggestions and criticisms. I never have the idea of carrying through anything by storm. The idea of national education and prohibition are as old as non-cooperation. But the thing in its present shape came to me under the changed circumstances of the country."

Thereafter a committee composed of the following friends was appointed, to prepare a detailed syllabus on the lines of the resolutions and to submit their report to the Chairman of the Conference within a month:

1. Dr. Zakir Husain, (Chairman).
2. Sjt. Aryanayakam, (Convener).
3. Sjt. Khwaja Gulam Saiyidain.
4. Sjt. Vinoba.
5. Sjt. Kakasaheb Kalelkar.
6. Sjt. Kishorlal Mashruwala.
7. Sjt. J. C. Kumarappa.
8. Sjt. Shrikrishnadas Jaju.
9. Sjt. K. T. Shah.
10. Shrimati Ashadevi,

with power to co-opt more names.

IV

THE EDUCATIONAL CONFERENCE

What ultimately became a momentous session of the Educational Conference was held at Wardha on the 22nd and 23rd of October under the auspices of the Silver Jubilee of the Marwadi Shiksha Mandal. Gandhiji was in a weak state of health, and it was feared that he may not after all be able to stand the strain. The Convener or the Secretary of the Conference, Sjt. Shriman Narayan Agrawal, lay ill with enteric fever. And suggestions were therefore made that the Conference might be postponed until December. But Gandhiji resolutely rejected the suggestion. Sjt. Aryanayakam bore the brunt of the arrangements. Gandhiji conserved his strength by taking long periods of silence, and the Conference did come off with results which, I can say without fear of contradiction, satisfied all. The proceedings were studiedly businesslike, no time being wasted on the election of the President, thanks to the Chair, introductory musical programme, etc. The speeches were almost all in Hindi or Hindustani, with but four exceptions. On the first day the Conference met in the morning from 8-30 a. m. to 11-30 a. m. and 2-30 p. m. to 5 p. m., on the second day from 8 a. m. to 11 a. m. and 2 p. m. to 5 p. m. After the first day's proceedings the Conference converted

itself into a committee to express its opinion on the following propositions* originally formulated by Gandhiji.

The next day the draft resolutions of the Committee were placed before the house and discussed and ultimately passed. Here is the text of the resolutions :

"(1) That in the opinion of this Conference free and compulsory education be provided for seven years on a nation-wide scale.

(2) That the medium of instruction be the mother-tongue.

(3) That the Conference endorses the proposal made by Mahatma Gandhi that the process of education throughout this period should centre around some form of manual and productive work, and that all the other abilities to be developed or training to be given should, as far as possible, be integrally related to the central handicraft chosen with due regard to the environment of the child.

(4) That the Conference expects that this system of education will be gradually able to cover the remuneration of the teachers."

Thereafter a Committee was appointed to prepare a planned syllabus on the lines of the resolutions, to submit their report to the Chairman of the Conference within a month.

Harijan, 30-10-'37 M. D.

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* For these propositions see pp. 108-109 of this book.

PART II

REPORT

OF THE

DR. ZAKIR HUSAIN COMMITTEE

President

DR. ZAKIR HUSAIN

Members

K. Gulam Saiyidain
K. T. Shah
Vinoba Bhave
Kaka Kalelkar
Kishorlal Mashruwala
J. C. Kumarappa
Shrikrishnadas Jaju
Shrimati Asha Devi

Convener

E. W. ARYANAYAKAM

Delhi, 2-12-1937

MAHATMA GANDHI,

President,

All India National Education Conference,

WARDHA.

MAHATMAJI,

I have the honour to submit herewith the report of the Committee appointed by the Wardha Conference on the 23rd of October 1937 to formulate a scheme of basic education on the lines suggested by the resolution of that Conference.

The members of the Committee present at Wardha had a preliminary discussion with you on the 24th October. The Committee met at Wardha on the 2nd and 3rd of November when all the members attended except Professor K. T. Shah who was prevented by urgent work from coming. They met again at Wardha on the 22nd, 23rd and 24th of November. Professor Saiyidain could not come, and Professor K. T. Shah could be present only on the first day of the meeting. You will be pleased to know that the discussions were conducted in the most cordial spirit and every member was anxious to contribute his very best. We recorded no evidence, but the Committee are extremely

grateful to the numerous friends who sent us their views on the problems engaging our attention.

We are fully conscious of the shortcomings of the report we are submitting. Our own limitations as well as the limitations of time did not permit us to do better. We have been able, for instance, to include a detailed syllabus only for the craft of Spinning and Weaving. If time had permitted, we should have very much liked to include a similar scheme for more crafts. For we are anxious to avoid the possible impression that we do not attach equal importance to other crafts with similar or better educational possibilities. When at a later date we submit to you a detailed scheme of correlated grade placements, as desired by you, we hope also to include a detailed scheme of Agriculture and Gardening as the basic craft.

We are thankful to the many Provincial Governments for sending us all the relevant literature, and specially to the Government of the Central Provinces for deputing an officer of the Educational and an officer of the Agricultural Department to help us whenever we needed their help during the course of our deliberations. Sjt. Aryanayakam and Shrimati Asha Devi, though members of the Committee, deserve to be specially thanked for facilitating the work of the Committee by their efficient handling of the voluminous correspondence and

making all necessary arrangements for the meetings we held.

I am personally very grateful to the staff of the Teachers' Training College, Muslim University, Aligarh, for their whole-hearted co-operation and for permitting me to draw freely on their expert knowledge and precious time.

We submit this report to you in the sincere hope that under your guidance the scheme presented in it may prove to be the beginning of a sound educational system in our country.

Respectfully
ZAKIR HUSAIN
Chairman

SECTION 1

BASIC PRINCIPLES

The Existing Educational System—

Indian opinion is practically unanimous in condemning the existing system of education in the country. In the past it has failed to meet the most urgent and pressing needs of national life, and to organize and direct its forces and tendencies into proper channels. To-day, when quick and far-reaching changes are reshaping both national and international life and making new demands on the citizens, it continues to function listlessly and apart from the real currents of life, unable to adapt itself to the changed circumstances. It is neither responsive to the realistic elements of the present situation, nor inspired by any life-giving and creative ideal. It does not train individuals to become useful productive members of society, able to pull their own weight and participate effectively in its work. It has no conception of the new co-operative social order which education must help to bring into existence, to replace the present competitive and inhuman regime based on exploitation and violent force. There is, therefore, a demand from all sides for the replacement of the present system of education by a more constructive and human system,

which will be better integrated with the needs and ideals of national life, and better able to meet its pressing demands.

Any scheme of education designed for Indian children will in some respects radically differ from that adopted in the West. For, unlike the West, in India the nation has adopted non-violence, as the method of peace, for achieving all-round freedom. Our children will therefore need to be taught the superiority of non-violence over violence.

Mahatma Gandhi's Leadership—

In this field, as in so many others, far-sighted leadership has come at this critical juncture from Mahatma Gandhi, who has thrown himself whole-heartedly and devotedly into the question of evolving a system of education which will be in harmony with the genius of the Indian people, and solve the problem of mass education in a practicable way and within as short a time as possible. The basic idea of his scheme, as expounded by him in his articles in HARIJAN and at the Wardha Educational Conference, is that education, if sound in its principles, should be imparted through some craft or productive work, which should provide the nucleus of all the other instruction provided in the school. This craft, if taught efficiently and thoroughly, should enable the school to pay towards the cost of its teaching staff. According

to him, this would also help the State to introduce immediately the scheme of free and compulsory basic education. Failing this, in the existing political and financial condition of the country, the cost of this education would be prohibitive.

Craft Work in Schools—

Modern educational thought is practically unanimous in commending the idea of educating children through some suitable form of productive work. This method is considered to be the most effective approach to the problem of providing an *integral* all-sided education.

Psychologically, it is desirable, because it relieves the child from the tyranny of a purely academic and theoretical instruction against which its active nature is always making a healthy protest. It balances the intellectual and practical elements of experience, and may be made an instrument of educating the body and the mind in co-ordination. The child acquires not the superficial literacy which implies, often without warrant, a capacity to read the printed page, but the far more important capacity of using hand and intelligence for some constructive purpose. This, if we may be permitted to use the expression, is "*the literacy of the whole personality*".

Socially considered, the introduction of such practical productive work in education, to be participated in by all the children of the nation,

will tend to break down the existing barriers of prejudice between manual and intellectual workers, harmful alike for both. It will also cultivate in the only possible way a true sense of the dignity of labour and of human solidarity—an ethical and moral gain of incalculable significance.

Economically considered, carried out intelligently and efficiently, the scheme will increase the productive capacity of our workers and will also enable them to utilize their leisure advantageously.

From the strictly educational point of view, greater concreteness and reality can be given to the knowledge acquired by children by making some significant craft the basis of education. Knowledge will thus become related to life, and its various aspects will be correlated with one another.

Two Necessary Conditions—

In order to secure these advantages it is essential that two conditions should be carefully observed. First, the craft or productive work chosen should be rich in educative possibilities. It should find natural points of correlation with important human activities and interests, and should extend into the whole content of the school curriculum. Later in the report, in making our recommendations on the choice of basic crafts, we have given special attention to this point, and we would urge all who are in any

way concerned with this scheme to bear this important consideration in mind. The object of this new educational scheme is NOT primarily the production of craftsmen able to practise some craft *mechanically*, but rather the exploitation for educative purposes of the resources implicit in craft work. This demands that productive work should not only form a part of the school curriculum—its craft side—but should also inspire the *method* of teaching all other subjects. Stress should be laid on the principles of co-operative activity, planning, accuracy, initiative and individual responsibility in learning. This is what Mahatma Gandhi means when he says: "Every handicraft has to be taught not merely mechanically as is done to-day, but scientifically. That is to say, the child should learn the why and wherefore of every process" —of course through personal observation and experience. By merely adding to the curriculum one other subject—weaving, spinning, or carpentry—while all other subjects are still taught in the traditional way we shall, we are convinced, encourage passive assimilation and the division of knowledge into unintelligible water-tight compartments, and thus defeat the real purpose and spirit of this scheme.

The Ideal of Citizenship Implicit in the Scheme—

We are also anxious that teachers and educationists who undertake this new educational

venture should clearly realize the ideal of citizenship inherent in it. In modern India, citizenship is destined to become increasingly democratic in the social, political, economic and cultural life of the country. The new generation must at least have an opportunity of understanding its own problems and rights and obligations. A completely new system is necessary to secure the minimum of education for the intelligent exercise of the rights and duties of citizens. Secondly, in modern times, the intelligent citizen must be an active member of society, able to repay in the form of some useful service what he owes to it as a member of an organized civilized community. An education which produces drags and parasites — whether rich or poor — stands condemned. It not only impairs the productive capacity and efficiency of society but also engenders a dangerous and immoral mentality. This scheme is designed to produce *workers*, who will look upon all kinds of useful work — including manual labour, even scavenging — as honourable, and who will be both able and willing to stand on their own feet.

Such a close relationship of the work done at school to the work of the community will also enable the children to carry the outlook and attitudes acquired in the school environment into the wider world outside. Thus the new scheme which we are advocating will aim at giving the citizens of the future a keen sense of

personal worth, dignity and efficiency, and will strengthen in them the desire for self-improvement and social service in a co-operative community.

In fine, the scheme envisages the idea of a co-operative community, in which the motive of social service will dominate all the activities of children during the plastic years of childhood and youth. Even during the period of school education, they will feel that they are directly and personally co-operating in the great experiment of national education.

The Self-supporting Basis of the Scheme—

It seems necessary to make a few remarks about the "self-supporting" aspect of the scheme, as this has occasioned considerable misunderstanding. We wish to make it quite clear that we consider the scheme of basic education outlined by the Wardha Conference and here elaborated, to be sound in itself. Even if it is not "self-supporting" in any sense, it should be accepted as a matter of sound educational policy and as an urgent measure of national reconstruction. It is fortunate, however, that this good education will also incidentally cover the major portion of its running expenses. We hope to show presently that within the scope prescribed by the Wardha Conference, it can do so to a considerable extent (*see* the detailed syllabus of spinning and weaving). The

syllabus gives the figures of the contribution to be made towards its own current expenditure by a school with the basic craft of spinning and weaving.

So far as this craft was concerned we had little difficulty in making these calculations, as expert work in this line has been going on for the last seventeen years under Mahatma Gandhi's guidance. The wages in this case have been calculated on the basis of the standard fixed by the All-India Spinners' Association in Maharashtra. In the case of other crafts, calculations may be made on the basis of the prevailing market rates. Mahatmaji has definitely suggested that the State should guarantee to take over, at prices calculated as above, the product of the work done by its future citizens in school, a view which we heartily endorse; ".....every school can be made self-supporting, the condition being that the State takes over the manufactures of these schools." (*Harijan*, 31 July 1937).

Apart from its financial implications, we are of opinion that a measureable check will be useful in ensuring thoroughness and efficiency in teaching and in the work of the students. Without some such check, there is great danger of work becoming slack and losing all educative value. This is only too obvious from the experience of educationists who from time to

time have introduced "manual training" or other "practical activities" in their schools.

But here we must sound a necessary note of warning. There is an obvious danger that in the working of this scheme the economic aspect may be stressed at the sacrifice of the cultural and educational objectives. Teachers may devote most of their attention and energy to extracting the maximum amount of labour from children, while neglecting the intellectual, social and moral implications and possibilities of craft training. This point must be constantly kept in mind in the training of teachers as well as in the direction of the work of the supervisory staff and must colour all educational activity.

SECTON II

OBJECTIVES

It has not been possible, during the short time at our disposal, to prepare a detailed correlated programme of work for the whole period of seven years. However, we have tried to put down, under separate heads, the objectives of the new schools. In the future each Provincial Board of Education must include an expert curriculum maker, who will be responsible for preparing the detailed correlated programme for the complete seven years' course of studies. As a result of their valuable observations in the new schools, the teachers,

working under competent supervision and guidance, will be able to supply the details which will serve as a basis for this work. We are, however, attempting to make a correlated syllabus in broad outlines which will form an annexe to this report.

MAIN OUTLINES OF THE SEVEN YEARS' COURSE OF BASIC EDUCATION

I. The Basic Craft :

Such reasonable skill should be attained in the handicraft chosen, as would enable the pupil to pursue it as an occupation after finishing his full course.

The following may be chosen as basic crafts in various schools:—

a. Spinning and weaving
b. Carpentry
c. Agriculture
d. Fruit and vegetable gardening
e. Leather work
f. Any other craft for which local and geographical conditions are favourable and which satisfies the conditions mentioned above (p. 14).

Even where an industry other than spinning and weaving or agriculture is the basic craft, the pupils will be expected to attain a minimum knowledge of carding and spinning with the takli, and a practical acquaintance of elementary agricultural work in the local area.

II. Mother Tongue :

The proper teaching of the mother tongue is the foundation of all education. Without the capacity to speak effectively and to read and write correctly and lucidly, no one can develop precision of thought or clarity of ideas. Moreover, it is a means of introducing the child to the rich heritage of his people's ideas, emotions and aspirations, and can therefore be made a valuable means of social education, whilst also instilling right ethical and moral values. Also, it is a natural outlet for the expression of the child's aesthetic sense and appreciation, and if the proper approach is adopted, the study of literature becomes a source of joy and creative appreciation. More specifically, by the end of the seven years' course, the following objectives should be achieved :

1. The capacity to converse freely, naturally and confidently about the objects, people and happenings within the child's environment. This capacity should gradually develop into :

2. The capacity to speak lucidly, coherently and relevantly on any given topic of every-day interest.

3. The capacity to read silently, intelligently and with speed written passages of average difficulty. (This capacity should be developed at least to such an extent that the student may read newspapers and magazines of every-day interest).

4. The capacity to read aloud — clearly, expressively and with enjoyment — both prose and poetry. (The student should be able to discard the usual lifeless, monotonous and bored style of reading).

5. The capacity to use the list of contents and the index and to consult dictionaries and reference books, and generally to utilize the library as a source of information and enjoyment.

6. The capacity to write legibly, correctly, and with reasonable speed.

7. The capacity to describe in writing, in a simple and clear style, every-day happenings and occurrences, *e. g.*, to make reports of meetings held in the village for some co-operative purpose.

8. The capacity to write personal letters and business communications of a simple kind.

9. An acquaintance with, and interest in, the writings of standard authors, through a study of their writings or extracts from them.

III. Mathematics :

The objective is to develop in the pupil the capacity to solve speedily the ordinary numerical and geometrical problems arising in connection with his craft and with his home and community life. Pupils should also gain a knowledge of business practice and book-keeping.

We feel that these objectives can be attained by a knowledge of and adequate practice in :

The four simple rules; the four compound rules; fractions; decimals; the rule of three; the use of the unitary method; interest; elements of mensuration; practical geometry; the rudiments of book-keeping.

The teaching should not be confined merely to the facts and operations of number. It should be closely co-ordinated with life situations arising out of the basic handicraft and out of the great variety of actual problems in the life of the school and the community. Measurements of quantities and values in these connections would supply ample opportunity for the development of the reasoning capacities of the pupils.

IV. Social Studies :

The objectives are :

1. To develop a broad human interest in the progress of mankind in general and of India in particular.

2. To develop in the pupil a proper understanding of his social and geographical environment, and to awaken the urge to improve it.

3. To inculcate the love of the motherland, reverence for its past, and a belief in its future destiny as the home of a united co-operative society based on love, truth and justice.

4. To develop a sense of the rights and responsibilities of citizenship.

5. To develop the individual and social virtues which make a man a reliable associate and trusted neighbour.

6. To develop mutual respect for the world religions.

A course in history, in geography, in civics and in current events, combined with a reverential study of the different religions of the world showing how in essentials they meet in perfect harmony, will help to achieve these objectives. The study should begin with the child's own environment and its problems. His interest should be awakened in the manifold ways in which men supply their different wants. This should be made a starting point to arouse their curiosity about the life and work of men and women.

1. A simple outline of Indian history should be given. The chief landmarks in the development of the social and cultural life of the people should be stressed, and the gradual movement towards greater political and cultural unity be shown. Emphasis should be laid on the ideals of love, truth and justice, of co-operative endeavour, national solidarity, and the equality and brotherhood of man. The treatment of the subject should be chiefly biographical in the lower, and cultural and social in the upper grades. Care should be taken to prevent pride in the past from degenerating into an arrogant and exclusive nationalism. ¡Stories of the great liberators of mankind and their victories of peace should find a prominent place in the curriculum. Emphasis should be laid on lessons

drawn from life showing the superiority of truth and non-violence, in all its phases, and its concomitant virtues, over violence and deceit. The history of the Indian national awakening, combined with a living appreciation of India's struggle for social, political and economic freedom, should prepare the pupils to bear their share of the burden joyfully and to stand the strain and stress of the period of transition. Celebrations of national festivals and of the "National Week" should be a feature in the life of every school.

2. The pupils should become acquainted with the public utility services, the working of the panchayat and the co-operative society, the duties of the public servants, the constitution of the District Board or Municipality, the use and significance of the vote, and with the growth and significance of representative institutions. Training under this head should be as realistic as possible and should be brought into close relationship with actual life. Self-governing institutions should be introduced in the school. The pupils should be kept in intelligent touch with important current events through the co-operative study of some paper, preferably brought out by the school community.

3. The course in social studies should also include a study of world geography in outline, with a fuller knowledge of India and its relations with other lands. It should consist of :

(*a*) Study of the plant, animal and human life in the home region and in other lands as controlled by geographical environment (stories, description, picture-study, practical observation and discussion, with constant reference to local facts and phenomena).

(*b*) Study and representation of weather phenomena; (mainly outdoor work, *e. g.* direct observation of the sun; changes in the height of the noonday sun at different times of the year; reading of the weather-vane, thermometer and barometer, methods of recording temperature and pressure; records of rainy and dry days and of the rainfall; prevailing wind directions; duration of day and night in different months, etc.).

(*c*) Map-study and map-making; the world a globe; study of local topography; making of and study of plans of the neighbourhood; recognition of conventional signs; use of the atlas and its index.

(*d*) Study of the means of transport and communication correlated with industries and life.

(*e*) Study of occupations; local agriculture and industry (visits to fields and factories); economic self-sufficiency and inter-dependence of different regions; types of agriculture and industry favoured by geographical environment; the principal industries of India.

V. General Science.

The objectives are :

1. To give pupils an intelligent and appreciative outlook on nature.

2. To form in the pupils habits of accurate observation and of testing experience by experiment.

3. To enable them to understand the important scientific priciples exemplified in

(a) the natural phenomena around.

(b) in the application of science to the service of man.

4. To introduce them to the more important incidents in the lives of the great scientists whose sacrifices in the cause of truth make a powerful appeal to the growing mind.

The curriculum should include the following topics from various sciences:

A. NATURE STUDY

(*a*) A knowledge of plants, crops, animals and birds in the environment.

(*b*) A knowledge of the changes of seasons and their effect on the activity of plants, animals, birds and man.

(*c*) A knowledge of crops in different seasons.

B. BOTANY

(*a*) Different parts of plants and their functions.

(*b*) Processes of germination, growth and propagation.

(*c*) Work on the school garden and the fields around to give the pupils an understanding of

the effects of differing conditions of moisture heat and light, and of the different qualities of seeds and manures.

C. ZOOLOGY

A study of germs, insects, reptiles and birds as friends and foes of man.

D. PHYSIOLOGY

The human body, its organs and functions.

E. HYGIENE

(*a*) Personal hygiene; cleanliness of teeth, tongue, nails, eyes, hair, nose, skin, clothes.

(*b*) Cleanliness of the home and the village; sanitation; disposal of night-soil.

(*c*) Pure water; the village well.

(*d*) Pure air; the function of trees in its purification; proper breathing.

(*e*) Food, hygienic and unhygienic; balanced diets.

(*f*) First aid and simple remedies.

(*g*) Common infections; contagious diseases; how to safeguard against them.

(*h*) Purity of conduct as a preservative of health.

F. PHYSICAL CULTURE

Games, athletics, drill (Deshi games to be encouraged).

G. CHEMISTRY

of air, water, acids, alkalis and salts.

H. A KNOWLEDGE OF THE STARS

showing direction and time at night.

I. STORIES

of the great scientists and explorers and their contributions to human well-being.

VI. Drawing :

The objectives are :

1. To train the eye in the observation and discrimination of forms and colours.

2. To develop the memory for forms.

3. To cultivate a knowledge of and appreciation for the beautiful in nature and in art.

4. To draw out the capacity for tasteful design and decoration.

5. To develop the capacity to make working drawings of objects to be constructed.

These objectives can be obtained by :

(*a*) Drawings made by children to illustrate read or observed material.

(*b*) Object and memory drawings, *e. g.*, drawings of plants and of animal and human forms (correlated with work in general science, handicraft, etc.).

6. Designing.

7. Scale drawing, graphs and pictorial graphs.

The work in drawing during the first four years should be correlated chiefly with work in reading and pictorial representation in nature

study and the craft. During the last three years emphasis may be laid on design and decoration and mechanical drawing, so as to enable pupils to make correct working drawings.

VII Music :

The objective is to teach the pupils a number of beautiful songs and to cultivate in them a love for beautiful music. The child's natural sense for rhythm should be developed by teaching him to keep his own time by beating with the hand. Walking in time to a fixed rhythm can be a great aid in achieving this.

Care should be taken to select only the best and most inspiring songs, the artistic interpretation of some healthy and elevating theme. Special emphasis should be placed on group or choral singing.

VIII. Hindustani ·

The object of including Hindustani as a compulsory subject in the school curriculum is to ensure that all the children educated in these national schools may have a reasonable acquaintance with a common "*lingua franca.*" As adult citizens they should be able to co-operate with their fellow-countrymen belonging to any part of the country. In teaching the language the teacher should in various ways quicken in the students the realization that this language is the most important product of the cultural contact of the Hindus and Muslims in

India. It is the repository—in its more advanced forms—of their best thoughts and aspirations. They should learn to take pride in its richness and vitality and should feel the desire to serve it devotedly.

In Hindustani-speaking areas this language will be the mother-tongue, but the students as well as the teachers will be required to learn both the scripts, so that they may read books written in Urdu as well as in Hindi. In non-Hindustani-speaking areas, where the provincial language will be the mother-tongue, the study of Hindustani will be compulsory during the 5th and 6th years of school life, but the children will have the choice of learning either one or the other script. However, in the case of teachers who have to deal with children of both kinds, knowledge of both the scripts is desirable.

At any rate, every public school must make adequate provision for the teaching of both scripts.

In general outlines, the syllabus of studies will be the same for boys and girls up to the 5th grade of the school. In grades 4 and 5 the syllabus in general science should be so modified as to include Domestic Science for girls. In grades 6 and 7 the girls will be allowed to take an advanced course in domestic science in place of the basic craft.

SECTION III

TRAINING OF TEACHERS

The proper training of teachers is perhaps the most important condition for the success of this scheme. Even in normal circumstances the quality of the teachers generally determines the quality of the education imparted. When a radical reconstruction of the entire educational system is contemplated, the importance of the teachers who work out these changes is greatly accentuated.

It is therefore essential that these teachers should have an understanding of the new educational and social ideology inspiring the scheme combined with enthusiasm for working it out.

Since they are to teach not only certain academic subjects, but also crafts, their training should include a reasonably thorough mastery of the processes and technique of certain basic crafts.

Their methods of teaching and approach to subject matter will be different. They will deal with the various subjects not as isolated and mutually exclusive branches of knowledge, but as inter-related aspects of a growing and developing activity which provides the focus of their correlation. For this purpose it is essential that teachers should have some training in formulating projects and schemes of correlated

studies, and thus link up life, learning and activity.

They must have an intelligent interest in the life and activities of their human environment and a thorough grasp of the intimate relationship between school and society.

Besides these points—which must be particularly stressed if the new scheme is to be worked in the spirit in which it is conceived—the teachers' training curriculum should of course include the other necessary capacities and subjects.

In order to gain admission to the training institution, the candidate must have read up to the Matriculation Standard in some national or recognized Government institution, or must have had at least two years' teaching experience after passing the Vernacular Final or some equivalent examination.

Curriculum for a Complete Course of Teachers.

Training (covering a period of three years)

1. *a.* Growing, picking, carding of cotton (or wool), spinning of yarn and making of warp.

b. Mechanics of the spinning wheel (or other instruments and tools involved in the exercise of the basic craft selected).

c. Economics of village industries with special reference to the selected craft.

d. Elementary carpentry involved in the selected craft.

2. Training in one of the follwing basic crafts :

a. Spinning and weaving.
b. Vegetable and fruit gardening.
c. Agriculture.
d. Carpentry.
e. Toy-making.
f. Leather work.
g. Paper-making.

or any other craft which may be considered suitable for any particular locality.

3. Principles of education, which should comprise :

a. The basic idea of education through productive work.

b. The relation of the school to the community.

c. Simple outline of child psychology (treated as concretely as possible) and of the psychology of acquiring technical skill.

d. Methods of teaching, with special reference to the formulation and development of schemes of correlated studies.

e. Objective of new education, studied with reference to the actual conditions of life in the country.

4. An outline course in physiology, hygiene, sanitation and dietetics, referring specially to the actual problems of village life and aiming at direct, practical utility.

5. A revision and further development of the basic course in social studies directed towards securing the teacher's proper orientation to the manifold problems of his social environment. This should culminate in a broad general survey of India and the world during the last fifty years.

6. A course of lessons and directed study in the mother tongue to introduce the teachers to some master-pieces of Indian art and literature, thus imparting a general cultural background.

7. Knowledge of Hindustani, and the capacity to read and write both the Hindi and Urdu scripts, in both Hindustani and non-Hindustani-speaking areas. (This is essential for teachers in *all* State schools and aided schools, if they are to further some of the basic cultural and civic objectives of this education).

8. Black-board writing and drawing.

9. Physical culture, drill and Deshi games.

10. Supervised practice teaching in attached demonstration schools.

We expect these teacher training schools to be residential institutions where the students and their teachers will be in close contact with one another. They should develop co-operatively a vigorous and many-sided social and cultural life in which the individual interests of the teachers in training will find adequate expression. We therefore invite the attention of the staff of these institutions to the desirability of encourag-

ing the growth of many and varied hobbies and social activities carried on by the teachers under training in their leisure time.

The real success of these institutions will be judged by the variety and spontaneity of the various hobbies and social activities, the enthusiasm and persistence with which they are carried out, and their reaction on the life of schools and the community.

The course as outlined above might possibly give the impression of being too heavy and ambitious, and therefore unlikely to be practicable. We are anxious to counteract that impression by pointing out that, if approached in the right spirit, it is possible to cover this ground with reasonable thoroughness. It has to be remembered, in the first place, that this is a continuous three years' course, and therefore it lends itself to a fuller planning than is the case at present. Secondly, we expect that after a few years' time when the scheme is well under way all the teachers recruited for training, having passed through our new schools, will have covered a good deal of the ground in craft training and in other subjects such as social studies. Therefore, this course will not so much teach new subjects as carry further and give a professional orientation to subject matter already studied. Thirdly, we would again emphasize the fact that at this stage the object is not to make a thorough, systematic and scientific study

of these various subjects, which would be an unduly ambitious undertaking, but to centre the teaching in actual concrete problems of civics, sanitation, hygiene, first aid, child behaviour and class room practice arising in the school or in the environing community life. Of course, we hope that if professional pride has been quickened and intellectual interest has been generated, many of these teachers will continue their study privately and try to obtain a more thorough acquaintance with certain subjects. But so far as the training period of these teachers is concerned, our object is not to produce academically perfect scholars, but skilled, intelligent, educated craftsmen with the right mental orientation, who should be desirous of serving the community and anxious to help the coming generation to realize and understand the standard of values implicit in this educational scheme.

Curriculum for a Short Course of Teachers' Training.

To make a beginning with this scheme as soon as possible, we recommended that a short emergency course of one year's training be provided for teachers specially selected from existing schools, national institutions and ashrams. The teachers selected should possess some back-ground of successful teaching

experience or craft work, and hold out promise of working the scheme in the right spirit with understanding and enthusiasm. The number of these teachers in any province may be determined by the number of schools which it is proposed to open at first.

The course of training for these teachers should include :

a. Training in carding and spinning with the takli. This will be compulsory, whatever may be the basic craft chosen.

b. Sufficient training in one of the above mentioned basic crafts to enable the teacher to teach the first three years' school course in that craft.

c. A short course in physiology, hygiene, sanitation and dietetics.

d. The basic idea of the craft school and its relation to community life.

e. Formulation and working of simple schemes of co-ordinated studies as a basis of co-ordinated teaching.

f. A short course of lessons on the history of the Indian national awakening and the trend of world movements during this century.

g. Teaching of at least twenty-five lessons in the practice school under proper supervision.

SECTION IV
SUPERVISION AND EXAMINATION

A. Supervision.

An efficient and sympathetic supervisory staff is almost as important for the new schools as a well-trained teaching personnel. Supervision is a fairly specialized work and we would recommend that provision should be made for the training of supervisors to meet the ever-growing needs of an expanding school system. The minimum qualification for a supervisor should in our opinion be complete training as a basic school teacher, together with at least two years' experience of successful teaching and a year of special training in the work of supervision and administration. Supervision should not be mere inspection, it should mean personal co-operation and help offered by one who knows more to a less experienced or less resourceful colleague. Supervisors should, indeed, be able to play the role of leaders and guides in the educational experiment. In order that the more important obligations of helpful guidance and leadership may be properly fulfilled, it is necessary that the load of unavoidable administrative and routine work should be as light as possible. Therefore there should be an adequate number of supervisors, and the supervisory districts should not be unmanageably large. This will mean greater expense, but economy here will be bad economy.

B. Examinations.

The system of examinations prevailing in our country has proved a curse to education. A bad system of education has, if possible, been made worse, by awarding to examinations a place out of all proportion to their utility. As a measure of the work of individual pupils or the schools, by a consensus of expert opinion examinations are neither valid nor complete. They are inadequate and unreliable, capricious and arbitrary. We shall take care to guard the proposed system of general national education against their baneful influence.

The purpose of the examination can be served by an administrative check of the work of the schools in a prescribed area by means of a sample measurement of the attainment of selected groups of students conducted by the inspectors of the Education Board. The tests so administered should be constructed in close consultation with the specialists responsible for curriculum revision. They should be long enough to cover the whole range of the curriculum and should be in a form which makes marking objective and independent of individual judgment.

The introduction of this check-up by sample testing will add greatly to the efficiency of the school system and will in fact lengthen the teaching term of the final class by at least six weeks, the time now usually wasted on memorising "notes" and "revisions" which precede

the ordeal of examinations. This period may now be devoted to a test of the efficiency of individual pupils in the basic craft over a period of weeks, to be determined from case to case, and to comparatively more intensive work for the improvement of the village community which the school serves.

The promotion from grade to grade should be decided exclusively by the teaching faculty of the school on the basis of careful records of the pupils' work. To maintain the desired level of efficiency throughout the school system, the Board of Education should conduct an annual testing of typical sections from each grade of the schools of the various divisions. As far as possible, pupils should not be made to repeat the work of a grade or any considerable portion thereof. If a large number of children in a class "fails", the work of the teacher needs watching. If a school records many failures its administration must be looked into, and if the number of failures in the whole school system is large, there is something wrong with the curriculum and the norms set for the several grades. This should be set right. There is hardly any justification for making pupils repeat the work of a grade.

The Board of Education should judge the efficiency of its schools by the sample achievement tests mentioned above, by the efficiency of the pupils in the basic handicraft, and by the

specific contributions made by the teachers and pupils to the improvement of the general life of the community around. An annual district exhibition of the work of the schools will also go a long way towards keeping up to a definite standard of achievement.

SECTION V

ADMINISTRATION

1. The objectives of education which we have enunciated above (Sec. II) will require that the pupils remain at school for seven years. After careful consideration we have come to the conclusion that seven plus will be the proper age to enforce compulsion. Since we accept as a principle that the basic education should as far as possible be the same for all, we recommend that it should be free and compulsory for all girls and boys between the ages of seven and fourteen. As a concession, however, girls may be withdrawn after the completion of their twelfth year if the guardians so wish it.

2. We realize that by fixing seven plus as the age for the introduction of compulsory education, we have left out a very important period of the child's life to be shaped in the rather unfavourable surroundings of poor village homes, under the care of 'uneducated and indifferent parents mostly struggling against unbearable circumstances. We feel very strongly the necessity for some organization of pre-school

education, conducted or supported by the State, for children between the ages of three and seven. A painful consciousness of the realities of the situation, chiefly financial, prevents us from making this recommendation. We are anxious, however, that the State should not overlook its ultimate responsibility in the matter. We are confident that if the scheme of basic education suggested here, with its intimate relation to home life, is firmly established, it will go a long way towards helping the pre-school child to get a better home training than he now does. It will also help considerably in the great work of adult education, which will have to be taken up in right earnest at no distant date.

3. We have tried to make an estimate of the time required to complete the different sections of the curriculum. We feel that the following distribution will be about right:

The basic craft	3 hours 20 minutes.
Music, drawing and arithmetic	40 minutes.
The mother tongue	40 minutes.
Social studies and general science	30 minutes.
Physical training	10 minutes.
Recess	10 minutes.
	5 hours and 30 minutes.

In making this estimate, we have kept spinning and weaving as the basic craft. The distribution might vary from craft to craft, but

in no case should the time allotted to the basic craft exceed the above estimate.

The school is expected to work for 288 days in a year, average of 24 days in a month.

4. In view of the diversity of pupils' interests we recommend that as far as possible a variety of crafts should be provided for, at least during the last two years of the school course.

5. We are of opinion that every school should have attached to it a plot of land big enough for a school garden and a playground.

6. Research has established a very close relationship between malnutrition and backwardness at school. Considering the almost universal under-nourishment of the village children, we recommend that every effort should be made to remedy the defect by providing light nourishment to all children during school hours. We are confident that the State will be able to secure enough co-operation from the public to meet the expenses involved in the undertaking.

7. With regard to the teachers' salaries, we endorse Gandhiji's suggestion that "it should, if possible, be Rs. 25 and never less than Rs. 20." But we also contemplate that for teaching the higher classes of the school, it may be necessary to employ some teachers with higher academic qualifications, and for them a somewhat higher pay may have to be provided.

8. We recommend that during the first two or three years of this experiment, specially qualified and competent teachers should be secured—even if their pay is somewhat higher—so that in selected schools they may work out the necessary details and technique of the syllabus and the new methods of teaching. When this pioneering stage has been successfully crossed, it will be possible for average teachers who have received training in our three year institutions to carry on the work fairly satisfactorily.

9. We are of opinion that the average number of students in any class should not exceed thirty. If the number is large, it will not be possible for the teacher to discharge his heavy and responsible duties efficiently.

10. In the selection of teachers, preference should be given to those who belong to the locality in which the school is situated.

11. In order to encourage women to take to this profession, special efforts should be made to provide facilities for training them as teachers.

12. The problem of selecting suitable candidates for training should be carefully and competently examined, and a reliable technique of selection evolved. We are convinced that unless this difficult problem is tackled, the scheme will have little chance of success. Teaching requires special social and moral attitudes and qualities, and it is not right to assume that

everyone who volunteers to enter the profession is suitable for it. We must, therefore, conduct our selection with great care and forethought and preferably take only those who belong to what the psychologists call " the social type. "

13. We suggest that these training institutions should be residential institutions, open to all classes and creeds, and free from restrictions relating to untouchability and interdining.

14. In these institutions expert artisans or craftsmen may be employed to give craft training. Local artisans may also be utilized, if necessary, to help the teachers of basic schools in their craft teaching and in putting the finishing touches for marketing purposes to the material produced by the students.

15. Refresher courses on a large scale should be gradually organized at training colleges and schools, in order to maintain and improve the efficiency of teachers. Such courses should be of various types — cultural, professional and industrial.

16. Demonstration schools should be attached to every training institution and these should serve as laboratories where new methods of teaching are attempted and developed. These schools — staffed by specially qualified teachers— should serve as models for their locality, and teachers from other schools should be given an opportunity to see the working, teaching materials, and technique.

17. The introduction of a craft, the co-ordination and correlation of the content of the curriculum, the close relationship 'with life, the method of learning by doing, the individual initiative, and the sense of social responsibility, which are among the main features of the new scheme suggested here, cannot be realized without supplying to both the teachers and the pupils — but primarily to the teachers — such books and material as would help to achieve our aim. It is essential that the illustrative material, the books for the teachers, and the necessary programmes of correlated work should be prepared. Entirely new text-books, permeated with the new spirit, are also essential. The Board of Education in each province and the Central Institute of National Education whose establishment is recommended below, will be able to render valuable help in this connection. The provinces which propose to establish the new type of schools must institute the requisite machinery for the preparation of these necessary books and materials at the earliest possible date.

18. In the section on examination we have referred to the systematic measurement of school achievements as an important function of the education authority in each province. We recommend that the Board of Education in each province should provide on its academic side for an effecient staff of educational experts. This staff should carry on scientific research to fit the

school curriculum to the real life of the people, and to guide the teachers in the use of the new standards and norms of achievement. They should try progressive methods of teaching, keep the teachers in touch with the results of successful experiments undertaken in this country and elsewhere, and also guide the training of teachers and supervisors.

19. Apart from the official boards, we would recommend the formation of an independent, non-official Central Institute of Indian Education, which should be free from administrative responsibility and consist of persons eminent in the field of education as well as in other spheres of cultural activity. The objects of this institute should be as follows :

1. To serve as an advisory body on matters of educational policy and practice.

2. To study and discuss the ideas and aims underlying educational efforts in India and outside, and to make the results of this study available to all who are interested.

3. To collect information about, and to keep in touch with, the educational work of the various Indian Provinces and States, as well as foreign countries.

4. To organize research on problems relating to education.

5. To issue monographs and a magazine for educational workers.

20. It is common knowledge that the different public utility services of the country which should be concerned with the welfare of its future citizens are sadly un-co-ordinated. We recommend that the Department of Education should be placed in a position to secure the co-operation of the other State departments (*e. g.* Health, Agriculture, Public Works, Co-operation, Local Self-government) in building up a healthy, happy and efficient school community.

Mahatmaji,

In presenting the graded syllabus of Basic Education which you wanted us to prepare, we should like to clear up certain points which have caused, or may occasion, misunderstanding to those who have not clearly grasped the ideas and principles underlying this syllabus.

In the first place, it is necessary to appreciate the limitations under which we have worked. A syllabus of this kind, which aims at far-reaching reconstruction of educational practice, really requires a background of fairly extensive experimental work on the lines indicated in our Report, because it is only after such practical experience that all the possible correlations can be confidently worked out. We have done the best we could in preparing this syllabus and have fully utilized our collective experience as teachers, as well as the suggestions received from friends. But we must point out that this should be regarded as a tentative scheme drawn up to show that the principle of co-ordinated teaching which we have advocated in our Report can be worked out in practice and translated into the terms of the curriculum. As teachers in our training schools and colleges and in the new schools of basic education begin to work out the scheme

scientifically and record their observations and experiences, it will be possible to improve the syllabus progressively. Such an experimental attitude of mind on the part of the teachers is essential for the success and efficient working out of this educational scheme.

We have given the detailed grade placements of the subjects for the seven classes of the basic school in order to show that, with spinning and weaving as the basic craft (selected for illustration), it is possible to include the essential subject-matter in language, mathematics, social studies, general science, and drawing, within the time available for the purpose, and to co-ordinate it with the craft work to a considerable extent. This will show that, on the one hand, the subject matter selected is not excessive (as some critics of the scheme have made out) and, on the other hand, no really significant units of a cultural curriculum have been omitted.

We have also given the detailed grade placements of two other basic crafts suggested in our Report — Agriculture and Woodwork. These syllabuses were prepared for us by experts outside our Committee, as none of us had the necessary knowledge and experience. Leaving aside the details of these syllabuses, we are confident that the contents of the general curriculum could also be correlated with or conveyed through either of these two basic crafts.

In order to work out an effective and natural co-ordination of the various subjects and to make the syllabus a means of adjusting the child intelligently and actively to his environment, we have chosen three centres, intrinsically inter-connected, as the foci for the curriculum, *i. e.*, the Physical Environment, the Social Environment, and Craft Work, which is their natural meeting point since it utilizes the resources of the former for the purposes of the latter. With a view to demonstrate how the subject-matter selected is co-ordinated with these three centres we have also given, besides the grade placements, a separate indication of how the various items of the curriculum can be correlated with the basic craft of spinning and weaving. This will also, incidentally, answer the criticism that the scheme is not child-centred —a criticism which is based on ignorance of one of the most strongly stressed points in our Report. We have also given, as an Appendix, a chart prepared by one of our colleagues, showing graphically how the entire syllabus is definitely child-centred. We fail to understand how this scheme, based on activity, and the study of the child's physical and social environment, can be less child-centric than the present education which is entirely book-centred!

It is essential for all teachers and educational workers to note that we have really attempted to draft an "activity curriculum," which implies

that our schools must be places of work, experimentation and discovery, not of passive absorption of information imparted at second-hand. So far as the curriculum is concerned, we have stressed this principle by advocating that all teaching should be carried on through concrete life situations relating to craft or to social and physical environment, so that whatever the child learns becomes assimilated into his growing activity.

It should be noted in this connection that in the preparation of this syllabus, we have attempted to organize the subject-matter into significant and comprehensive units of experience which will, when mastered, enable the child to understand his environment better and to react to it more intelligently because they throw helpful light on the problems and conditions of life around him. We are conscious of the fact that there is much scope for improvement in the actual units selected, but we are confident that this is the right approach to the syllabus, rather than the current practice of making it a collection of unrelated and miscellaneous facts having no direct bearing on children's experiences or on social life. The syllabus in Social Studies and General Science will illustrate this principle. When, for instance, work in Social Studies or General Science is related to Drawing, and the knowledge of History and Geography enriches the child's understanding and appreciation of his

craft, when Gardening and Agriculture are an integral part of his education, the school should become an active centre of experience and of abundant life.

But the working of this curriculum is in itself a problem of great importance, and demands intelligent alertness and responsiveness on the part of the teachers, for even the best of curricula can be made mere dead letter, if the method of teaching and discipline adopted are not inspired by the spirit of activity. In order to indicate, therefore, how the full possibilities of this curriculum can be exploited, it seems necessary to point out by way of illustration, the method to be adopted in the approach to some of the subjects included in the curriculum. For if subjects such as Social Studies and General Science are presented by the teachers as catalogues of facts to be passively accepted and learnt up by the children, the whole object of the syllabus will be defeated, and they will entirely fail to appreciate the real nature of the correlation amongst the various subjects. This can only be realized when they are acquired through real learning situations involving self-activity on the children's part.

In the syllabus of Mother Tongue, for example, we have attempted to stress both the creative and utilitarian values of language and literature. The teacher must organize his oral work as well as his reading material round the

actual but growing life and interests of his children so that they may gradually

a. develop a consciousness of the wonders of the life of nature around them,
b. observe and describe the different processes of the school crafts and the life of their home, village and school,
c. write simple business and personal letters as a normal activity of social life,
d. keep a daily record of progress in the basic handicrafts,
e. help in the editing of a school magazine and the preparation of a daily news bulletin,
f. make a clear and connected speech of reasonable duration on some topic of general interest,
g. appreciate beautiful literature.

This suggests not only a principle for the selection of topics in the literary readers, but also stresses the close connection of the mother tongue with craft work, social studies and village life and activities. The method of teaching must, therefore, be such as will give the child a mastery of his mother tongue as a tool not only for learning but for use in actual life situations.

Similarly, the syllabus in Social Studies is an attempt to adjust the child to his social environment, both in space — which is the function of Geography — and in time — which is the function of History. Civics, which aims partly at

the giving of intellectual understanding of present day problems and partly at developing the right social and intellectual attitudes, has also been included as an integral part of this syllabus. It requires an intelligent study of the child's immediate environment and its salient features as well as the development in school of self-governing institutions and its organization as a genuine co-operative community involving mutual obligations and distribution of duties and responsibilities.

The teaching of these subjects should not only be closely co-ordinated, but it should spring from actual social situations — the child's home, his village, its occupations and crafts — and then be extended and enriched by stories of primitive life and ancient civilizations, and by showing how different ways of life and work have developed under different social and geographical conditions. The teaching of geography and nature study in the lower classes should, for example, be gathered round the different seasons which provide a starting point for observing natural phenomena, and the intelligent teacher will take care that the children make their early acquaintance with all these phenomena through active personal observations, excursions, gardening, tending of pets and survey of the locality. But it is necessary, throughout the course, to ensure that the child acquires his knowledge actively and utilizes it for the under-

standing and better control of his social environment. Hence the need for correlating the school with the activities of the environing community life which we have duly stressed in the Report.

In order to make Mathematics real to the child we have indicated how its various processes can be correlated with the various craft processes and it is equally possible to work out their connection with facts learned in the Social Studies and General Science courses. If the children learn their four simple rules by actually working out the problems which arise in their craft work and gardening and by dealing with figures which will also throw light on the economic and social facts of their village or town or country, if there is practical measuring and field-work and calculations of expenditure and of rural indebtedness, the learning of mathematics not only becomes an active process, but also a means of interpreting and understanding the social environment.

As a further illustration of the principle of co-ordination, we should like to make a special mention of physical education. So far as the theoretical aspect of physical education is concerned, the children will gain the necessary knowledge of Physiology, Hygiene and Dietetics through their General Science courses. As for practical training, the entire work of the school, involving craft-practice, games, gardening and

active methods of learning, has been envisaged as an aid to the development of the child's health and physical vigour.

We have not drafted a regular syllabus for Music because in this scheme of Basic Education it is not possible to give scientific training in music to all children. What we recommend, however, is that in all classes there should be a course of choral singing, set to standard tunes and time, with an elementary acquaintance with the principal Indian ragas and tals. This need not, however, be insisted upon in the case of all children—those who are not musically gifted or who have any objection to learning ragas and tals may be excused. The songs suitable for children between seven and fourteen should be carefully selected and should include national songs, folk songs, devotional songs, seasonal and festive songs. The selection should also include a few songs in simple, quick rhythm suitable for group singing in connection with their craft-work and physical training. Such selections in various languages may be issued from time to time, out of which the teachers may make their choice.

It is possible to multiply such examples in connection with each aspect of the syllabus but it is not necessary to do so. These examples should suffice to show that there is an intrinsic unity of method and curriculum which cannot be ignored, and that this syllabus will help in the

training of intelligent, practical and co-operative citizens only if it is approached in the spirit indicated above.

We welcome the criticisms and objections which we have received or which have appeared in the press because they show that both teachers and the public have given thought to our scheme. But we feel that many of the objections raised are due to a misunderstanding of the basis of the scheme. We would, therefore, like, with your permission, to refer to the more important points raised.

1. Much criticism has been directed against the amount of time devoted to craft work, and it has been argued that academic work will be starved in consequence. Without subscribing to the implied dualism between practical and academic work, we would point out that the time allotted to the basic craft is not meant to be spent only on the mechanical practice of the craft, but oral work, drawing and expression work naturally connected with it, as well as instruction in the why and wherefore of the processes involved, *i. e.*, their scientific and intelligent understanding, which is an important educative aspect of craft work, will also be given during this time. This is clearly implied in our scheme of three-centred co-ordination.

Moreover, as pointed out in the Report, the object of the scheme is "not primarily to produce craftsmen able to practise their craft

mechanically, but to exploit the resources implicit in craft work for educative purposes"— the adoption of the activity method should ensure the attainment of this objective.

2. Some people are alarmed because there is no reference in this scheme to secondary or higher education, forgetting that our terms of reference were confined to a seven years' scheme of basic education only, and they are apprehensive that we want to limit the facilities for higher education. We have only to point out that this is a scheme of universal and compulsory basic education for all children, to be followed in due course by higher education for those who are qualified to receive it; and when that scheme is drawn up, it will have to be co-ordinated with the scheme of basic education, so as to ensure continuity as well as proper intellectual equipment for those who are to proceed further with their education.

3. The scheme has also been criticized because it contemplates the child's education beginning at the age of seven, which is argued as being too late. In the Report, we have made it clear that we recognize the great importance of pre-school education and envisage the possibility of its introduction on a voluntary basis, with State help where possible. But in view of the present financial and other considerations, we have not felt justified in including it as a part of our compulsory scheme.

Moreover, we have chosen the 7—14 age range because we consider it absolutely necessary to keep the child at school until he is fourteen, in order to ensure that (1) he will receive the essential modicum of social and civic training which, for psychological reasons, is not possible earlier (2) he will become a better citizen, (3) his literary training will be thorough enough to make a lapse into illiteracy impossible, and (4) he will acquire sufficient skill in his basic craft to practise it successfully if he adopts it as his vocation. We are so strongly convinced of the educative importance of the years of adolescence that if we could extend the period of education, we should like to keep the students at school till the age of sixteen in order to ensure proper moral, social and civic training.

4. We have not given a separate and distinctive place to play in the scheme because it is essentilly an extra-curricular activity; if it is made a compulsory part of the syllabus, it loses its spontaneity and ceases to be play in the psychological sense. But in our syllabus, we have made provision for individual and group games, and we contemplate that in all good schools various kinds of games will be encouraged. It should, however, be borne in mind, that in an activity school play is an integral part of its method and is not included as an escape from academic drudgery.

5. We should like to make it clear—if the Report has not already done so—that we do not contemplate any direct connection between the teachers' salary and the proceeds from the sale of the children's products. Teachers are to be paid directly from the State Treasury as at present and are not to be dependent on the somewhat fluctuating income received from the sale of school products, which should be credited as income to the Treasury. As the Wardha Conference had made it quite clear in its resolutions that the basic crafts practised in schools were expected in due course to cover only the remuneration of the teachers, it was hardly necessary for us to say that all other expenditure *e. g.*, on buildings, equipment etc., must be met from other sources, public and private.

6. We had not specifically mentioned, in our Report, the setting up of a sales organization for the school products, because we were primarily concerned with the drafting of an educational scheme and not with its political and administrative implications. Moreover, you also had made it quite clear in your speech at the Conference that, in the last instance, the State will be responsible for their purchase at a fair price, and we had made a reference to your remark in the Report.

7. Considerable criticism has been voiced in certain quarters on the assumption that our

scheme is opposed to all industrialization and aims at harking back to a primitive state of society utterly incompatible with the forces and needs of modern times. Without entering into controversy about the respective merits of industrialization and the rural economy, we want to point out that there is no necessary, logical connection between the scheme of basic education and either the industrial or the small-scale village economy. We have recommended the approach to education through crafts and productive work because that is a psychologically sound method of education, but we fail to see why co-ordinated training in the use of the hand and the eye, training in practical skill and observation and manual work, should be a worse preparation for later industrial training than the present education which is notoriously bookish and academic, and definitely prejudices our students against all kinds of practical and industrial work.

We are conscious of the large amount of administrative organization which this scheme will involve and we realize that the Education Department in each province will have to think out the detailed ways and means by which the scheme is to be gradually put into operation. Without attempting to take over this great responsibility on ourselves, we should like to make a few suggestions in this connection, which we trust will be found useful in working out the

detailed stages in which the scheme is to be introduced in India.

The first step, which should in our opinion be taken immediately, is to set up a number of training schools in selected rural areas — at least one or two schools in each linguistic province — where teachers may learn the technique of education through crafts and productive work and be trained to teach in the new basic schools. The number of teachers to be trained and basic schools to be opened in the selected area will be determined by the extent of that area. We suggest large area, *e. g.* a district, should be selected, for the purpose, and the Education Department should undertake a survey of its requirements — the number of existing schools to be transformed, the number of new schools to be opened, and the number of teachers needed for them. Immediate steps should be taken to train this number both by utilizing the existing training schools and by opening new ones. We are of the opinion that this work of establishing basic schools for all the children in the selected area should be completed within five years. Meanwhile, all the other training schools in the Province should be transformed into the new type of training schools, so that the work of establishing new basic schools, as well as of transforming existing schools all over the Province may proceed as rapidly as trained teachers become available. It

will be necessary during the first few years to have both kinds of training schools *i. e.*, one — year and three — year schools. The short course of one year's duration may be given to specially selected and, preferably, experienced teachers from existing schools so that they might start work a year later in the new schools. Simultaneously, however, the regular three years' courses should also be introduced and another group of teachers selected to undergo this training. The Department should arrange to send all the teachers in the existing schools, who cannot attend the one year's course of training, to specially organized refresher courses where they may understand the principles and methods of basic education. A scheme should be drawn up to ensure that all teachers in the service of the Department have attended such a course within the next five years.

It is essential that these training schools be located in rural areas so that teachers may work and acquire the necessary experience under conditions in which they will have to carry on their teaching. If they are trained in an urban environment where they will be deprived of village contacts, they will not be able to develop the requisite attitudes and habits.

When the first batch of teachers has been trained, new basic schools should be started in a selected area where as far as possible all the schools should be of the new type contemplated.

It does not seem desirable that schools of the present as well as the new type should co-exist in the same area. Naturally it will be easier and more useful to select for this purpose areas in which there are few schools at present and where, for that reason, the provision of educational facilities is more urgently required.

Secondly we suggest that every training school so started should have a demonstration school specially organized to impart basic education according to the syllabus and the technique outlined in our Report. This school, like the training school, should be staffed by specially competent teachers, who possess the necessary intellectual and practical disposition to work the scheme sympathetically. It will serve as a model school for the locality to which other schools to be established later will look for inspiration and guidance.

Each province should, we suggest, undertake a survey of its educational requirements and plan out a detailed programme of action. The survey should aim at finding out the number of children to be educated, the number of teachers and schools that will be eventually required for their education, the number of training schools that will have to be established the rate at which trained teachers can become available year after year. On the administrative side, the survey should indicate the amount of money which will be required for recurring and non-recurring

expenses, and the machinery that will have to be put up for the sale of the school products. These are practical and concrete problems that will have to be worked out—their magnitude is no excuse for fighting shy of them or looking upon them as impossible. We are fully alive to the financial implications of this great educational enterprise, but we think that it should be possible for provincial governments to put this scheme into full working order, and introduce compulsory and free universal education in the whole country in about 20 to 25 years' time. What we suggest is the drawing up of a kind of 20 years' plan to provide basic education and to liquidate illiteracy. If this scheme is supplemented by some adequate system of adult education given through various voluntary agencies, and also through the conscription of school and college students for the purpose, we have every hope that within that time India will have made rapid strides towards the goal of a 100% literacy.

In working out the programme of national education, the Provincial Governments should utilize the services of the All India Education Board, the establishment of which we have recommended in our report. The Board could, for example, help in the preparation of suitable educational literature for teachers as well as advise about the preparation of books for the new schools. It could also give advice on the

educational problems which may be referred to it for opinion and generally act as a central bureau for educational information. The Provincial Governments should, in their turn, give all necessary help and facilities to the Board in the discharge of its important duties.

There are also a number of other non-official organizations in the country, *e. g.*, national educational institutions, the All India Spinners' and Village Industries. Associations which could help in the working out of the scheme in various ways. We expect that there will be close co-operation between these organizations and the Education Department. We also contemplate that as a result of the enthusiasm released by this scheme of national education, many voluntary organizations and workers will be forthcoming to start training centres and basic schools. The Provincial Governments should encourage such private enterprises in education and help them with expert advice and funds.

We desire to express our thanks to all those friends who have helped us in our work by sending their suggestions and criticism and by drafting syllabuses in various subjects, which we have utilized in preparing our syllabus of basic education. We were happy to find, from some of the institutions and individuals that sent us their suggestions, that there were schools in India

which had been working already almost on the lines contemplated in the Wardha scheme.

We should like to make special mention and express our grateful thanks to the following, whose syllabuses in the various subjects were particularly helpful.

Syt. D. R. Moharikar, Deputy Director of Agriculture, C. P. and

Syt. S. R. Bhise, Hakimji High School, Bordi, for syllabus in Agriculture.

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all typing work in connection with the work of the Committee.

We submit this syllabus to you in the hope that it will meet with your approval and that it may form an adequate foundation for basic education suited to the genius of the Indian nation and the needs of the country.

Respectfully,

Sd/- ZAKIR HUSAIN (*Chairman*)
K. G. SAIYIDAIN
KAKA KALELKAR
KISHORLAL MASHRUWALA
J. C. KUMARAPPA
SHRIKRISHNADAS JAJU
VINOBA
ASHA DEVI
ARYANAYAKAM (*Convener*)

DETAILED SYLLABUS

DELIVERED 22 JUL 1965

BASIC CRAFT AGRICULTURE

The syllabus has two distinct parts. The first relates to the period beginning from Grade I to Grade V, when agriculture will not be taken up as a basic craft. During this period the aim will be to provide a suitable course to interest and instruct the pupils in the fundamental principles of soil management and plant growth. It will form part of the syllabus in General Science. The pupils will be working on a small plot of about an acre, and will grow vegetables and other garden crops.

The second relates to the period of Grades VI & VII, when the pupils may take agriculture as the basic craft. The practical and theoretical courses for each year are so correlated that while practising the first the second could very easily be explained to and assimilated by the pupils.

GRADE I

N. B.—Pupils in this class will be seven years old. Garden work only will be done on a small portion of the demonstration plot. They will use small khurpies and watering cans. The first half year will be spent entirely in observation. Practical work as suggested below would begin in the next half-year. The

theoretical portion should be dealt with in an interesting manner. Only broad facts should be given — details are to be developed later.

Practical

1. Sowing of seeds in the nursery.
2. Watering the nursery.
3. Care of seedlings and plants (garden).
   (*a*) Watering,
   (*b*) Weeding.
   (*c*) Mulching.
   (*d*) Picking insects.
   (*e*) Manuring the nursery and small garden plants with fertilizers.
4. Collection of seeds of flower plants and vegetables in the garden.
5. Animal husbandry.

   Feeding domestic birds and animals. Taking care of the young of pets.

Theoretical

1. Recognition of a plant and its different parts. Roots, stems, leaves, flowers and fruit.
2. How a plant develops from the seed. Seed, root, stem, leaves, flowers and fruit.
3. What the plant needs for its growth. Soil, water, food, light and air.
4. Uses of birds and animals.

N. B.—In addition to the above, the pupils will be taken round the fields in the village for observational purposes.

GRADE, II

Practical.

1. Sowing of seeds.
2. Preparation of small seed beds in boxes.
3. Preparing areas to take seedlings—garden beds of small sizes.
   (*a*) Digging.
   (*b*) Manuring.
   (*c*) Khurpi work.
4. Transplanting of vegetable and flower seedlings :
   (*a*) Spacing.
   (*b*) Handling.
   (*c*) Planting.
   (*d*) Watering.
   (*e*) Protection.
5. Mulching and weeding with khurpies.
6. Manuring :—
   (*a*) Top-dressing.
   (*b*) Mixing.
7. Picking insects and spraying the diseased parts of plants.
8. Propagation other than by means of seed. Use of cuttings—how performed—results to be noted later.
9. Animal husbandry.
   Keeping pets and observing their habits.
10. Art and craft.
    Preparing designs in the garden based on certain geometrical figures. Preparation of

bouquets and garlands. Making hanging pots for flower plants and creepers from bamboo chips.

Theoretical.

1. How the site for a nursery should be selected and a nursery made.
2. Kind of soil and manure required.
3. Recognition of good and bad seed.
4. Effect of the quality of seed on germination.
5. Functions of different parts of the plant: —
   (*a*) Root.—fixation in the soil—absorption of food.
   (*b*) Stem. Absorption — carrying the food and sustaining the upper growth.

N. B.—Red ink experiment may be performed in the class room to show how the absorbed material rises through the channel.

6. Time of planting — late in the afternoon. Watering — early in the morning and late in the afternoon.
7. Collection of seed. Where and how to collect.

N. B.— The pupils will be taken round the farm when important operations are in progress, for purposes of observation.

GRADE III.

Practical.

N. B.—In this class, all the operations in the flower and vegetable garden will be done by the pupils. They will be able to handle and

work with small sized spades, forks, kudalies and other hand tools.

1. All operations done in the two previous classes to be repeated.
2. Potting the plants.
3. Preparation of leaf mould and compost for pots.
4. Propagation of plants by layering. Results to be noted later.
5. Rearing of caterpillars to see the four stages.
6. Mulching of flower and vegetable beds during breaks.
7. The use of manured and unmanured pots to observe the difference in the growth of plants.
8. Animal husbandry. Tending the animals.

Theoretical.

1. Study of germinated seeds :—
   (*a*) Embryo.
   (*b*) Cotyledons.
   Embryo grows into plumule and radical.
   Contents of cotyledons. Growth of plumule upwards, and of radical downwards. Fate of cotyledons as a plant grows.
2. Study of roots :—
   (*a*) Tap root.
   (*b*) Fibrous root.
3. Study of stem, division into bark and wood, nodes, internodes, buds, branches and leaves. Difference between a root and a stem.

4. Life history of a butterfly and a grass-hopper.
5. Crop pests.
   Stem and shoot borer. Control measures.
6. Pot filling :—
   (*a*) Material required for filling the pots.
   (*b*) Qualities of a good leaf mould and the proportion in compost.
7. Necessity of manures and their functions.
   The use of artificial manures.
8. Disposal of night soil. Its value as manure.
9. Knowledge of the different dairy products.

GRADE IV.

Practical.

1. Growing of rainy season vegetables in the garden plots.
   Cucurbits, beans, brinjals, etc., (according to locality).
2. Preparation of land in the garden for transplanting the seedlings.
3. Manuring the land.
4. Laying out the land for irrigation and irrigating the crops after transplanting and thereafter.
5. Top-dressing of vegetable crops with different fertilisers. Ammonium sulphate, nicifos and nitrate of soda.
6. Percolation and capillary experiments with and without mixture of manure, lime and sand.
7. Study of different ploughs.

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(*a*) Wooden.
(*b*) Iron ploughs—monsoon, J. A. T., Kokan and Ridging. Their functions by observation while they are being worked in the fields.

8. Visits to the neighbouring hills where possible to demonstrate the formation of the soil.
9. Poultry farming.
Feeding, cleaning the sheds and the runs; collecting eggs; hatching; care of chickens.

Theoretical.

1. Recognition of field crops. Division into two main groups according to the time of sowing. Rabi and kharif.
2. Study of soil.
(*a*) Formation of soil. Agencies which bring about the weathering and tearing of rocks.
(*i*) Air. (*ii*) Water. (*iii*) Heat.
3. Recognition of soils of the locality.
4. Their classification into sandy, loamy and clay.
5. Recognition by:—
(*a*) Feel, granulation, colour, weight.
(*b*) Mechanical analysis of each.
(*c*) Physical characters of each.
(*d*) Correlation between texture and structure of a soil. Presence of air and its effect on absorption, percolation and capillary rise.

(*e*) To deduce from above the suitability of soils for kharif, rabi and garden crops.

6. Forms of soil moisture.
7. The control of soil moisture.
8. Necessity of manures and their functions. When, how, and in what quantities artificial manures should be applied.

GRADE V.

Practical.

1. Weeds and weeding.
2. Wooden and iron ploughs. Their functions by observation during their use in the field.
3. Bakharing or harrowing.
   Difference between ploughing and bakharing to be observed.
4. Cultivation of vegetables. In addition to rainy season vegetables, cold weather vegetables, such as cauliflower, lettuce, cabbage, knolhol, french beans, tomatoes and peas will also be grown on the plot.
5. Study of roots of cotton, jowar, tur and gram.
6. Planting of the pieces of the roots of radish and carrot, and of the stems of potatoes, arun, and ginger for the recognition of roots and stem.
7. Pupils to collect many kinds of leaves and to divide them first according to veins and later on into simple and compound leaves.

8. Pupils to observe and to note the time of opening of flowers in their garden.
9. Compost making from weeds and other vegetable matter collected in the garden.
10. Field experiments to be carried out in special small plots, set aside in the garden for observation purposes to note the effects of manuring, weeding and mulching.
    (*a*) Manured *versus* unmanured plots with the same crop and uniform treatment in other respects.
    (*b*) Weeded *versus* unweeded plot.
    (*c*) Crop weeded and hoed *versus* weeded only.

Theoretical.

1. Kinds of weeds.
2. Necessity of weeding. When and how to weed.
3. Effect of cultivation on weeds.
    (*a*) Deep for perennials.
    (*b*) Shallow for annuals.
4. Utility of mulching during the after-rains.
    The effect on
    (*a*) Absorption and retention of soil moisture for rabi crops.
    (*b*) Weeds.
5. Country and iron ploughs to be compared.
    Difference in—
    (*a*) Make.
    (*b*) Work.

(c) Advantages of monsoon plough over the country plough.

6. Kind of work a bakhar does. The difference between the working of a plough and a bakhar. Effect of bakharing rabi land during breaks in rains.
7. Formation of roots and their division into two root systems. Tap and fibrous.
8. Modification of the roots and stems.
9. Observation of roots such as the radish, sweet potato and carrot, and stems such as potato, arun, ginger, and their distinguishing characters.
10. Adventitious roots such as on banyan tree, jowar, wheat and creepers.
11. Study of flowers, as regards the arrangement of parts, colour, smell and the time of opening.
12. Method of preparing manures. Cow-dung manure and urine earth.

N. *B.*—Pupils will be required to work in the fields, and carry out all operations in growing crops.

Practical.

1. Yoking bullocks to bakhar and ploughs, and straight driving.
2. Growing of suitable crops of the tract. Cultivation in detail from preparation of the land to threshing and cleaning of grain of some of the locally grown rabi and kharif crops.

3. Working of all necessary implements used in raising field and garden crops. Hoes, seed-drills, ridging-ploughs and cultivators.
4. Cultivation of garden crops—chillies, sugar-cane, potato, arun, ginger, turmeric, peas etc.
5. Storing of cow-dung in pits and conservation of urine by urine earth system.
6. Growing sann hemp for green manuring.
7. Manuring the fields with cow-dung and urine earth.
8. Green manuring with sann hemp for garden crops and rice if locally grown.
9. Use of liquid manures.
10. Rotation practised on the farm to be demonstrated.
11. Collection of flowers and their classification according to parts.
    Observation of which insects visit the flower and what they do there.
12. Horticulture.
    Propagation of plants :—
    (*a*) Guavas by "Ghootee".
    (*b*) Oranges and roses by "budding."
    (*c*) Mangoes by "enarching" and "grafting".
13. Planting of propagated plants :—
    (*a*) Lay out; (*b*) digging of pits; (*c*) filling and manuring of pits; (*d*) planting of plants; (*e*) spacing of plants according to size;

(*f*) Irrigation; (*g*) Pruning of fruit trees and shrubs.

14. Field experiments to be carried out in special small plots set aside in the garden, and observations noted down in each case.
    (*a*) Rotational.
        (*i*) Same crop to be grown continuously in the same plot.
        (*ii*) Same crop to be grown in rotation with suitable crop.
    (*b*) Cultivated and bakhared *versus* cultivated and trampled plots in black soil. Observation to be made during rains. To explain absorption and importance of frequent stirring during rains and conservation of moisture at the end of the season for rabi crops.
    (*c*) Growth of plants to be observed in surface and subsoils, plants to be grown in pots filled with both soils.

Theoretical.

1. Storing of seed.
2. Test of good seeds :—
    (*a*) Gravitation.
    (*b*) Germination percentage.
3. Preparation of seed-bed according to the size of the seed.
    (*a*) Fine for fine seeds.
    (*b*) Coarse for big seeds.

4. Methods of irrigation.

   (*a*) Preparing beds; (*b*) flood; (*c*) principles to be kept in mind according to the texture and situation of the soil.

5. Soils.

   Comparison of surface and sub-soil.
   (*a*) Depth at which separation occurs.
   (*b*) Feel, granulation and colour.
   (*c*) Stickiness and wetness.
   (*d*) Amount of organic matter present.
   (*e*) Difference in the fertility of the surface and sub-soil.
   (*f*) Care to be taken while ploughing not to bring the sub-soil to the surface.

6. Necessity of ploughing.

   (*a*) Destruction of weeds and insects.
   (*b*) Clearing the fields.
   (*c*) Turning the soil.
   (*d*) Formation of plant food.
   (*e*) Retentive capacity of cultivated and uncultivated land.
   (*f*) Effect on rabi crops.
   (*g*) Necesssity of monsoon ploughing and constant bakharing during breaks in the rains.

7. Study of farm crops.

   (*a*) Recognition of crops grown in the locality, attention to be drawn to:—
   (*i*) Time and method of sowing.
   (*ii*) Seed rate per acre.

(*iii*) Distance between the rows.

(*iv*) Various operations performed during its growth. How and why ?

(*v*) Harvesting time.

(*vi*) Out-turn per acre.

8. Ploughs and bakhar to be studied.

(*a*) Their various parts and the work done by each.

(*b*) Comparison of working of a bakhar and a disc harrow.

(*c*) When the disc harrow is used :—to crush the clods and prepare tilth to simplify the working of a bakhar in weedy land.

9. Study of other harrows :—their work and purpose.

10. General principles to be given in the class-room regarding the ways, methods, and time of plant-propagation; oranges, mangoes and guavas.

11. Cultivation of fruit trees to be taken in details.

(*a*) Oranges. (*b*) Lemons. (*c*) Guavas. (*d*) Other fruit trees.

12. Rotation of crops.

(*a*) Its necessity. (*b*) Purpose. (*c*) Effect on fertility. (*d*) How to arrange it.

13. Detailed study of sugar-cane crop.

14. Manures in details with classifications:—
    (*a*) Plant is built up of gaseous matter and ashes. Where does each come from ?
    (*b*) The main ingredients of a manure:—nitrogen, potash. and phosphorous.
    (*c*) Effect of each on the plant growth.
    (*d*) Bulky and concentrated manures.
    (*e*) What crops can be used for green manuring. Time for green manuring.
15. Other methods of preserving the fertility of soil :—Rotation, judicious cultivation.
16. Detailed study of field and garden crops continued.
17. Plans and estimates for the construction of simple sheds and stables with practical training wherever possible.
18. Practice in the elements of smithy and carpentry necessary for mending agricultural implements.

GRADE VII.

Practical.

1. Threshing, winnowing and cleaning of crops raised after harvesting them. Fitting of a winnowing machine to clean different crops.
2. (*a*) The pupils to study the pests on the crops they have grown.
   (*b*) Preparation of insecticides and spraying.
3. Study of flowers, continued.

4. Raising of crops to be continued—field, garden and fruit.
5. Preparation of gud.
6. Experiments to be performed to show that plants give out oxygen in assimilation.
7. Dismantling and re-fitting of sugar-cane crushing mill.
8. Turnwrest and Sabul ploughing. Dismantling and re-fitting the above two ploughs.
9. Animal husbandry.
   Care of animals:—Better housing, cleanliness, proper feeding, when at light or hard work.
10. Dairying.
    Milking and preparing products from milk.
    How to judge good milkers.
    Chief points to be remembered and demonstrated.
11. Cattle diseases.
    (*a*) Treatment of ordinary cases such as wounds, inflammations, skin diseases, etc.
    (*b*) Contagious diseases.
    Observation of such animals and their treatment.
12. If possible, the pupils may run a co-operative shop in the school.
13. Farm accounts.
    The boys to keep complete account of the school farm, to work out profit and loss

per crop as well as for the whole farm on prescribed registers.

14. Field experiments to be carried out in special small-sized plots set aside in the garden and observations noted down in each case periodically, and conclusions drawn at the end of the trial.
    (*a*) Thick planting *versus* proper planting.
    (*b*) Crop grown in plot exposed to sunlight *versus* crop shaded from sunlight.
    (*c*) Observation of plant growth and water holding capacity in sandy soil *versus* sandy soil manured with humus, heavy soil *versus* heavy soil manured with humus.
    (*d*) Observation of effect of exposure to weather of soil cultivated when wet or dry.

Theoretical.

1. (*a*) Seed drills.
   (*b*) Threshing machine Olpad.
   (*c*) Winnower.
2. Pests :—
   (*a*) What are pests ?
   (*b*) Natural and artificial means of checking them.
   (*c*) Harmful and beneficial insects.
3. Flowers and fruits :—
   (*a*) Flowers studied in detail with reference to male and female elements.

(*b*) Pollination as a means of fertilization and the agencies of pollination.
(*c*) Division of fruit into dehiscent, indehiscent, dry and pulpy.
(*d*) Means of seed dispersal.

4. Exhalation of oxygen from the leaves.
(*a*) Nutrition.
(*b*) Green colour and the effect of sunlight. Transpiration—Means of decreasing and increasing transpiration.

5. Implements.
(*a*) Sugar-cane crushing mill.
(*b*) Fodder cutter.
Cost, out-turn and working expenses of each.

6. Special method of eradicating.
(*a*) " Kans " :—bunding the fields, uprooting in rains by deep ploughing followed by constant bakharing during breaks in rains and after.
(*b*) " Nagarmotha " :—by growing sann crop in the field.
(*c*) " Dub " :—by deep ploughing in hot weather and constant bakharing during breaks in rains and after.

7. Effect of deep and shallow ploughing on perennial weeds and insects. Deep and shallow ploughing according to the soil and season. When and with what purposes the spring and spike tooth harrows are used.

8. Cattle breeding.
   Principles of breeding and rearing of cattle. Selection of good bull, suitable cows; cross and in-breeding and proper selections.

9. Cattle diseases.
   (*a*) To distinguish a sick animal from a healthy one.
   (*b*) Segregation of sick animals.
   (*c*) Care of sick animals. Housing and feeding. General precautions to be taken to protect one's herd from contagious diseases.

10. Detailed study of field and garden crops continued.

11. Co-operation.
   (*a*) Instruction in principles of co-operation in a village.
   (*b*) Its advantages.

12. Farm account.
   (*a*) Stock book.
   (*b*) Classified contingent register.
   (*c*) Cash book.
   (*d*) Diary.
   (*e*) Muster-roll, weekly and monthly.
   (*f*) Ledger.

13. *Preparation of final yearly accounts and how to work out profit and loss.*

N. B.—Revision of the portions taught in the previous classes in soils, cultivation, manures, crops, etc. The pupils would continue to work

in the field throughout the year in crops grown by them.

CROPPING TO SUIT COTTON TRACT WITH LIFT IRRIGATION FACILITIES

(Substitution of other staple crops to suit local conditions not likely to affect the revenue).

1. Acreage	... 20	acres
2. Cropping :—		
Sugar-cane	... 2	,,
Fruit	... 4	,,
Garden Crops	... 6	,,
Cotton, jowar, groundnut	... 8	,,
Total	... 20	,,

		Rs.
3. Total receipts	...	1,910
4. Total recurring expenditure including depreciation	...	910
5. Net profit	...	1,000
6. Requirement of non-recurring nature	...	6,000
7. Requirement of recurring nature for the first year	...	900
8. Total amount required to start	...	6,900

No further amount will be required to keep the plot running from year to year unless there is a crop failure due to unforeseen circumstances.

Where irrigation is available from a canal, the non-recurring expenditure can be reduced by Rs. 1,450. Saving in labour is expected to meet irrigation charges. In C. P., these are Rs. 15 for cane and Rs. 10 for garden crops.

PROPOSED CROPPING PROGRAMME TO SUIT COTTON TRACT WITH LIFT IRRIGATION FACILITIES.

Details of expenditure

Crop	Area	Labour	Other Charges	Land Revenue	Total Expenditure	Average Out-turn per acre	Total Receipts Expected	Net Profit
Cane	2.00	164	130	6	300	200	400	100
Fruits	4.00	210	190	12	412	150	600	188
Garden Crops	6.00	210	250	18	478	125	750	272
Cotton, jowar, groundnut in equal areas	8.00	52/6/8	45/9/4	22	120	20	160	40
Total	20.00	636/6/8	615/9/4	58	1,310		1,910	600
Deduct saving due to boys' labour		400			400			400
	20.00	236/6/8	615/9/4	58	910		1,910	1,000

If land revenue is not charged, it will go to make up a sinking fund to meet any unforeseen contingencies. Fruit area may take some years to bear but during this period, other garden crops can be grown in between the plants and income maintained.

List of Requirements of a non-recurring nature for the plot

S. No.	No. required	Name of articles	Cost Rs.
1.	20	Acres of land	2,000
2.		Good well with enough supply of water for 2 Rahats	750
3.		Fencing	500
4.	2	Rahats	700
5.	3	Pairs of Bullocks	350
6.	1	Turnwrest plough	35
7.	2	Jat ploughs	24
8.	2	Bakhars	10
9.	1	Planet Junior Hoe	40
10.	4	Ordinary Hoes	10
11.	1	Ridging plough	45
12.	1	Planker	5
13.	2	Country ploughs	4
14.	1	Argara	4
15.	1	Nari	3
16.	3	Yokes	4
17.	4	Shivlas	2
18.	2	Carts	80
19.	4	Chains	8
20.		Ropes etc.	10
21.	1	Hut for bullocks with room for implements and cattle	300
22.	1	Sprayer	50
23.	12	Phawaras	12

S. No.	No. required	Name of articles	Cost Rs.
24.	6	Pickaxes	9
25.	12	Sickles	6
26.	12	Picks	6
27.	12	Khurpas	6
28.	12	Weeding Forks	18
29.	2	Balances with weights	10
30.	1	Kodo measure	4
31.	1	Augur	2
32.	1	Basula	2
33.	1	Bindhna	1
34.	1	Axe	1
35.	2	Crow-bars	5
36.	6	Digging forks	30
37.	2	Secateurs	10
38.	6	Budding knives	18
39.	6	Pruning knives	12
40.	6	Ghamelas	6
41.	1	Winnower	160
42.	1	Cane crushing mill	150
43.	1	Pan	30
44.	1	Olpad Thresher (where wheat will be grown)	45
45.	2	Cows	80
46.		Feed of bullocks and cost of plants etc. for the first year	300
47.		Miscellaneous	50
		Grand Total Rs.	5,910

The total investment of non-recurring nature required works out at Rs. 5,910 or in round figures Rs. 6,000. The land value has been calculated at Rs. 100 per acre. It is possible to get land cheaper nearer towns.

An additional provision of Rs. 900 to meet recurring expenditure for a year would be enough to get the plot into running order.

A SEVEN YEARS' COURSE OF SPINNING AND WEAVING AS THE BASIC CRAFT

1. The course has been divided into two parts :

(*a*) A course of spinning,

(*b*) A course of weaving.

2. The first five years of the course should be devoted to spinning, and the last two years to weaving with an elementary knowledge of carpentry and black-smithy correlated to the craft.

3. Each year has been divided into two terms as this will be a better record of the child's progress.

4. The processes of ginning and cleaning cotton should be introduced into schools only to serve as practice lessons. All the cotton used in the schools should be cotton ginned on the handginning charkha, except the quantity of cotton necessary for the practice work in the above two processes. For this purpose it will

be necessary to have clean cotton picked from the fields, *i. e.*, cotton free from leaves and insects.

5. Senior students should prepare slivers for the juniors who cannot card for themselves.

6. It should be a matter of special attention on the part of the teacher that there should be no wastage of yarn (from breaking, etc.) from the very earliest stage in the processes of spinning, whether on the takli or on the charkha. 10% wastage is, however, usually allowed (including 5% in carding), prices of yarn being calculated so as to cover this. In any case, therefore, our wastage must not exceed this limit.

7. When the count of the yarn produced is 8 to 12 or less, the cotton used should not be of a lower quality than *rozium*. When the yarn produced is of 13 counts or upwards, only cotton of a longer fibre such as Veram, Surati, Cambodia, Jayvant or Punjab-American should be used.

8. The time given to correlated craft training should be three hours and twenty minutes per day, and the total number of working days in the year, 288 (on the basis of 24 per month).

9. The speed which is expected at the end of the half-yearly term, and which will be used as a test, is applicable only for the specified time of the test. The daily speed given

represents the average daily speed for 3 hours 20 minutes' work.

10. 25% deduction has been made from the total estimated output for absences due to illness and other causes.

GRADE I: FIRST TERM

SPINNING

1. The following processes should be taught during this term:—

a. Cleaning cotton.

b. Preparing slivers from carded cotton.

c. Piecing.

d. Spinning on the takli with the right hand;
With the fingers;
On the leg above the knee;
On the leg below the knee.

e. Spinning on the takli with the left hand, but the twist to be as the right hand twist.
The three methods as above.

f. Winding yarn on to the winder.

2. Spinning on the takli should be taught alternately with right and left hands.

3. The speed at the end of six months, including winding, should be 1½ lattis (hanks of 160 rounds) of 10 counts yarn in three hours.

4. The average daily speed for the six months should be ¾ latti of 10 counts yarn in three hours—*i. e.* the total production of 144 days will be 27 goondis (hanks of 640 rounds),

weighing one seer 6 chataks. Wages at the rate of -/12/- per seer, excluding carding, will be Re. 1/-/6.

GRADE I: SECOND TERM

1. In this term carding should be taught.

2. At the end of six months the speed of carding (including the making of slivers) should reach 2½ tolas an hour.

3. At the end of six months the speed of spinning on the takli, including winding, should be 2 lattis of 10 counts yarn in three hours.

4. The average speed of spinning on the takli for this term, including carding, should be 1¼ lattis of 10 counts yarn in three hours. The total production will be 45 goondis weighing 2¼ seers. Wages @ Rs. 1-6-0 per seer (including carding) will be Rs. 2-8-6.

PROBLEMS CONNECTED WITH THE MECHANICS OF SPINNING ON THE TAKLI

1. If a greater amount of yarn is wound on to the takli, why is the rate of revolution of the takli reduced ?

2. If the yarn is loosely wound on to the takli, why does the rate of revolution of the takli decrease ?

3. Why do we apply ash while spinning in order to increase the rate of revolution of the takli ?

GRADE II : FIRST TERM

SPINNING

1. Ginning should be taught in this term.

2. At first, ginning should be taught with a wooden plank and a steel rod. When the speed has reached 1 chatak in ½ hour the village hand-gin should be introduced.

3. The speed of ginning at the end of 6 months should reach 20 tolas of cotton in ½ hour.

4. The speed of carding (including the preparation of slivers) at the end of the term should reach 3 tolas per hour.

5. The speed of spinning on the takli (including winding) at the end of the term should reach 2¼ lattis of 10 counts yarn in 3 hours.

6. The daily average rate of spinning on the takli (including carding) for the term, should reach 1¾ lattis of 12 counts yarn in three hours. The total production will be 63 goondis weighing 2 seers 10 chataks. Wages @ Rs. 1-6 per seer (including carding) will be Rs. 3-9-9. Adding -/4/- for ginning, the total wages will be Rs. 3-13-9.

GRADE II : SECOND TERM

1. In this term, students should be taught spinning on the Yeravda Charkha, with double-grooved spindle-holders (Modias).

2. Spinning on this charkha should be taught with the right and left hands alternately.

3. The speed of carding (including the making of slivers) at the end of the term, should reach 3½ tolas per hour.

4. The speed of spinning on the takli (including winding), at the end of the term, should reach 2¼ lattis of 12 counts yarn in three hours.

5. The speed of spinning on the charkha (including winding) at the end of this term, should reach 3¾ lattis of 16 counts yarn in three hours.

6. During this term the processes of calculating the count of the yarn produced should be taught. The child should be able to do the work both practically and with the correlated theoretical knowledge.

7. The daily average speed of spinning (including carding), for the term, on the charkha should be 2½ lattis of 14 counts yarn in three hours. The total production will be 90 goondis weighing 3 seers 3½ chataks. At the rate of Rs. 1-10 per seer (including carding) the wages will be Rs. 5-3-6. Adding -/4/- for ginning, the total income becomes Rs. 5-7-6.

PROBLEMS CONNECTED WITH THE MECHANICS OF SPINNING ON THE CHARKHA

1. The advantages and disadvantages of keeping the spindle of the charkha parallel to the ground or at an angle.

2. What should be done in order that the pulley may revolve exactly in the middle of the modia ?

3. Which parts of the charkha should be oiled ?

4. Why should the charkha be oiled ?

5. Why does the charkha move more smoothly after oiling ?

Here the principle of friction should be explained to the children. Also, they should notice the effect of oiling the hinges of a door, a swing, and the pulley for drawing water from a well.

GRADE III : FIRST TERM

SPINNING

1. In this term the students should be taught to recognize the different types of cotton. They should also learn to estimate the length of fibre and to understand the count of yarn which can be produced from each different type of cotton.

2. At the end of the term, the rate of carding (including the preparation of slivers) should reach 4 tolas an hour.

3. At the end of the term, the speed of spinning on the takli (including winding) should reach 2½ lattis of 12 counts yarn in three hours.

4. At the end of this term, the speed of spinning on the charkha (including winding) should reach 3¾ lattis of 20 counts yarn in three hours.

5. The daily average speed of spinning (including carding) of the term will be 2½ lattis of 20 counts yarn in three hours. The total production will be 90 goondis weighing 2¼ seers. Wages at the rate of Rs. 2-4-0 per seer (including carding) will be Rs. 5-1-0.

GRADE III : SECOND TERM

1. At the end of the term the speed of spinning on the takli (including winding) should reach 2¾ lattis of 12 counts yarn in three hours.

2. At the end of the term the speed of spinning on the charkha (including winding) should reach 4½ lattis of 20 counts yarn in three hours.

3. The daily average speed of spinning for the term (including carding) will be 3¼ lattis of 20 counts yarn in 3 hours. The total production will be 117 goondis weighing 2 seers 14½ chataks. Wages @ Rs. 2/4/- per seer (including carding) will be Rs. 6-8-9.

PROBLEMS CONNECTED WITH THE MECHANICS OF SPINNING AND CARDING

1. What is the advantage of the moving modia ?

2. What is the reason of slippage ? and how should it be prevented ?

3. What is the effect on carding of a tightly or loosely strung gut on the carding bow ?

4. What are the uses of the springs in the Yeravda Charkha ?

GRADE IV : FIRST TERM

SPINNING

1. During this term the students should be taught the following subjects with the correlated theoretical knowledge:—

a. How to find the strength and evenness of the yarn;

b. How to calculate the resultant speed by the formula S/C where S is speed and C is count.

2. In this term the students should learn to repair the hand-gin and the carding bow.

3. At the end of six months the speed of spinning on the charkha (including winding) should reach 4½ lattis of 24 counts yarn in three hours.

The daily average speed of spinning (including carding) for this term should reach 3½ *lattis*

of 24 counts yarn in three hours. The total production will be 126 goondis weighing 2 seers 10 chataks. Wages @ Rs. 2/14/- per seer (including carding) will be Rs. 7-8-9.

GRADE IV : SECOND TERM

1. In this term the students should be taught the following subjects:—

a. A knowledge of the different parts of the Yeravda Charkha and how to repair it.

b. The preparation of bamboo taklis.

2. At the end of the term, the speed of spinning on the takli (including winding) should reach 3 lattis of 14 counts yarn in three hours.

3. At the end of the term, the speed of spinning on the charkha (including winding) should reach 5 lattis of 28 counts yarn in three hours.

4. The daily average speed of spinning (including carding) for the term should be 3½ lattis of 28 counts yarn in 3 hours. The total production will be 126 goondis weighing 2¼ seers. Wages @ Rs. 3/10- per seer will be Rs. 8-2-6.

PROBLEMS CONNECTED WITH THE MECHANICS OF SPINNING

1. The speed of spinning is increased by a pulley of a smaller diameter. But why is it more difficult to wind the yarn ?

2. What should be the distance between the centres of the two wheels of the Yeravda Charkha ?

3. Why is the actual number of revolutions less than the calculated number of revolutions? (slippage).

GRADE V: FIRST TERM

SPINNING

1. In this term the students should be taught the Andhra method of ginning and carding and spinning yarn to 40 counts; but the spinning should continue to be on the Yeravda Charkha.

2. At the end of the term the speed of spinning (including winding) should reach 2 lattis of 40 counts yarn in 2 hours.

3. In this term the students should also be taught to spin on the Magan Charkha.

4. The speed of spinning on the Magan Charkha (including winding) at the end of the term should reach $2\frac{1}{2}$ lattis of 24 counts yarn in an hour.

5. The daily average speed of spinning (including ginning and carding) for the term on the Yeravda Charkha should reach $1\frac{1}{4}$ lattis of 40 counts yarn in 2 hours, and on the Magan Charkha (including carding) $1\frac{1}{2}$ lattis of 24 counts yarn in 1 hour,

6. The total production for six months will be 45 goondis of 40 counts yarn weighing 9 chataks and 54 goondis of 24 counts yarn weighing 1 seer 2 chataks.

7. The wages for 40 counts yarn @ Rs. 6/4/- per seer will be Rs. 3-8-3, and for 24

counts yarn @ Rs. 2/14/- per seer (including carding) will be Rs. 3-3-9. The total earnings for this term will be Rs. 6/12/-

GRADE V : SECOND TERM

1. In this term the student should be taught to spin yarn to 60 counts.

2. The following subjects should be taught with the correlated theoretical knowledge:

(*a*) The length of yarn necessary to produce 1 yard of cloth;

(*b*) The necessary twist required in one inch of yarn for a particular count.

(*c*) The ratio of the revolution of the spindle to the revolution of the wheel.

3. In this term the students should also be taught how to straighten the spindle.

4. During this term the students should also gain a comparative knowledge of the different types of charkha, such as the Yeravda Charkha, the Magan Charkha and the Savli Charkha.

5. At the end of the term the speed of spinning on the takli (including winding) should reach 3 lattis of 16 counts yarn in three hours.

6. At the end of the term the speed of spinning (including ginning and carding) 60 counts yarn should reach 2 lattis in 2 hours, and the speed of spinning (including carding) 28 counts yarn on the Magan Charkha should reach 3 lattis in one hour.

7. The daily average speed of spinning during this term will be 1¼ lattis of 60 counts yarn and 2 lattis of 28 counts yarn. The total production will be 45 goondis of 60 counts yarn weighing 6 chataks and 72 goondis of 28 counts yarn weighing 1 seer 4½ chataks.

8. The wages for 60 counts yarn @ Rs. 11/4/0 per seer will be Rs. 4-3-6, and the wages for 28 counts yarn @ Rs. 3-10-0 per seer will be Rs. 4-10-3. The total earnings will be Rs. 8-13-9.

PROBLEMS CONNECTED WITH THE MECHANICS OF SPINNING

1. Why does the pulley lean on the slanting side of the spindle ?

2. If the rate of revolution of the spindle is to be increased, which should be increased : the diameter of the driving wheel or of the intermediate wheel ?

3. Uses of the different kinds of mal (cotton, gut and leather). Principle of belting.

4. Uses of jyotar.

5. Where should the handle of the carding-bow be fixed ? Principle of balance.

6. The advantage of keeping the two mals of the Savli Charkha parallel.

7. Where should the handle be kept in the wheel of the Yeravda Charkha, according to the grain of the wood ?

8. What is the effect and difference in the friction of wood on wood and wood on iron?

9. Where should the pulley be set in the spindle?

10. The different effect of brass, ball iron and wood bearings on the axle of the wheel, from the point of view of friction, with regard to iron axles and wooden axles.

Income per student for five years.

First Year	Rs.	3	9	0
Second ,,	,,	9	5	3
Third ,,	,,	11	9	9
Fourth ,,	,,	15	11	3
Fifth ,,	,,	15	9	9
Total income for five years	,,	55	13	0

Reckoning a deduction of 25 % the total income for five years stands at Rs. 41-13-9.

WEAVING SECTION
GRADES VI & VII

1. The craft of weaving is so wide in scope that it is not possible to give the students a complete training in this craft in two years. Two alternative courses have been suggested. A school may provide for both the courses allowing the student to choose one. In either case, however, the course of two years will serve only as an introduction, and a student who wishes to

have a complete knowledge of this handicraft should continue his training after this period.

2. At this stage the student will be only 13-14 years old. The course described is therefore of an elementary nature.

3. At the end of five years the student should have a fairly high knowledge of spinning. It has, therefore, not been included in the school time-table, but the students should continue to spin at home, and the school should make the necessary arrangements for the students to get the proper value of yarn produced at home— either in money or in cloth.

GRADE VI—WEAVING

First Year

1. The course of weaving has not been divided into half-yearly terms, but into two terms of a year each, in consideration of the special nature of the craft of weaving.

2. The following processes should be taught to the student in the first year :—

(*a*) Winding.
(*b*) Reeling.
(*c*) Piecing.
(*d*) Warping (on the warping frame).
(*e*) (*i*) Spreading and distributing.
(*ii*) Sizing.
(*f*) Double-warp weaving (on the hand-loom).

3. At the end of the year the speed in the above processes should be as follows :—

(*a*) Winding	=	5 goondis in an hour.
(*b*) Reeling	=	3 goondis in an hour.
(*c*) Piecing	=	2½ punjams (60 holes of a reed) in an hour.
(*d*) Warping	=	2½ punjams (60 holes of a reed) in an hour.
(*e*) (*i*) Spreading & Distributing (*ii*) Sizing		Both the processes in 3 hours.
(*f*) Weaving (with filled bobbins)		2 yards in 3 hours.

4. In a year the total length of cloth woven by each student with all the processes should be 108 yards.

5. Wages at the rate of Rs. 0-12-6 per piece of 10 yards will be Rs. 8-7-0

GRADE VII—WEAVING

Second Year

1. In this year, too, the student should continue the training of double warp weaving—but he should also be taught pattern-weaving such as honey-comb towels, coloured coatings, etc.

2. During this year, the student should learn to calculate, with the correlated theoretical knowledge, the particular count of yarn necessary for a particular type of punjam.

3. The speed of weaving at the end of the year (on the fly-shuttle loom with filled bobbins) should be 3½ yards in three hours.

4. The total amount of cloth woven in the year by each student should be 216 yards. Wages at the rate of Rs. 0/1/3 per yard will be Rs. 16/14/-

The income per student for two years

	Rs.	a.	p.
First Year	8	7	0
Second Year	16	14	0
Total	25	5	0

Deducting 25%, the income for two years amounts to Rs. 18-15-9.

TAPE AND DUREE WEAVING
GRADE VI

First year

1. In this department the students should be taught the following processes :

Twisting the yarn.
Rope-making.
Preparing the warp.
Preparing the heddles.
Weaving tapes, durees, asans and carpets of different designs.

2. In the first year, the students should be taught to weave white and coloured tapes, lace, white and coloured asans, and white durees.

3. Different rates of wages are paid for the weaving of tapes, asans and durees, and the wages are higher than the wages for the weaving of ordinary cloth. However, for the purpose of calculation, the wages for weaving for this year have been reckoned as Rs. 8/7/-.

GRADE VII

Second Year

1. During this year the students should be taught how to weave coloured durees and carpets. The whole year will be devoted to this work as the durees and carpets will be of different designs.

2. The wages per student for the year have been reckoned as the same as the wages for ordinary weaving *i. e.* Rs. 16/14/-.

PROBLEMS CONNECTED WITH THE MECHANICS OF SPINNING & WEAVING

1. The principles of lever.

The uses of the different kinds of levers should be explained by practical work in connection with the hand-loom.

The uses of the lever in the loom for shedding motion.

2. Principles of wedge and Helical tooth gearing wheel practically, in connection with the ginning machine.

3. What will be the effect on the count of yarn and speed of spinning, if the spindle of the takli be made of wood instead of iron ?

4. What will be the effect on the speed of spinning if the disc of the takli is light or heavy ?

5. What is the relation, and proportion in size and length, of the spindle and the disc ?

6. What should be the position of the disc on the takli ?

7. Advantages and disadvantages of the U and V shaped pulleys.

8. Necessary information re : deflection of beams. What is the effect of graining on strength of wood ?

9. Principle of crank in connection with the Magan Charkha.

GENERAL MECHANICS

1. The advantage of supporting the upper wheel of the grinding mill on the central pin. A lever can be used for increasing or decreasing the pressure on the lower wheel.

2. The pulley used for drawing water from the well is a kind of lever.

3. What is the difference in strength between cantiliver, vertical and sloping pillars ?

4. The pendulum of the clock.

5. Resultant of forces—to be taught by practical application.

Estimate of the floor space required for a building of a complete school with seven classes having spinning and weaving as the basic craft.

1. Five spinning rooms for grades I to V	600 sq. ft. x 5 =3000 sq. ft.
2. Carding space for 150 pupils— 20 pupils working at a time	40 sq. ft. x 20 =800 sq. ft.
3. Weaving—for Grades VI & VII 60 pupils—20 looms	1800 sq. ft.
4. Store-rooms:—	
Weaving	600 sq. ft.
Slivers	150 sq. ft.
5. Two classrooms	600 sq. ft.
6. Library, office, and school store	600 sq. ft.
7. Veranda	1150 sq. ft.
8. Walls	1500 sq. ft.
	11,000 sq. ft.

TOTAL INCOME FOR SEVEN YEARS

Spinning	Rs.	41	13	9
Weaving	Rs.	18	15	9
Total	Rs.	60	13	6

The teacher's salary has been calculated at the rate of Rs. 25 per month.

Total salary of the teacher for seven years Rs. 2,100

Reckoning 30 students per teacher, the total income for seven years is Rs. 1,825

GENERAL SUGGESTIONS

Although this scheme has been prepared in fair detail, it cannot be considered the final scheme, and many improvements can be made on it. The following important points, however, might be noted:

1. This scheme solves, to a great extent, the problem of the teacher's salary, which has been reckoned at an average figure of Rs. 25 per mensem.

2. A total deduction of 25 per cent on the full number of working days has been estimated.

3. Since we have to use the craft as a means of education, and not only to teach it as an industry, the speed of work has been reckoned as slower than the speed ordinarily attained.

4. The wages have been reckoned on the basis of the wages paid by the Maharashtra Branch of the All-India Spinners' Association in 1937.

5. It may be assumed that the actual income will exceed the figures given here, and can on no account be less. If it falls below the estimate, it may be taken as a sure indication of inefficiency either in the staff or the implements.

6. The articles of equipment noted down in the lists given should be used as centres of interest for the general education of the student.

7. The test to see whether a student has attained the standard required at the completion of the course, will be the rate of earning—working an 8 hours day—for two months, *i. e.* 48 working days. If he can earn Rs. 12 (at the rate of 4 as. per day) he should be considered to have passed the test.

8. This scheme provides that on completion of the course every student will become a self-supporting unit.

9. During the first year, spinning on the takli can and should be taught on the mass drill method.

10. Music should be taught with spinning on the takli or the charkha. This will add to both the pleasure and the speed of spinning.

11. It is expected that the second period of seven years will bring more successful results than the first period of seven years.

12. It will be possible for boys to remain at school for a longer period only if they are able to render some financial contribution to the home. The school, therefore, should make arrangements for them to undertake spinning at home, and should see that the boys receive the proper wages in return.

List of Accessories : Spinning department.

Spinning

	Rs.	as.	p.
Takli	0	1	9
Winder	0	1	0
Takli-case	0	2	0
Yeravda Charkha	2	8	0
Charkha Winder	0	2	0
Oil-can	0	1	0
Piece of black coloured cloth 27" × 9"	0	2	0
Miscellaneous	0	1	3
Total Rs.	3	3	0

Ginning

	Rs.	as.	p.
Wooden Plank 4" × 6" × 1"	0	1	0
Rod	0	4	0
Village Gin	1	10	0
Jaw-bone of a fish	0	4	0
Total Rs.	2	3	0

Carding

	Rs.	as.	p.
Yuddha-pinjan (Little bow)	0	8	0
Striker	0	2	0
Wooden plank for making slivers	0	4	0
Handle	0	3	0
Rod for making slivers	0	1	0

Gut etc.	0	7	0
Mat	0	2	0
Andhra bow	0	5	0
Total Rs.	2	0	0

Tools etc.

Hammer	0	7	0
Anvil	0	8	0
File	1	0	0
Chisel	0	9	0
Small saw	0	8	0
Plane	1	0	0
Drill-Machine	2	12	0
Knife	0	4	0
Scissors	0	6	0
Screw-driver	0	6	0
Balance (small) with weights 1/16 tola to 2 tolas	2	0	0
Balance (large) with weights ½ ch. to 1 seer	2	14	0
Total Rs.	12	10	0
Grand Total Rs.	20	0	0

Note : We have given a rough estimate of tools and accessories. Therefore the prices may vary slightly.

List of Accessories for the Weaving of cloth, durees and tapes.

Tape Weaving

	Rs.	as.	p.
Twisting wheel	1	8	0
Heddles frame	0	8	0
Beater or striker	0	1	0
Total Rs.	2	1	0

Weaving of asans & durees

	Rs.	as.	p.
Heddles frame	0	12	0
Fork	0	8	0
Seat or rest, supports, props, etc.	0	12	0
Total Rs.	2	0	0

Warping

	Rs.	as.	p.
Distaff or chakri	0	4	0
Winder	0	1	0
Spool	0	0	6
Tin bobbins	0	12	0
Warping wheel	1	8	0
Warping frame	2	0	0
Buckets	0	7	0
Ropes etc.	0	7	0
Total Rs.	5	8	0

Sizing

	Rs.	as.	p,
Poles of teak-wood	3	4	0
Poles of bamboo	0	8	0
Two brushes	5	0	0
Total Rs.	8	12	0

Weaving

	Rs.	as.	p.
Reeds	3	0	0
Hand-loom	1	8	0
Fly-shuttle loom	7	0	0
Roller	1	8	0
Hand-loom shuttle	0	4	0
Fly-shuttle	0	8	0
Beam	2	8	0
Level bottle	0	12	0
Yard-stick	0	3	0
Poles etc.	1	0	0
Thick ropes etc.	1	8	0
Total Rs.	19	11	0

Making Heddles Frame

	Rs.	as.	p.
Reel	1	0	0
Cylinder & wooden pins	0	4	0
Miscellaneous	0	12	0
Total Rs.	2	0	0
Grand Total Rs.	40	0	0

This is only a rough estimate of the prices of accessories and may differ according to local conditions.

List of Accessories for Spinning, Carding and Weaving for a full school of seven grades of 30 students each

	Rate	Cost
	Rs. as. p.	Rs. as. p.
1. 125 Folding Charkhas	2 8 0 ea.	312 8 0
2. 30 Carding Sets, including all accessories, but excluding Andhra bow	1 11 0 ea.	50 10 0
3. *50 Taklis and 50 winders	0 2 9 per pr.	8 9 6
4. 5 Hand Gins	1 10 0 ea.	8 2 0
5. 15 Wooden Boards and brass rods	0 5 0 per pr.	4 11 0
6. 5 Magan Charkhas	6 0 0 ea.	30 0 0
7. 5 Savli Charkhas	1 4 0 ea.	6 4 0
8. Carpentry Tools		25 0 0
9. 20 Looms with all accessories	25 0 0 ea.	500 0 0
10. Miscellaneous		54 3 6
	Total Rs.	1,000 0 0

* Each student is expected to buy taklies and winders. But if a school proposes to supply these accessories it will have to spend about Rs. 125/- more over this head.

NOTE:—The above prices are approximate, and are subject to market fluctuations and to prices varying from district to district.

Working Capital	Rs.	as.	p.
Stock of Cotton	300	0	0
Stock of Spinning Wheels and other Accessories	100	0	0
Stock of slivers, weaving materials, etc.	100	0	0
Total Rs.	500	0	0

A SEVEN YEARS' COURSE OF CARD BOARD, WOOD AND METAL WORK AS THE BASIC CRAFT

The course has been divided into two parts:—

(*a*) A course of card-board work.
(*b*) A course of wood and metal work.

1. As children under nine are not able to handle hard materials such as wood or metal, or the more difficult tools necessary for wood or metal work, card-board work should be taught as the basic craft for the first two grades of the course.

2. Wood work should begin in grade III and work with metals used in connection with wood work should be introduced in grade V.

3. In grades VI and VII the pupil may choose either wood or metal work, according to his natural inclination.

4. There is also an optional course of wood and metal work as basic craft for grades VI and VII, and an optional course of card-board work for three months in grades VI and VII.

5. In order to draw the fullest educative value from card-board, wood and metal work as a basic craft, the following conditions must be fulfilled:—

(i) The system of instruction to be employed should be methodical, and must be imparted by trained teachers in a systematic way. Skilled artisans cannot be expected to convey to the students the fullest educative value and implication of the training in handicraft.

(ii) A well-chosen pedagogical series of models of exercises should be furnished as a guide for instruction. These models must be useful objects which can be used in daily life, but they must also be simple and beautiful from the aesthetic point of view. Therefore this series of models must, from its very nature, vary and be elastic in the light of its utility in rural and industrial areas.

CARD-BOARD WORK

GRADE I

Time required:—2 hours per day.

1. *Practical*—A series of exercises which involve the modification of materials such as card-board, paper and cloth, by means of one or more tools or instruments in a prescribed way and for a particular end. Thus the method embraces say 20 models, of which at least eight must be made by every pupil during the first year of schooling:—

(1) Routine board (for school or class use).
(2) Box for collection of specimens (nature study work).
(3) Simple albums for
    (*a*) History work.
    (*b*) Nature-study work.
(4) Blotting-pad.
    (*a*) simple.
    (*b*) double.
    for use at school and also for sale.
(5) Portfolio.
(6) Note-book binding.
(7) Book-carrier.
(8) An extra model.

2. *Theoretical.*

(1) Tools and their uses.
(2) Simple measurements involving the use of
    (*a*) inch, foot and the metric system.
    (*b*) weights—seers, chataks and tolas.

(3) Counting—simple problems in addition and subtraction.
(4) Recognition of simple geometrical forms.

CARD-BOARD WORK

GRADE II

Time required:—2½ hours per day.

DRAWING: Introduction; necessity for drawings; method of preparing such drawings.

Use of the following instruments:— Rule, set-square, compass.

Parallel, perpendicular, oblique lines, and lining in.

Circle—centre, radius, circumference.

Square, quadrangle, sexagon, octagon.

Graphical representation of the children's own work.

Practical

1. Colour decorations on hand-made paper for dozen sheets of paper.

2. Execution of any eight of the following models: —

(*a*) Sliding box—for keeping brushes, pencils, pens etc.

(*b*) Slanting quadrangular tray for keeping nibs, pencils, pens etc.

(*c*) Sexagonal tray for the same purpose; paper mounting.

(*d*) Sexagonal box with cover (cloth mounting).

N. B. Models of Nos. (*c*) and (*d*) should be given to the pupil to serve as models in his future private activities.

(*e*) Box with hinged cover.

(*f*) Sexagonal box with hinged cover.

(*g*) Blotting pad.

(*h*) Portfolio.

(a) simple.

(b) complex.

(*i*) Round box.

(*j*) Two boxes of different kinds.

(*k*) Album, simple, with pad, leather covering.

WOOD-WORK

GRADE III

Time required:—3½ hours, with an interval of 10 minutes.

Theoretical and Practical work combined.

1. Tools and their uses.

2. Execution of at least seven exercises (selection must be the child's—design to be supplied).

3. Two extra models from the child's own design.

N. B.—In schools belonging to rural areas, the following models are suggested :—

(*a*) Handle of khurpi.

(*b*) Ladder.

(*c*) Small stool for water vessel.

(*d*) Stand for filtering water.
(*e*) A small desk for writing and reading.
(*f*) (i) A small bookshelf (open), (ii) rack for keeping clothes, (iii) alna, (iv) wall rack.
(*g*) A corner shelf for keeping household things.
(*h*) A simple wooden cot.
(*i*) A wooden box according to requirements.

4. Sawing, planing, method of sizing, boring, grooving, simple joinings. All these should be taught through making the objects or exercises of the pedagogical series.

WOOD-WORK

GRADE IV

Time :—3½ hours daily, with an interval of 10 minutes.

Practical.

1. (*a*) Ten models to be executed.
   (*b*) Two additional models from the pupils' own drawing.
   (*c*) 4 kinds of joinings.
2. *Drawings and graphic representations of the exercises.*
   (*a*) How to draw lines.
   (*b*) The use of the set-square.
   (*c*) Erecting perpendiculars.
   (*d*) How to obtain various angles.

(*e*) Method of setting the compass.
(*f*) Use of the compass and drawing board.
(*g*) Use of rubber.
(*h*) Use of T-square.

3. *Orthographical projection.*
   (*a*) The dihedral angles.
   (*b*) Analysis of models.
   (*c*) Definition of the following: Point, line, angle, square, circle (centre, radius, circumference).

Theoretical.

1. Growth of trees.
   (*a*) Notes dealing with seasoning, shrinkage.
   (*b*) Parts of growing trees.
   (*c*) Seeds, germination.
   (*d*) Roots and their functions.
   (*e*) Root food in soluble form.
   (*f*) Ascending sap.
   (*g*) Evaporation from leaves.
   (*h*) Carbon extracted from air.
   (*i*) Life-period of trees.
   (*j*) Time for felling.

Practical demonstration.

Transverse section of a tree.
   (*a*) Annual ring.
   (*b*) Cause of visibility of rings.
   (*c*) Composition of rings.
   (*d*) Heart wood.
   (*e*) Sap wood.

(*f*) Bark and its use.
(*g*) Growth of bark and pith.

Mechanics of wood work.

(*a*) Matter.
(*b*) Measurement.
(*c*) Metric system: (i) fractions, (ii) rule of three.
(*d*) Weight. (Indian system as well as international and English).
(*e*) Density.
(*f*) Specific gravity.
(*g*) Force and work.
(*h*) Graphic representation.
(*i*) Parallelogram of forces.
(*j*) Resolution of forces.
(*k*) Mechanical devices.
(*l*) Levers.

Geography of Wood.

Kinds of indigenous wood.
(*a*) Soft wood. Hard wood.
(*b*) Reeds and bamboos.
(*c*) Wood-growing provinces of India.
(*d*) National income from wood.
(*e*) Export and import.

N. B.—The theoretical instruction should be imparted as much as possible through the practical performance of the work. The theoretical terms should be pointed out only while drawing after the execution of a model.

WOOD-WORK

GRADE V

Time :—3½ hours daily, with an interval of 10 minutes.

Practical.

1. Execution of ten models or exercises.
2. Two extra models from the student's own design.
3. Colouring. High polishing.
4. Preparation of polish.

Theoretical.

1. Structure of wood.
   (*a*) Carbon (C).
   (*b*) Oxygen (O).
   (*c*) Nitrogen (N).
   (*d*) Hydrogen (H).
   (*e*) Sulphur (S).
   (*f*) Protoplasm.
   (*g*) Charcoal.
2. Proper introduction of metals used in connection with wood-work.
   (*a*) Iron:—The ore, smelting. Nature of cast iron (experiment and test). Wrought iron. Conversion of cast iron into wrought iron.
   Steel. Experiments.
   Conversion of iron into steel.
   Properties of steel.
   Hardening and tempering.

(*b*) Brass. An alloy, zinc 1 part, copper 2 parts by weight.
What is an alloy? Properties of brass.
(*c*) Copper. The ore. Process of extraction.
(*d*) Zinc. The ore. Process of extraction.

WOOD-WORK

GRADE VI

Time required:—3½ hours daily, with an interval of 10 minutes.

During this year, the pupils must work mainly on a productive basis, and can choose one of the two basic crafts—wood or metal.

Wood work.

Execution of articles (useful objects which must be saleable in the market).

Theoretical..

1. Notes on the parts of tools and how they are made.
2. Notes on seasoning timber.
   (*a*) Tree containing sap.
   (*b*) Condition of wood after cutting.
   (*c*) Evaporation and shrinkage.
   (*d*) Necessity for seasoning.
   (*e*) Different methods of seasoning.
      (i) natural seasoning.
      (ii) artificial seasoning:— hot water, running stream, smoke drying.

3. Elementary knowledge of costing of the articles.

WOOD-WORK

GRADE VII

Time required:—3½ hours daily, with an interval of 10 minutes.

Practical.

1. Manufacture of articles saleable in the market and execution of commodities against local orders, if forthcoming. Each pupil should be made so efficient as to earn Rs. 5 per mensem.
2. High polishing.
3. Carving.
4. Designing.
5. Keeping accounts. Method of costing.

Theoretical.

The usefulness of wood in general.

Proposed planned model or exercise series.

GROUP A.

1. Wall-rack.
2. Propeller: (a) simple, (b) for actual use.
3. Sliding box for pencil, pen, brush, etc.
4. Stools of different kinds.
5. Writing desk.
6. Pot stand.
7. Flag stand.
8. Book stand.

9. Alnas of different kinds
10. Mallet.
11. Wooden trays of different shapes.
12. (a) Table, (b) Axe handle, (c) knife handle, etc.
13. Cot.
14. Corner shelf.
15. Small almirahs with doors.

Extra models as planned by students.

GROUP B.

1. Spoons of various shapes.
2. Wooden trays out of one piece of wood.
3. (a) File carriers.
   (b) Wall-rack for lamp.
4. Candle stands of various shapes.
5. Stands of various shapes.
6. Simple writing table.
7. Portable folding 'table.
8. Boxes of different kinds and of different types of joining.

Extra models as planned by the pupils.

GROUP C.

Small boat.
Chair.
Tables.
Clock frames.
Ladder.

Extra models as planned by the pupils.

The above lists are tentative suggestions. The models executed will vary according to local conditions and requirements.

SYLLABUS IN METAL-WORK FOR GRADES VI AND VII

The underlying principles of introducing light metal work are the same as those for other work, *viz.*, the modification of materials such as iron, copper, brass, zinc, or any other alloy by means of one or more tools in a prescribed way, for a particular end or object.

List of some of the models to be executed.

1. Simple door lock.
2. Chain lock.
3. Hinges.
4. Khurpi.
5. Various stands for iron.
6. Paper-boring instruments.
7. Caliper.
8. Soldering instrument.
9. Screw-drivers.
10. Compass.
11. Chisel.
12. Farm knife.
13. Candle-stands.
14. Book-stand.
15. Wall candle-stand.
16. Stands (of various sizes) for keeping utensils.

17. Fruit plucker.
18. Trays of different shapes and sizes.
19. Boxes.
20. Farm rake.
21. Sun-dial.

At least fifteen of the above and two extra additional objects, which must be of the pupil's own design, must be executed. They must be useful objects.

Theoretical and Practical work combined.

(*a*) Oxidising.
(*b*) Filling.
(*c*) Hardening and tempering.
(*d*) Blackening process.
(*e*) Cleaning and polishing.

AN OPTIONAL COURSE IN CARD-BOARD WORK FOR THE STUDENTS OF

GRADE VII

Those who have already taken card-board work during the first two years of the basic course should be given an opportunity of repeating the work in card-board, and of applying the higher technique acquired through their training in wood and metal work. Those who have taken other basic crafts *viz.*, spinning and weaving should also have an opportunity of learning something of card-board work.

A THREE MONTHS' COURSE IN CARD-BOARD WORK

Practical.

Series of exercises, pedagogically selected, of objects required in school, office and at home.

1. Routine board.
2. Pencil tray.
3. Pencil box.
4. Sexagonal tray.
5. Blotting pad and writing board (simple).
6. Blotting pad with case for paper.
7. Letter carrier.
8. Card-board box (standing).
9. Portfolio : (a) simple, (b) complex.
10. Boxes of different shapes.
11. Note-book binding.
12. Album.

Theoretical

1. Point, line, angle, perpendicular, parallel lines, square, circle (centre, radius, circumference).

2. Graphical representations of works or models made.

3. Measurement :—inch, foot, the metric system.

AN OPTIONAL COURSE IN WOOD OR METAL-WORK DURING THE LAST TWO YEARS OF THE BASIC COURSE

GRADES VI & VII

Time required :—3½ *hours daily, with an interval of 10 minutes.*

1. Introduction to tools :—Their use and how to handle them.

2. Introduction to drawing instruments :—Their use and how to handle them.

3. Demonstration of the use of drawing instruments on :—

Parallel, perpendicular, oblique lines.

Method of setting the compass.

Projection :—Plans, elevation, and section.

Circles :—Centre, radius, circumference.

Square, quadrangle, sexagon, octagon, etc.

4. Graphical representation of one's own work.

Practical.

1. At least 15 models to be executed by each pupil, and

2. Through models, eight different kinds of joinings.

3. Polishing.

4. Colouring.

Theoretical and practical demonstration in the following:—

1. Matter.

2. Measurement.

3. Metric system: (a) fractions, (b) rule of three.
4. Weight (Indian system as well as international and English).
5. Density.
6. Specific gravity.
7. Force and work.
8. Graphic representation.
9. Parallelogram of forces.
10. Resolution of forces.
11. Mechanical devices.
12. Lever.

List of Necessary Equipment.

Equipment for card-board work for a group of 30 Students taking the Optional Course in Grade VII.

		Rs.	a.	p.
1 Working Table	...	40	0	0
2 Almirahs	...	50	0	0
30 Knives	...	15	0	0
2 Working Benches	...	15	0	0
30 Scales	...	15	0	0
4 Iron Squares (flat)	...	5	0	0
30 Working Boards	...	45	0	0
30 Paper-Cutting Knives of bamboo or hard-wood	...	7	8	0
10 Scissors	...	4	12	0
Materials:—Paper, card-board, cloth, leather, etc.	...	60	0	0
		260	4	0

Equipment for a Group of Fifteen Beginners in the Card-Board Class.

		Rs.	a.	p.
1	Almirah ...	25	0	0
15	Knives ...	10	0	0
2	Working Benches ...	12	0	0
1	Working Table ...	12	0	0
15	Scales ...	7	0	0
2	Iron Squares ...	2	8	0
15	Working Boards ...	22	8	0
7	Scissors ...	2	0	0
17	Paper-Cutting Knives of bamboo ...	5	0	0
	Materials:—Paper, card-board, cloth, leather, etc. ...	38	0	0
		136	8	0

EQUIPMENT FOR WOOD WORK FOR A GROUP OF FIFTEEN STUDENTS TAKING THE OPTIONAL COURSE IN GRADES VI AND VII

		Rs.	a.	p.
15	Single or 8 double working benches :—framed tops, hard wood, fitted with cupboard for keeping tools, with two vices	250	0	0
15	Saws of different types	45	0	0
30	Planes	98	0	0
15	Scales or foot rules	15	0	0
15	Try squares	20	0	0
15	Knives	15	0	0
5	Screw drivers	5	0	0

1	Grinding stone	6	0	0
2	Hand drills	6	0	0
15	Mallets	15	0	0
1	Set of Bits	18	0	0
15	Gauges	15	0	0
5	Compasses	2	8	0
40	Chisels (handled)	28	0	0
1	Pincers	2	8	0
15	Iron Scrapers	15	0	0
10	Punches of different types	8	0	0
	Miscellaneous	50	0	0
	Nails, screws, wood, etc.	300	0	0
		914	0	0

MATERIALS AND EQUIPMENT REQUIRED FOR A GROUP OF FIFTEEN STUDENTS TAKING THE COURSE OF METAL-WORK IN GRADES VI & VII

			Rs.	a.	p.
3	Anvils				
15	Vices				
15	Hammers				
1	Bellows				
20	Files of different types				
1	Drill				
1	Plate cutter	(Appr.)	500	0	0
	Miscellaneous				
	Materials :—Copper, iron & brass sheets, etc.		100	0	0
		Total	600	0	0

N. B.—The above prices are only approximate, and will vary from place to place according to local conditions.

Class Rooms.

Card-Board Working Room for a group of 30 pupils.

Closed space required :—45 ft. by 25 ft.

Wood-working room.

The shape of a wood-working room depends on the arrangement of the benches. A room of 60 ft. by 24 ft. is a good size for accommodating 30 pupils at a time and 45×25 for a group of fifteen.

There should be a closed store-room attached to the working-room.

Metal-working room for a group of fifteen students.

Space required :—45 ft. by 25 ft., with a closed room.

N. B.—Card-board working room may serve the purpose of drawing work and that of a school museum.

MOTHER TONGUE AND HINDUSTANI

GRADE I.

1. *Oral Self-Expression.*

Conversation centring round names and description of different parts of the human

body, clothes, class-room, equipment and processes in craft work, natural phenomena, events in daily life.

2. *Stories.*

(*a*) Myths and legends.
(*b*) Folk-tales.
(*c*) Nature myths.
(*d*) Fables and stories of animal life.
(*e*) Stories of life in different lands.
(*f*) Tales of primitive man and life in ancient times.
(*g*) Stories of school life and family life.

N. B.—Items *e.*, *f.*, and *g.*, will also cover the syllabus in social studies.

3. *Recitation of simple poems.*

4. *Dramatization.*

5. *Ability to read simple words and sentences.*

The work in mother-tongue will be entirely oral during the pupil's first six months in school.

GRADE II.

1. *Oral Self-Expression.*

(*a*) Extension of the child's vocabulary—recapitulation of new words and expressions learnt by the children in their craft work, mathematics, nature-study and social studies.

(*b*) Descriptive self-expression:— describing objects, people and happenings within the child's environment; describing the different village crafts and occupations, fairs, festivals, etc.

2. *Recitation and dramatization.*

3. *Stories.*

A continuation of the syllabus outlined in Grade I.

4. *Reading.*

Simple books which should contain lessons on the following:—

(*a*) Life of nature.
(*b*) The child's social environment, his home, school and village.
(*c*) Health and hygiene.
(*d*) Local agencies of community welfare.
(*e*) Crafts.
(*f*) Festivals.
(*g*) Stories and legends.
(*h*) Life of children in other lands.

5. *Writing.*

Simple words and sentences.

GRADE III

1. *Oral Self-Expression.*

Continuation of the work detailed in Grade II, telling of simple stories.

2. *Reading.*

Simple books whose material should be on the same lines as those outlined in the syllabus for Grade II together with life stories of some great benefactors of mankind, *e. g.*, Buddha, Christ, Mohammad.

(*a*) Reading aloud, with special attention to clearness of pronunciation and expression.

(*b*) Silent reading of easy passages.

3. *Writing.*

(*a*) Writing of short sentences from dictation.

(*b*) Writing of simple letters, descriptions and stories.

(*c*) Daily record of weather observations.

4. *Recitation and dramatization.*

GRADE IV

1. *Oral Self-Expression.*

In addition to work outlined in Grades, I, II and III.

(*a*) Making of short speeches on a given subject in connection with craft work, social studies and general science.

(*b*) Taking part in discussions on subjects of living interest.

N. *B.*—The above two purposes can be fulfilled by starting a discussion group or a debating club for the members of grades IV and V.

2. *Reading.*

The reading material in grade IV, in addition to the topics already outlined in Grade III, should contain the following:—

(a) Stories of village crafts and craftsmen. Stories of important arts and crafts in different lands and ages, *e. g.*, building, cloth making, pottery, etc.

(*b*) Stories of great inventors and inventions.

(*c*) Stories of great discoverers and discoveries.

(*See* the syllabus in Social Studies).

(*d*) Life of people in certain typical regions of the world.

(*e*) Stories of some great benefactors and liberators of mankind, *e. g.*, Zoroaster, Socrates, Husain, Lincoln, Pasteur, Davy, Franklin, Florence Nightingale, Tolstoy, Booker Washington, Sun Yat Sen, Gandhi (to be covered in Grades IV and V).

N. B.—All these topics will be closely correlated with work in Social Studies.

3. *Writing.*

(*a*) Creative Writing:—stories, original compositions.

(*b*) Writing from dictation.

(*c*) Writing of simple and business letters.
(*d*) Keeping a daily and monthly record of individual and class progress in the basic craft, and other interesting experiences.

4. Contribution to a magazine for Junior Pupils (Grades IV and V) and preparing a news bulletin.

N. B.—Amongst other topics, this magazine should include the following:—

(*a*) A monthly record of the progress of the class in the basic handicraft.
(*b*) Daily and monthly weather reports.
(*c*) Health reports of class, family and village.
(*d*) Reports of geographical and social survey.
(*e*) Current events.

GRADE V

In addition to the work—oral, written and reading—outlined in the syllabus for Grade IV which will be continued, the following new items will be introduced:—

1. A simple and practical knowledge of the construction of the mother tongue and the function of words.
2. The use of the dictionary, the list of contents and the index, etc.
3. An introduction to Basic Hindustani, and its relation to the child's own language.

Learning of the Urdu or Hindi script whichever is not known to the child (in Hindustani speaking areas) or one of them at his or her option (in other areas). Simple conversation—Primer and first reader in Hindustani.

GRADE VI

1. *General Reading.*

Individual reading on general subjects under the guidance of the teacher, of simple books, pamphlets and articles dealing with topics outlined for Grades IV and V together with the following:—

(*a*) Recent geographical expeditions, *e. g.*, Everest, North Pole.

(*b*) Work of community welfare and community hygiene, including illustrations from other countries.

(*c*) Agriculture in India and in other lands. The life of the farmer in India and in other lands.

2. *Study of Literature.*

(*a*) A representative collection of selections from the literature in the mother tongue.

(*b*) Selections from the masterpieces of various Indian literatures. (Literary translations in the child's own language).

3. A more advanced study of the structure of the child's own language.

Formation of words.
Formation of sentences.
Symmetry of structure—elements of a good style.

4. *Self-Expression—Oral and Written.*

In addition to the syllabus outlined for Grades IV and V.

(*a*) Preparing a daily news-sheet.
(*b*) Editing a senior school magazine, for Grades VI and VII.
(*c*) Preparing notices, announcements and advertisements.
(*d*) Filling up business forms.
(*e*) Writing letters of social utility—invitation, condolence, apology, etc.
(*f*) Ability to give a short speech or to take part in a discussion on a given subject.

5. *A more advanced study of Basic Hindustani.*

Second Reader.
Writing.
Simple conversation.

GRADE VII

1. *General reading* as outlined in the syllabus of Grade VI.

2. *Study of Literature.*

(*a*) A more advanced selection from the best writers in the child's mother

tongue, arranged chronologically and with a simple presentation of the history of the literature of the mother tongue.

(*b*) A more advanced selection from the masterpieces of various Indian literatures, translated into the child's mother tongue.

(*c*) A selection from the masterpieces of world literature, translated into the child's mother tongue.

N. B.—These text-books should also include:—

(*a*) A few passages of advanced literature for intensive study.

(*b*) Extracts from the scriptures and religious writings of the principal world religions.

3. A more advanced study of the structure of the child's own language with an elementary study of the history of that language and its relation to the other languages of India.

4. *Self-Expression in speech and writing.*

(*a*) Continuation of the work outlined in the syllabus for Grade VI.

(*b*) Preparing report of completed work, such as health campaigns, village sanitation projects etc.

(*c*) Preparing plans or instructions for a proposed piece of work.

(*d*) Preparing a small pamphlet on any subject chosen by the student himself.

(*e*) The senior students, (thirteen to fourteen years) will organize their own discussion groups and dramatic clubs like the juniors (ten to twelve years). These discussions and entertainments should be more intimately related to the life of the village, and should make an attempt at attracting the adult population of the village.

During the last two years, the students will be expected to organize programmes of socially useful work in the villages, such as adult education, health campaigns, the celebration of national and cultural festivals, etc. These should provide occasions for the students to give short and simple talks to the villagers on practical subjects.

5. *A more advanced study of Hindustani.*

(*a*) Ability to make short speeches and to carry on conversation in Hindustani.

(*b*) Writing simple personal and business letters.

(*c*) Reading simple books, periodicals and newspapers.

MATHEMATICS

GRADE I.

First Term.

1. Counting up to 100 (with concrete objects); giving an idea that our system of counting is based upon units of ten.
2. Counting by tens, fives and twos up to 100.
3. Recognition of big and small numbers at sight.

Second Term.

1. Counting up to 160 (with concrete objects); extension of the idea of the decimal system in counting.
2. Mental addition and subtraction of numbers not exceeding ten. Thorough mastery of addition and subtraction tables up to 10 is necessary.
3. Meaning of signs + and —.
4. Simple problems in addition and subtraction up to 10.
5. Writing of numbers up to 160.
6. Simple measurments involving the use of
   (*a*) yard, foot, inch and hath (18").
   (*b*) seers, chhataks and tolas.
7. Recognition of simple geometrical forms:— straight lines; curved lines; a straight line as

the shortest distance between two given points.

GRADE II

1. Numeration and notation up to 999.
2. Addition and subtraction tables up to 20.
3. Addition of two and three figure numbers in vertical and in horizontal columns, the sum not exceeding 999.
4. Subtraction from any two or three figure numbers.
5. Multiplication tables up to 10 by 10; meaning of signs × and ÷.
6. Simple multiplication of numbers, the result not exceeding three digits.
7. Short division of numbers up to three digits by numbers up to 9.
8. Practice in measuring length and weight. Tables of money: rupee, anna, pice and pie. Tables of weight: panseri, seer, chhatak and tola or corresponding local measure.

   Tables of length: yard, foot, inch, hath, goondi, latti, kalli, etc.
9. Recognition of common geometrical figures: square, rectangle, triangle and circle.

GRADE III

1. Numeration and notation of numbers up to 7 digits.

2. Addition and subtraction to be continued. Practice in the processes and in problems of every day occurrence.
3. Multiplication tables up to 16 by 16.
4. Multiplication, long — the result not exceeding 7 digits.
5. Long division, by numbers up to 3 digits.
6. Reduction (ascending and descending) in measure, of money, length and weight.
   (*a*) Rupee, anna, pice, pie.
   (*b*) Yard, foot, inch.
   (*c*) Seer, chhatak, tola.
7. Simple problems in compound addition and subtraction.
8. Indian system of writing:—
   Rs. as. ps. and mds., seers and ch.
9. Idea of fractions $\frac{1}{4}$, $\frac{1}{2}$, $\frac{3}{4}$.
10. Construction by manipulation of concrete objects and learning of the fractional tables of $\frac{1}{4}$, $\frac{1}{2}$, $\frac{3}{4}$ up to 20.
11. Recognition of angles:—
    Acute, obtuse and right.
12. Recognition of common solids:—
    Cylinder, cone, sphere, cube.
13. Tables of weight, length, capacity and time.
    Seer, panseri, maund, kandi.
    Yard, pole, furlong, mile.
    Local measures of capacity.
    Second, minute, hour, day, week, month, year.

GRADE IV

1. Notation and numeration complete.
2. Four simple rules complete.
3. Compound addition and subtraction.
4. Compound multiplication and division.
5. Rekha Bhinna, *i. e.*, addition, subtraction, multiplication and division of Rs. as. ps. and Mds. seers and chs. by the quarter system.

(*N. B.*—The division must be by a whole number and not by a fraction).

6. Simple fractions of denominators, 10, 12, 14, 16 and 20.
7. L. C. M. by factors of the above.
8. Addition and subtraction of fractions of denominators given above.
9. Comparison of British and Indian measures of weight : Pound, seer, ton, kandi.
10. Guru (formulae for calculation) in connection with tables of measures learnt in the 3rd and 4th years.
11. Book-keeping :—Keeping of stock-book for individual craft work.
12. Square measure, area of a square and rectangle. In this connection students will learn how to draw :—

(*a*) a perpendicular to a given line.
(*b*) a parallel line to a given straight line.

GRADE V

1. Revision work in the four fundamental rules, simple and compound.
2. L. C. M. and H. C. F.
3. Vulgar fractions complete (complex fractions to be avoided).
4. Simple and compound practice.
5. Unitary method.

Book-keeping.

1. Budgeting (home, farm and festivals).
2. Keeping of stock and record books (for individual and class work).
3. Cash-book and ledger (Cash transactions of goods and money relating to craft, school and home).
4. Monthly statements of accounts. (Receipts and disbursement.)
5. Profit and Loss account, where no stock is left at the end of the year.

Practical Geometry.

1. Calculation of areas :—
   Triangle, parallelogram.
2. Circle, ratio of circumference to diameter, area of a circle.
3. Field work : drawing areas to scale. Bigha and acre compared.

In this connection the student will learn how to make,

(*a*) an angle equal to a given angle.
(*b*) a triangle equal to a given triangle, rectangle or parallelogram and
(*c*) to find the centre of a circle or an arc.

GRADE VI

1. Reading and writing of decimal fractions.
2. Addition, subtraction, multiplication and division of decimal fractions.
3. The idea of approximation.
4. Percentages.
5. Simple Interest.
6. Profit and Loss.

Book-keeping.

1. Continuation of the work of Grade V.
2. Transactions on credit and havalas.
3. Trial balance.

Practical Geometry.

1. Calculation of areas, continued from the work of grade V. Field work in connection with Patwari measurements of fields, etc.
2. Calculations of volumes of:—
   Cube, cuboid, cylinder.

N. B.—This is to be taken in connection with earthwork, making of walls, digging wells, etc.

GRADE VII

1. Revision and extension of previous work.
2. Ratio and proportion—rule of three.

3. Time, work and speed.
4. Simple equations representing rules and gurus for the calculation of areas, volumes, interest, etc.
5. Graphs.
6. Square root.

Book-keeping.

1. Trading account.
2. Profit and loss account.
3. Balance sheet.

Practical Geometry.

1. Revision of previous work.
2. Formulae for the calculation of areas, volumes.
3. Drawing of areas to scale.

SOCIAL STUDIES

GRADE I.

I. The Story of Primitive Man.

How he satisfied his wants and developed the rudiments of civilised life.

(*a*) His shelter — (caves, trees, lake-dwellings, etc.).

(*b*) His clothing or natural protection — use of leaves, barks and skins, etc., leading gradually to wool, cotton and silk.

(*c*) His means of livelihood — hunting, pastoral life and primitive agriculture.

(*d*) His weapons and tools—wood, stone, bronze and iron.

(*e*) His means of self-expression—speech, primitive writing and drawing.

(*f*) His companions and help-mates—horse, cow, dog, etc.

N. B.—This account of the life of primitive man should be given in the form of stories and activities likely to appeal to children's imagination.

II. Life of Man in Ancient Times.

Ancient Egypt, Ancient China and Ancient India, to be given in the form of stories, *e. g.*,

(*a*) The story of a common slave building the pyramids of Egypt.

(*b*) The story of the first five Chinese Emperors.

(*c*) The story of a boy in Mahenjo Daro.

(*d*) The story of Shunah Shepa (Vedic period).

III. Life of Man in Distant Lands.

Arab Bedouins, Eskimos, African Pygmies, Red Indians.

N. B.—Much of the work can be done orally in the time allotted to the Mother Tongue, in the forms of stories and dramatization.

IV. Training for Civic Life.

1. *Life of the child in school.*

Civic training will be imparted through practical training aiming at the development of the following attitudes and habits :

(*a*) *Cleanliness and Sanitation.*

(i) Personal cleanliness (refer to the syllabus of General Science).
(ii) Cleanliness of clothes.
(iii) Proper use of latrines and urinals.
(iv) Proper use of waste-paper basket and dustbin.
(v) Keeping the class-room and the school cupboards clean.
(vi) Care and proper use of the school drinking water.

(*b*) *Social Responsibilities.*

(i) Proper greeting of teachers and school-fellows.
(ii) Using of clean language.
(iii) Asking and answering questions politely.
(iv) Waiting for one's turn in speaking.
(v) Making use of the queue system.

(*c*) *Craft Work.*

(i) Proper use of craft materials and equipment.
(ii) Sharing materials and equipment with others.
(iii) Working in groups.
(iv) Waiting for one's turn.

(v) Leaving the class-room clean and replacing the material and equipment in proper order after work.

(*d*) *Games.*

(i) Fair play. (To refrain from cheating and deceiving).

(ii) To refrain from taking advantage of the weak.

(iii) Importance of truthfulness above all gain or victory.

(*e*) *Discharge of responsibilities.*

Besides the above-mentioned practical training every child should have some definite responsibility in the school life, either individually or as a member of a group. The following responsibilities are suggested for groups of children, between seven and nine years of age:

(i) Cleanliness of class-room.

(ii) Cleanliness of the school compound.

(iii) Care of the school drinking water.

(iv) Collection of leaves, flowers, stones, feathers, bark, wood, etc. for the school museum.

(v) Helping to decorate the school for festivals, etc.

(vi) Entertaining the school and the village.

(vii) Helping new students.

2. *The Life of the child in his Home.*

(*a*) The home as an ordered community, and the part played by every member in this unit.

The place of father and mother in the home.

The place of brothers, sisters and cousins in the home.

The place of other relations in the home.

The place of the servants in the home.

(*b*) The child's place in the family, and his responsibilities towards the elder and younger members.

(*c*) The proper discharge of particular duties assigned to him in the home.

V. Physical Training.

(*a*) Playground games and common village games requiring no special equipment.

(*b*) Imaginative and imitative games.

(*c*) Rhythmical exercises.

(*d*) Folk Dances.

GRADE II

1. *Primitive Life in Modern Times* :—*e. g.*,

African aborigines, Australian Bushmen, Ceylon Veddas, Indian aboriginal tribes.

2. *Life of Man in Ancient Times.*

Ancient Hebrews, Ancient Romans, Ancient India (the period of the Upanishads).

To be given in the form of stories *e. g.*

The story of Moses,—the story of Abraham.
The story of Marcus Aurelius and of Regulus the Roman.
The story of Nachiketa and Gargi.

3. *Life of Man in distant Lands.*

The life of an Afridi boy.
The life of a boy in a Swiss village.
The life of a boy in Persia.
The life of a boy in Japan.

N. B.—Much of the work under headings 1 and 2 should be included with the work in the Mother Tongue in the from of stories, reading material and dramatization.

4. *Training for Civic Life.*

Observation of life in the village.

Food, clothing, housing, occupations, water supply, the village bazaar, places of worship, entertainments, fairs and festivals.

5. *Practical.*

Practical civic training under the following heads :—

(*a*) The child in his school.
(*b*) The child in his home.

Under these two heads there will be a continuation of the work outlined in the syllabus of Grade I.

(*c*) The child and his village.

(i) Keeping the immediate neighbourhood of the home clean.

(ii) Keeping the village roads clean (If possible, the children should put up simple dust-bins in different parts of the village, and persuade their family and friends to use them.)

(iii) Refraining from dirtying the village well.

(iv) Entertaining the village by participating in school celebrations.

(v) Kindness to animals.

6. *Physical Training.*

As outlined in Grade I.

GRADE III.

1. *Life of Man in Ancient Times.*

Ancient India (Buddhist period), Ancient Persia.

Ancient Greece.

To be given in the form of stories, *e. g.*, :

Buddhist India :

The story of Buddha.

The story of Ashoka.

The story of Mahendra and Sanghamitra.

The story of a Buddhist missionary in Central Asia or China.

The story of a student of Nalanda.

Ancient Persia :

The story of Kava, the blacksmith.
The story of the battle of Thermopylae.
The story of an Indian physician at the court of Darius the Great.

Ancient Greece :

The story of a Greek slave.
The story of Socrates.
The story of a young man taking part in the Olympic games.
The story of Phidippides (Marathon race).
The story of Alexander.
The story of Megasthenes.

2. *Life of Man in Distant Lands.*

The story of a boy in New York.
The story of a boy in China.
The story of a boy in a Russian Kolhoz or collective farm.
The story of a boy in an Indian tea plantation.

N. B.—Much of the work under headings 1 and 2 will be included with the work in the Mother Tongue in the form of stories, reading material and dramatization.

3. *Study of the District* (including a guided tour of the district, if possible) with reference to :—relief, general features, climate, crops, industries, local historic

monuments, means of communication, places of worship.

N. B.—During this tour, the work should be elementary and general. It should be carried further and made more precise during the industrial survey of the district to be carried out during the fourth year.

Practical Work.

(*a*) Important features to be filled in an outline map of the district.

(*b*) Making of Plans: making plans of the class-room, the school building, the school-compound.

4. *Study of the Globe*:

Shape of the earth.
Land and water spheres.

5. *A study of the Village Community.*

(a) The village and its administration. The village officers. The village panchayat. Its functions.

(b) Village amenities — market, dispensary, post office, cattle pound, roads, play-ground, nearest railway station.

6. *Practical Work.*

(*a*) Organization of a School Panchayat on the lines of the village Panchayat.

(*b*) Organization of social service groups, (boys and girls between the ages of 9

and 12) for the following *Civic activities* :—

(i) Protection and cleanliness of streets and wells.

(ii) Protection of crops from destructive animals.

(iii) Organization of games and amusement for children under 9.

(iv) Organization of entertainments for the children and adult population of the village.

(v) Participation in national and seasonal festivals.

(vi) Preparation of posters, signs etc.

(vii) Volunteer-work in village fairs, festivals etc.

GRADE IV.

I. The Story of Ancient Times.

Ancient India, Buddhist China, Greater India, Early Christians.

(*a*) *Ancient India* :

The stories of Samudragupta, Kalidas, Aryabhatt, an Arab merchant trading in India, an Indian trader carrying his merchandise to foreign countries, Harshavardhana, Prithviraj, an Indian physician at Harun-ur-Rashid's court.

(*b*) *Buddhist China* :

The story of the Chinese pilgrims, Fahien and Hiuen Tsang.

(c) *Greater India* :

The story of an Indian merchant or artist sailing to Java or Siam and settling down there for his work.

(d) *The story of Christ and the Early Christians.*

II. Study of Man's Geographical Environments :

1. *An Industrial Survey of the District* :

Practical. Preparation of a map of the industries of the district. Preparation of a "guide book" as a co-operative effort.

2. *Geography of the province* with reference to its natural divisions, climate, agriculture, industries, communications.

3. *Distribution* of hunting, fishing and forest occupations in the world.

Practical Work. A relief map of the province in clay or mud, as a co-operative effort; making of maps, charts, plans and diagrams.

4. *The story of the explorations of the World.* Marco Polo, Vasco da Gama, Columbus.

5. Principal sea-routes of the world : India to Far East, India to Europe, India to Australia, India to Arabia and Africa, Europe to America.

6. *The various methods of ginning and carding* used at different times and in different countries (where spinning is the basic craft).

III. Training for Civic Life.

1. *A study of the town as an organized community*, with reference to the following points:

(*a*) Relation to the village — their mutual interdependence — migration from village to town.

(*b*) The administration of the town — municipality — rights and duties of citizens — taxes, police, law courts.

(*c*) Social services: hospitals, child-welfare centres, libraries and reading rooms, post office, water-works, street lighting, playgrounds, akharas.

(*d*) Places of worship; respect for all places of worship.

(*e*) Amusements and entertainment: theatres, cinemas.

(*f*) Centres of education: university, colleges and schools, industrial schools.

Practical Work.

A guided trip to the nearest town if possible.

2. *Study of Current events:*

through the daily reading of newspapers in reading circles—correlated with map-study in geography and with work in the mother tongue.

3. *Practical.*

(*a*) Organization of self-governing units in the school on the principles of local self-government.

(*b*) Organizations of social service groups with activities outlined in the syllabus for Grade III.

(*c*) Celebration of national, religious or seasonal festivals.

(*d*) Organization of newspaper-reading circles, and discussion groups on current subjects.

4. *Civic Activities.*

Continuation of work outlined for Grade III.

GRADE V

1. *The story of Muslim Civilization in India and the World.*

(*a*) Life story of Prophet Mohammad with the social and geographical background of Arabia.

(*b*) Some heroes of early Islamic history: Omar, Ali, Husain, Caliph, Abdul Aziz.

(*c*) The beginning of Muslim contact with India—Muslim travellers and merchants—Mohammad bin Kassim, Khwaja Moin-uddin Chishti.

(*d*) The story of the development of Indo-Muslim culture (illustrated through concrete examples).

(i) Interaction of the Hindu and Muslim religions, through the story of Amir Khusro, Kabir, Guru Nanak, Akbar and Dara Shikoh.

(ii) Development of a common social life :—

Food, dress, amusements, common festivals, social customs and etiquette.

(iii) Development of common political life and administrative system : Sher Shah, Akbar, Todar Mull.

(iv) Language and literature :—Persian as literary and court language; Hindu writers and scholars of Persian, and Muslim writers and scholars of Sanskrit and Hindi; patronage of Sanskrit, Hindi and Bengali, etc. by Muslims; development of Hindustani as a common language.

(v) Arts; Music; development of Indo-Muslim music : Amir Khusro, Tan Sen. Painting—Mughul, Rajput and Kangra Schools of Painting. Architecture—Kutub Minar, Fatehpur Sikri, Tajmahal. Calligraphy and illumination of manuscripts.

(vi) Handicrafts : weaving, dyeing and printing, gold and silver smithy, lace-work, carpet-making, gardening.

(*e*) Life stories of the following personalities with special reference to the social conditions of their times :—Alberuni, Ibn-i-Batuta, Feroz Shah Tughlak, Babar,

Chand Bibi, Nur Jehan, and some mystics and saints, such as Dadu, Kabir, Nanak, Baba Farid.

(f) Contribution of Islamic civilization to the world—Ali (as a man and as a scholar); Balal (the negro democracy); Haroon-ur-Rashid (patronage of learning); Salahuddin (representative of Muslim chivalry); Abdur Rahman III (Moorish culture in Spain); Extent of the Muslim empire in the world (in correlation with Geography).

II. Study of Man's Geographical Environment :

1. Geography of India, with reference to its natural divisions, relief, climate, natural vegetation, crops, means of communication, industries, trade, population, political divisions and linguistic areas.

Practical Work.

(i) Maps, charts and diagrams showing different features of the geography of India.

(ii) Map of the world showing the extent of the Muslim Empire.

2. A study of the different regions of the world with reference to the following occupations : commerce, agriculture and industries.

Practical Work : Maps, charts and diagrams.

3. Story of the discovery of the world : Livingstone, Cook, Peary, Shackleton.

4. A history of the spinning technique in India and other countries (to be taken during the craft period). Oral information, discussion and written composition.

III. Training for Civic Life :

1. Study of current events through :
   (*a*) Group reading of newspapers.
   (b) Editing a daily news sheet.
   (To be taken in the language period).
2. A study of the district under the following heads :
   (*a*) District and local boards and the public utility services as organized and controlled by them : agriculture, irrigation, co-operative organizations, sanitation, and public health, medicine and education.
   (*b*) Administration : administrative sub-divisions; the district officials and their duties; law courts and the police.
   (*c*) Agencies of social service.
   (*d*) Means for entertainment and popular education.
3. Civic activities :
   Continuation of the work outlined in Grade IV.

GRADE VI

1. History of India with special reference to the modern period.
   (*a*) The story of the disintegration of the Moghul Empire—Shivaji and the rise of the Marathas.
   (*b*) The decline of Indo-Muslim culture.
   (*c*) The story of the early European merchants, traders, soldiers and missionaries in India.
   (*d*) The story of the British occupation of India.
   (*e*) Ranjit Singh and the rise of the Sikhs.

2. The influence of the civilization of the West on Indian culture to be studied with reference to the following aspects:—
   (*a*) Religion.
   (*b*) Social Life.
   (*c*) Political and economic life.
   (*d*) Language and literature.
   (*e*) Education.
   (*f*) Industries, Arts and Handicrafts.

N. B.—The approach to this study should be concrete, *i. e.*, through actual examples, not theoretical or philosophic.

3. A History of the Indian National Movement.

4. A History of the textile industry in India—its decay (to be taken in connection with the craft work).

II. Study of Man's Geographical Environment.

1. An outline geography of the main regions of the world with fuller treatment of Eurasia (to show the reaction of geographical conditions on the life and occupations of the people).

2. Recent explorations—Everest expeditions, Russian expedition to the North Pole.

III. Training for Civic Life :

1. A detailed survey of the religious, social, economic and cultural life of the village, to be carried out by the students under the guidance of the teacher.

2. Practical Work. As the practical expression of the survey, the organization of a senior social service group, consisting of boys between the ages of 12-14 with the following activities as possible basic work :

(*a*) The systematic study of the region in the light of the economic and cultural needs of the people.

(*b*) Sanitary and hygienic inspection of dwellings, village roads and wells, protection and cleanliness of the village drinking water and village roads.

(*c*) Protection against flies, bed-bugs, malarial mosquitoes and other parasites.

(*d*) Gathering of medicinal herbs and their cultivation for local distribution.

(*e*) Organization of popular lectures on health and hygiene.

(*f*) Propaganda for preventive measures against infectious diseases.

(*g*) Organization of adult education in the villages—reading of journals and newspapers, organization of kirtans, kathas and popular lectures. Spread of literacy.

(*h*) Care of forests, groves and other natural beauty spots—care of old mosques, temples and other historical monuments.

(*i*) Propaganda against all forms of injustice in the village.

(*j*) Organizing centres of craft training for the adult population of the village.

(*k*) Organizing national and religious festivals. Organizing entertainments and games for the children and adult population of the village.

GRADE VII

The Study of the Modern World.

1. Science in modern life—conquest of the forces of nature through scientific inventions and discoveries and their application to life :

(i) Development of the rapid means of locomotion — railways, motor cars, steamships, aeroplanes.

(ii) Development of the rapid means of communication of ideas—press, telephone, telegraph, radio, television.

(iii) Development of modern industry—The Industrial Revolution.

(iv) Science and Public Health.

(v) Science and Agriculture.

(vi) Science in everyday life—food, clothing, lighting, building.

(vii) Science and modern warfare: the misuse of power over nature.
(This aspect of modern history will be closely correlated with work in General Science).

2. The story of industrialism and imperialism in the modern world.

(i) Growth of industrialism and capitalism in the countries of the West and the growth of industrial civilization.

(ii) Growth of imperialism as a result of industrial civilization. Exploitation of the races of Asia and Africa by the industrial nations of the West and by Japan.

(iii) The world war (1914—1918).

(iv) The story of socialism as a world force, its development as a reaction against capitalism and imperialism. The story of the U. S. S. R. as an experiment in industrial and socialist civilization.

3. Democracy in the modern world.
   (i) The meaning of democracy.
   (ii) Democratic institutions and communities in Ancient and Mediaeval India.
   (iii) The story of the American Republic.
   (iv) The story of the French Revolution.
   (v) The development of the present Indian constitution in outline—its limitations.
   (vi) The story of the suppression of democracy in Europe.

N. B.—These topics should be presented and studied in simple and broad outline with the object of giving the student a proper orientation towards the modern world.

2. Current Events :
   (*a*) The present international situation (in broad outline).
   (*b*) Forces working for international justice and peace :
      (i) The League of nations, its activities and its failures.
      (ii) Peace organizations.
      (iii) The Satyagraha movement as a world force.

3. Outstanding Problems of Modern Indian Life :
   (*a*) Social.
      Rural Reconstruction.
      The problem of untouchability and the Harijan Movement.
      Social Reform amongst Muslims.

The position of women in modern India.

(*b*) Political. The history of the National Movement (continued). Indians overseas.

(*c*) Economic. Decline of handicrafts and industries under British rule.
The problem of poverty in India.
Revival of handicrafts under the Swadeshi and the Village Industries movements. The beginnings of industrialization in India.

(*d*) Language. Multiplicity of languages in India; the importance of Hindustani as the national language.

(*e*) Cultural. Movements for the revival of Indian culture and national education.

4. An elementary knowledge of the economic geography of the world, with special reference to the countries with which India has economic relations.

(To be initiated by the study of the village bazaar or the district fair).

5. History of the technique of weaving in India and in other lands, (in correlation with the craft of spinning and weaving).

6. Practical activities. Continuation of the work laid down for grade VI.

GENERAL SCIENCE

GRADE I

1. Naming and recognition of principal crops, trees, animals and birds in the neighbourhood.

2. Direction finding with reference to the sun; the seasons of the year; observation of changes due to change of season; effect on trees, plants, birds, insects, reptiles and man.

(*a*) The colour of trees at different times of the year; the falling of leaves; chief parts of a plant; recognizing the difference between a leaf, a root and a stem; the bulb as store-house of future nourishment ; potato, onion.

(*b*) Insects fewer in winter than in spring and rain. Snakes during the rainy season. Where do they go in winter ?

(*c*) Change in the clothing of man; how does clothing protect against cold ?

3. We are surrounded by air at all times; air is a real substance; man breathes and lives in air; the air is in motion in the winds and in the school-room.

4. Sources of water (river, spring, tank, well); circulation of water; evaporation, sun, clouds, dew and rain; observations of loss of water through evaporation.

5. Fire must have air to burn; be careful with fire; don't run if clothing catches fire.

6. Developing habits of cleanliness; cleaning of the body; cleaning of the face, hands, nails and teeth; use of the datoon; cleaning of clothes; washing with various materials available in the villages.

7. Stories of how from the earliest time the world over, man has been observing the sun, the moon and the stars and utilizing this knowledge for calculating time and finding out direction.

Stories about farmers, travellers, sailors and generals of armies; how they have profited by the knowledge of astronomy.

The rising and setting of the sun and moon. The child is to be encouraged to observe that the same stars that set in the morning are to be seen to rise a little after sunset in the evening.

Phases of the moon; the bright and the dark half of the month; what they actually mean.

Observation of the exact points of sunrise and sunset and the rays of light as they fall from the window on the wall opposite; the winter solstice and the summer solstice (22nd December and 22nd June).

Finding the northern point by observing the Pole Star and the Great Bear.

Observation of the eclipses of the sun and moon if there are any during the year.

(Insist on observation by the pupils. Organize frequent excursions. Prepare pupils beforehand for possible observations).

GRADE II

1. Recognition of :

(*a*) General form and size,
(*b*) General form of the stem and bark,
(*c*) General form of the leaf,
(*d*) General form, size and colour of the flower,
(*e*) General form and size of the fruit and seed of at least five common trees of the neighbourhood.

2. Recognition as in *a-e* above of at least 10 vegetables and crops grown in the neighbourhood; knowledge of the time of sowing and harvesting and the period of germination.

3. General appearance, mode of locomotion, food, and the call or cry of at least 4 domestic and 3 wild animals of the neighbourhood. Pond life; the frog and the fish; how they breathe; from the tadpole to the frog.

4. Birds; general form, size, colour; mode of flight, nesting and feeding; breeding season; size, form and colour of eggs of at least five birds usually found in the neighbourhood; making a bird-fountain and a bird-table in the school-yard.

5. Observation that there is dust in the air; haze due to dust on a summer day; the dust-storm; beam of sunlight in a semi-darkened room; diseases caused by dust; how to minimize dangers due to dust.

6. Water—its importance to plant, animal and human life; pure and impure water; common infections carried by water, the village-well.

(In 1—6 insist on direct observation; direct the pupil's attention to what he has to observe).

7. Practical directions as regards breathing through the nose; value of fresh air; healthy habits of sleep.

8. The day, the month and the year are not arbitrary units but they depend on natural astronomical phenomena.

The day caused by the earth's rotation round its axis; division of a day into 24 hours or 60 ghatis, the latter being a more natural unit.

The Month caused by the moon's circling round the earth from full moon to full moon or from new moon to new moon, the month being made up of nearly 30 days.

The seasons :—winter, spring, summer, rains, autumn.

The eclipses of the sun and the moon. What causes them ?

GRADE III

1. Plants require food, water and sunlight.

Comparative produce of equal plots with different manure, water and light provision.

Water dissolves substances; food of plants in solution; function of roots, stems, leaves, flowers and seeds.

2. Seeds and germination; at least 3 seeds, one from each of the following groups :

(*a*) maize, wheat, barley,

(*b*) pea, cotton, pulses,

(*c*) neem, castor.

(to show the difference between dicot and monocot seeds and that between hypogeal and epigeal cotyledons).

How seeds are scattered : by wind, by animals, by force from the fruit, by water.

3. At least three domestic animals in more detail : the cow, the cat, the dog; how they care for their young.

Interdependence in nature; animals dependent on plants; man dependent on plants and animals.

4. Spiders and insects in the neighbourhood; recognition; their food, home and habits; house-fly, from eggs, larva or maggot; pupa to the fly; the breeding places of the fly; fly the reporter of dirt and the carrier of disease; how to get rid of the flies that infest the homes.

5. Experiments to show the difference between air breathed in and air breathed out; nature of combustion; importance of ventilation.

6. Pure and impure water; how to purify water, decantation, filtration, and boiling.

7. Cleanliness at home; disposal of night soil, cowdung and filth; their value as manures.

8. Wholesome food and healthy eating habits; proper sleep and exercises.

9. (Extended over Grades 3 and 4).

As in No. 7 of Grade 1 and No. 8 of Grade 2, but in greater detail.

The most important and characteristic constellations and their fancied shapes.

The students should be encouraged to observe and draw the figures of the constellations. They should be asked to make their own groupings of the stars.

GRADE IV

1. Plant physiology: leaves as organs of transpiration, respiration, and carbon assimilation.

Roots and their functions; root hairs, how water passes into the roots.

2. The Village pond; water-birds; their food, habits, songs; where and how they nest; their migration.

3. Insect life; the mosquito; from the wriggler to the mosquito; mosquito and health problems; where do mosquitoes breed; malaria and its prevention; loss to the village community due to malaria; the bee and the ant; division of work and social organization.

4. Spiders, scorpions and snakes; the characteristics of spiders; how to distinguish them from insects; utility to man; destruction of harmful insects.

Recognition of poisonous and non-poisonous snakes; non-poisonous snakes as helpers of the

agriculturists; first aid measures in case of scorpion and snake bite.

5. The three states of matter : water as solid, liquid and gas; distillation and condensation.

6. Experiments to show that air is a material, a gas occupying space; experiments to show that air has weight and causes pressure; experiments to show that gases, liquids and solids expand and contract with change in temperature; experiments to show how evaporation cools.

7. Human physiology : the respiratory and the circulatory system; common infections and contagious diseases : cholera, plague, small-pox and malaria; how produced; how to prevent their spreading.

8. See under No. 9 of Grade III.

GRADE V

1. Continuation and recapitulation of plant and animal study with reference to :—

(*a*) flower, its parts and functions,
(*b*) seed and fruit formation,
(*c*) dispersal of fruits and seeds,
(d) methods of vegetative propagation of plants (cutting, grafting, layering etc.),
(*e*) insects and birds that help in dispersal of seeds,
(*f*) poisonous and non-poisonous snakes; symptoms of poisoning and first aid measures in case of snake and dog-bites.

2. Different kinds of food and their nutritive value; the digestion of food; the digestive system; what to eat; when to eat; the common drinking cup, its dangers.

3. Air : its composition; impurities; its purification; the function of trees in purifying air; air in a crowded room; methods of ventilation; draught; atmospheric pressure.

4. Water : composition, impurities; its purification; cholera, dysentry, typhoid and guinea-worm produced by impure water; precautions and safe-guards.

Solution; solubility, saturated solutions, crystals.

5. Compass; magnetism, properties of a magnet.

6. Lightning and thunder, frictional electricity, simple voltaic cell.

7. Stories of eminent scientists, their search for truth.

8. The solar system :—the nine planets; the comets, the planets, their satellites, the rings of Saturn, the zodiacal light.

Geography of the moon; days when the moon is nearest to the earth and the days when the earth is nearest to the sun.

GRADE VI & VII

1. A thorough review of work done in previous grades.

2. A study of the acids, alkalis and salts with examples from everyday life.

3. A comparatively thorough knowledge of the human body, its parts and their functions. The human body a fortress.

(*a*) Outer wall : the skin.

(*b*) Watchmen on the wall : sense organs, sight, sound, smell, taste, touch.

(*c*) The Fort :

(i) Air—respiratory system.

(ii) Posters—circulatory system.

(iii) Food and its distribution—alimentary system.

(iv) Sewage—excretory system.

(*a*) Skin.

(*b*) Kidneys.

(*c*) Breath.

(*d*) Bowels.

(v) Defence—Bacteria.

(vi) Officers and Intelligence—nervous system.

4. Health education to be particularly emphasized during these two years; preservation and improvement of health as against restoration; the preservation of health as an individual and social duty; purity of life as a preservative of health; causes of ill-health; ignorance, carelessness, poverty, intemperance in food, drink, work and pleasure. Tuberculosis, leprosy : their causes, symptoms and prevention; the individual suffering and social loss involved; the need for individual alertness and social control to prevent diseases

(the pupils during these two years should undertake an active health campaign in the village).

5. All pupils before leaving school should have acquired :

1. The daily bath habit,
2. The daily exercise habit,
3. The fresh air habit,
4. The moderation-in-all-things-habit,
5. The laughing habit.

6. The story of the Earth and the story of the evolution of life to be told in simple outline.

7. The story of man's conquest of nature briefly and simply told. The story of the control of diseases. The story of communications and industries.

8. Simple mechanical appliances in the home; levers, pulleys and screw appliances; pendulum, clock, work and working capacity; steam engine; internal combustion engines; acquaintance with magnetism and the magnetic field. The electric battery, the electric current, the electric bell.

9. First Aid to the injured: punctured wounds, cuts and bruises, burns, accidents to the nose, dog-bite, snake-bite, fractures and dislocations; application of splints and bandages; foreign bodies in eye, ear and nose; drowning; artificial respiration; transport of the injured.

10. Lives of at least 5 eminent scientists and their " Experiments with Truth. "

11. The law of gravitation illustrated by the motion of the moon round the earth. The transit of Venus. The falling stars. Nebulæ.

Astronomical distance—(light years)—distances of the stars.

Stars of the first magnitude and their distances.

What is the Milky Way ?

Shapes of the nebulæ.

The Calendar. The Solar and the Lunar systems of the calendar; intercalary month (Adhikmas); Pope Gregory's reform. The modern proposals for reform.

How to know the exact time of night or day by watching the position of the sun or the stars, the date by watching the phases of the moon, the month by watching the position of the moon in the constellations, and the season from the particular stars that rule the nights.

How to find direction from the stars.

Modern achievements. What is spectrum analysis ? The observatories at Ujjain, Jaipur, Sekanderabad, Kodaikanal, Greenwich, and Mount Wilson. What is in the interior of the stars ?

DRAWING

GRADE I

Noting colours in relation to each other—red with green, yellow with black, recognizing colour in flowers, trees, fruits and birds.

Correct names of the colours. Colouring of hectographed outlines.

Idea of form and relation.

Blue sky and green fields: with crayon and then cut in coloured paper.

Different shaped leaves to be traced and comparative form to be shown—pipal leaf, banana leaf etc.

Form of common vegetables and fruits, usually a large size (pumpkin, brinjal, carrot, melon, mango).

Memory drawing of objects seen around them with coloured crayons.

Note: Care should be taken to teach correct position and necessity for moving whole arm in drawing.

GRADE II

Drawing of objects connected with daily lessons. Illustrative representation to be usually in black or brown crayola, if possible with colours. Simple designs for borders with triangles, circles, semi-circles, simple flower units drawn or cut in coloured paper.

Landscape to be done with colour only—with river, trees, birds etc.

Drawing and cutting tree form with foliage.

Animals with their colours; common vegetables with foliage.

Practice for free arm movement and correct position.

GRADE III

Drawing of objects used in other lessons and in the home from memory.

Scenes from home life.

Practice in drawing of trees, houses and animals, using action lines.

Designing of borders with squares, oblongs and circles, colouring them differently, *e. g.*, orange, green and purple.

Blending of colours—red and blue, blue and yellow, in two tones of gray.

GRADE IV

Some landscapes, flowers, leaves and butterflies in colours.

The near and far relations in nature and object drawing. The appearance of the near tree and the distant tree.

Drawing with the help of geometrical figures, flowers, leaves, in one colour and in several colours; complementary harmony and analogous harmony.

Decorative designs according to local tradition, (*e. g.* Rangoli, Alpona).

Mounting drawings on harmonizing background.

Sketching of children and animals in action. Action may be shown by match-sticks.

Posters illustrating some lessons in social studies or general science for group work.

GRADE V

Closer visual analysis and faithful execution should be insisted on here. Work done in previous grades might be repeated with greater thoroughness.

Proportion, arrangement, relation of objects, colour, values, massing, to be carefully studied.

Standard tints, shades; warm and cool colours; colour charts; colour scale in nature drawings made.

A leaf in different positions, sprays of leaves, pods, in pencil, ink and colour (by throwing shadows on the walls).

Landscape for book covers, outlining masses with black.

Illustration of social studies, science and literature lessons.

Pose drawing from children in action, and from animals studied.

Poster for a 'school day'.

GRADE VI

Continue work in object drawing and designing.

Make an animal book for children of Grade I to be presented to them on the occasion of some festival.

Make posters for some social service campaign in the village. (Group work).

Scale drawing; making of plane scales; the use of scales in construction; reducing, enlarging and copying of plane figures.

GRADE VII

Continue work in object drawing and designing.

Make a book of 4 landscapes for children of Grade II, decorating the title page with a coloured design.

Make posters for some social service campaign in the village.

Plans, elevation and sections of solids in simple position.

Drawings and sections of objects to be made in the craft class.

The students of Grades I, II and III, should use only colours as far as possible; black and white may be introduced afterwards. Tracing from good patterns, and drawing pictures should be continued throughout the seven years (grades I to VII).

POSSIBLE CORRELATIONS WITH THE BASIC CRAFT OF SPINNING AND WEAVING

The elements of the curriculum which we have recommended are closely correlated with one another because we have made an attempt to relate them integrally to the life and environment of the child. By making the craft the centre of education we are anxious to make the whole process of education real for the child by providing concrete learning situations for him. Therefore, the three central points round which we have built up the curriculum are the child's social environment, the child's physical environment, and the basic craft which connects him to both. We indicate below the possibilities of correlating the various items of the curriculum with the basic craft in each grade, to show that a considerable amount of the subject matter to be learnt can be integrally related to the craft activities of the child.

The numbers within brackets in the following pages refer to the items of the basic syllabus in the various grades.

It is unnecessary to point out correlations with the other two centres, *i. e.* the social and the physical environment because they are obviously covered by the syllabuses in social studies and general science.

GRADE I

Mathematics

Counting the number of rounds while winding the yarn on to the winder; counting the slivers given out for spinning; the number of the accessories of spinning, such as taklis, winders.

An idea of the decimal system by counting the fingers of the hand, by arranging objects in groups of ten, *e. g.* taklis, winders, hanks of yarn; by forming boys on drill in lines of ten each and by giving out slivers for spinning in bundles of ten.

Addition tables can be constructed by keeping scores at spinning competitions, counting different objects and performing the operation of addition by arranging them in heaps.

Subtraction tables by counting the slivers given over for spinning and left over after spinning is finished.

Measuring of thread and weighing of slivers given out for spinning will enable them to arrive at mathematical results, *e. g.* units of measures, lines curved and straight.

N. B.—Counting and writing of numbers up to 160 is needed in spinning and winding as 160 rounds make a lati, 16 rounds a kali—1 round equalling 4 ft. a tar.

Social Studies

Clothing of primitive man and woman—use of leaves, bark and skins, leading gradually to the use of wood, cotton and silk. (I b.)

Dress of men and women in different lands—the Arab, the Eskimo, the African Pigmy. Dress in cold and warm countries. Cleanliness of clothes.

General Science

Names and functions of different parts of the cotton plant, changes in the clothing of man with the change of seasons. How does clothing protect against cold and heat? Effect of humidity on carding and spinning. Morning time for the picking of cotton. Germination of the cotton seed.

Drawing

Drawing of the cotton plant, cotton flower, cotton pod.

Mother Tongue:

Naming the various tools used in the craft, describing the various processes of picking, carding and spinning with the takli; harvest songs and folk songs connected with spinning.

GRADE II

Mathematics

Acquaintance with bigger numbers in spinning and winding exercises, as 640 rounds make a goondi.

Addition and subtraction tables by practical work in spinning and winding, by counting exercises in preparation of slivers and thread. Easy problems in addition and subtraction from practical work in spinning and winding.

Exercises in measuring and weighing in connection with the basic craft to be continued, to introduce measures of length, weight and money, commonly used in the locality.

Multiplication tables to be constructed by students when counting in groups of ten, five and two.

Social Studies

Dress of primitive man and woman in modern times (1),

Dress in ancient times (2),

Dress in distant lands (3).

Clothing of different classes of people in the village, (too little—too much; swadeshi—foreign), styles of dress.

General Science

Form and size of the cotton plant (II); stem and bark of the cotton plant; form of the leaf of the cotton plant; form, size and colour of flower of the cotton plant; the seed of the cotton plant; time of sowing and harvesting and the period of germination, (V). Cotton plug to prevent dust getting in.

Drawing

Drawing the cotton plant, the cotton flower.

Mother Tongue

Oral description of processes involved in the craft work. Reading matter to be provided should contain lessons on items mentioned above under social studies and general science.

Writing of the names (nouns) of instruments used in craft and the processes (verbs) involved; writing short sentences about them.

GRADE III

Mathematics

Numeration and notation in connection with

(*a*) statistics of the produce of cotton in the village, district, province and country, and figures of export of cotton and of import and export of cotton cloth,

(*b*) population of the village, the district, the province and India, engaged in the basic craft,

(*c*) the areas under cultivation: of cotton, wheat, etc.

(These will supply data for problems and exercises in addition and subtraction with bigger numbers).

Multiplication and division as the shortest way of performing addition and subtraction of equal numbers to be taken up by the distribution

and by taking back of slivers, taklis, winders and bundles of cotton, by calculating numbers of objects required for distribution and the numbers received from a heap by individual students.

Tables of weights and measures to be studied in actual exercises in weighing and measuring in the course of craft work.

A study of the charkha to gain familiarity with common solids, *e. g.* cylinder, cone, sphere, etc.

The ideas of quarter, half and three quarters to be given to children practically, by making heaps of cotton, or cotton seeds.

Exercises in reduction (ascending and descending) can be taught by practical work in calculating wages of spinning per child, per class and per length of yarn spun per class.

Social Studies

1. Dress in Buddhist India, (dress of Bhikhus). Ancient Persia and Ancient Greece. Beauty and simplicity of dress in ancient times (No. 1).

2. Description and significance of dress (under No. 2 dress for work, leisure and sleep).

3. Production of cloth in the village—approximate consumption per head,—quantity produced in the village and imported from outside (No. 3).

General Science

Experiments with the cotton plant to illustrate germination of the cotton seed (No. I).

Dispersal of the cotton seed (No. II).

Dependence of man on cotton plant (No. III).

How to keep clothes clean—washing with various materials available in the village.

Drawing

Drawing of dresses of primitive people.

Mother Tongue

Oral description and discussion of craft process; silent reading of written instructions about the craft work.

Relevant reading material in the text.

Keeping a daily record of work done in craft.

GRADE IV

Mathematics

The bigger numbers to be taken from figures of the occupational census and from statistics of production, export and import etc.

Calculation of wages earned in craft work will introduce the pupils to compound multiplication.

Simple book-keeping in connection with work in basic craft, keeping an account of materials used and goods sold.

Social Studies

Indian trade in cloth in olden times (No. 1).

More detailed information about production, consumption of cloth in the village and the district (II : 1).

Centres of cloth-production in the district (II : 2).

The role played by the cloth trade in Indian history; importance of trade routes from India to the West; the urge to find a sea-route (II : 5).

The number of producers of cloth in the village, in the district; number necessary to produce all the cloth required ; variations of this number with the variations in the methods of production; textile mills, the migration from village to town, its extent, its dangers, need for planning. (III : a).

General Science

Experiment with cotton plant to illustrate No. I.

Experiment with cotton to show that air occupies the space between the fibres; carded cotton, increased volume of air in the intervening space; air, non-conductor of heat; lihaf and razai. (IV).

Drawing

Posters and charts to represent graphically information relating to crafts under social studies.

Mother Tongue

Oral presentation and discussion of relevant information under social studies given above. Relevant reading material in the text book and in the books for supplementary reading (II : a).

Writing about relevant facts under social studies; description of processes in craft and experiments in general science; writing simple letters to elicit information from relevant centres such as the A. I. S. A., A. I. V. I. A., the District Council or Village Panchayat (III : c).

Keeping a daily or monthly record of individual and class progress in the basic craft (III: d).

GRADE V

Mathematics

Practical problems in the calculation of wages, quantities of yarn spun, and yearly produce and expenses.

Practice method of calculation with reference to prices of yarn, cloth and wages.

Book-keeping to be continued by keeping detailed accounts of the work in the basic craft and the school co-operative shop.

Social Studies

The simple dress of the Prophet of Islam; how cloth was produced in Arabia at that time; (I, a).

Indo-Muslim dress; (I, d, *ii*). Improvement in cloth-production; weaving, dyeing and printing; carpet-making; (I, d, vi). Chief centres of cloth trade (I) with a study of their climatic and geographical conditions; state protection and patronage; land and sea-routes of the cloth-trade; flourishing trade with the West; privately-owned and State factories.

The study of the different regions of the world with reference to the production of cloth, cotton and wool areas; (II, 4).

The whole of No. III.

Possibilities of organizing sale of khadi-cloth on a co-operative basis; the organization of its production and sale in the district; importance of khadi in the present economic life of India.

General Science

Study of the cotton plant in greater detail as required under No. I.

Drawing

Drawing of illustrations for relevant information under social studies and general science given above.

Careful study of the cotton leaf and pod in general, pencil, ink and colour.

Mother Tongue and Hindustani

A good deal of relevant reading matter can be provided in the text-book, and in books for supplementary reading.

Letters to different organizations to elicit information about Khadi production and sales, about possibilities of co-operative organization.

The keeping of necessary records of craft work.

Hindustani names of equipment and processes involved in the craft.

GRADE VI

Mathematics

Work in the school-shop as an introduction to problems of profit and loss.

Percentages of waste in the craft work.

Calculations of the volume of wood required for making charkhas etc. Volumes of cubes, cuboids and cylinders. Calculation of areas.

Social Studies

The importance of cotton to the West; the whole story of the British occupation of India.

The cost of cloth required for durries; cost of making dresses.

The causes of the origin of the East Indies-Trade: first trade concessions; relation of European companies and the workers; the East India Company and the Indian merchants; the exploitation of the Indian peasant, worker and trader; the Industrial Revolution; competition with Indian trade; protection in England against Indian textiles (I, c, d).

The story of the Indian national movement; the Swadeshi Movement; Swadeshi under Gandhiji; charkha and khadi as symbols of Indian freedom; the economics of khadi *(1 : 3)*. The whole of 1, 4.

Organizing centres of craft training for the adult population of the village.

Different kinds of cotton and its geographical distribution in the world; map work and collection of specimens of different kinds of cotton; climatic conditions favourable to the growth of cotton *e. g.* soil, humidity, temperature; the idea of geographic control; import and export figures relating to Indian cotton; cotton exports and imports from and to different cotton-manufacturing and cloth-producing countries of the world (II).

The scramble for markets and raw materials; correlation with current events, *e. g.* the conquest of Abyssinia, Manchuria, China.

General Science

Physical properties of water; its chemical composition and the mechanical devices for irrigation may be studied in connection with the geography of cotton; study of (I) with reference to cotton; insect pests; study of useful and harmful insects.

Drawing

Posters for a campaign to popularize the use of khadi; scale drawing in relation with craft-work.

Mother Tongue and Hindustani

A good deal of very instructive and interesting reading material can be provided in the text book and the books for supplementary reading dealing with topics mentioned above under social studies and general science. Composition work should also be closely correlated with the interests generated in connection with the craft and other work.

GRADE VII

Mathematics

The children should learn to understand the rates of interest charged and the method of the calculation of interest. Running of School Savings Bank will make the need of these calculations more important. Practical problems in time, speed and work with reference to the basic craft.

Graphs in connection with the progress made by students in craft work and in other school subjects. Square root calculation in the making of cloth; The mutual relation of warp, weft, poonjam and hank.

Social Studies

The effect of the Industrial Revolution on the textile industry (No. I, 1, iii).

Effect of scientific and technical developments on clothing (No. I, 1, iv).

The story of industrialism and imperial expansion as illustrated by the scramble for cotton growing areas and markets for textiles (2, i and 2, ii).

The world War (2, iii).

Development of cotton areas. World production of cotton, cloth imports and exports (IV).

Different methods of producing cotton; individual and collective farming; land tenure systems (2, iv). Cotton growing in Egypt and the U. S. A. with reference to areas in the South—its association with slavery. The Civil War (3, iii).

History of the technique of weaving in India and other countries (V).

General Science

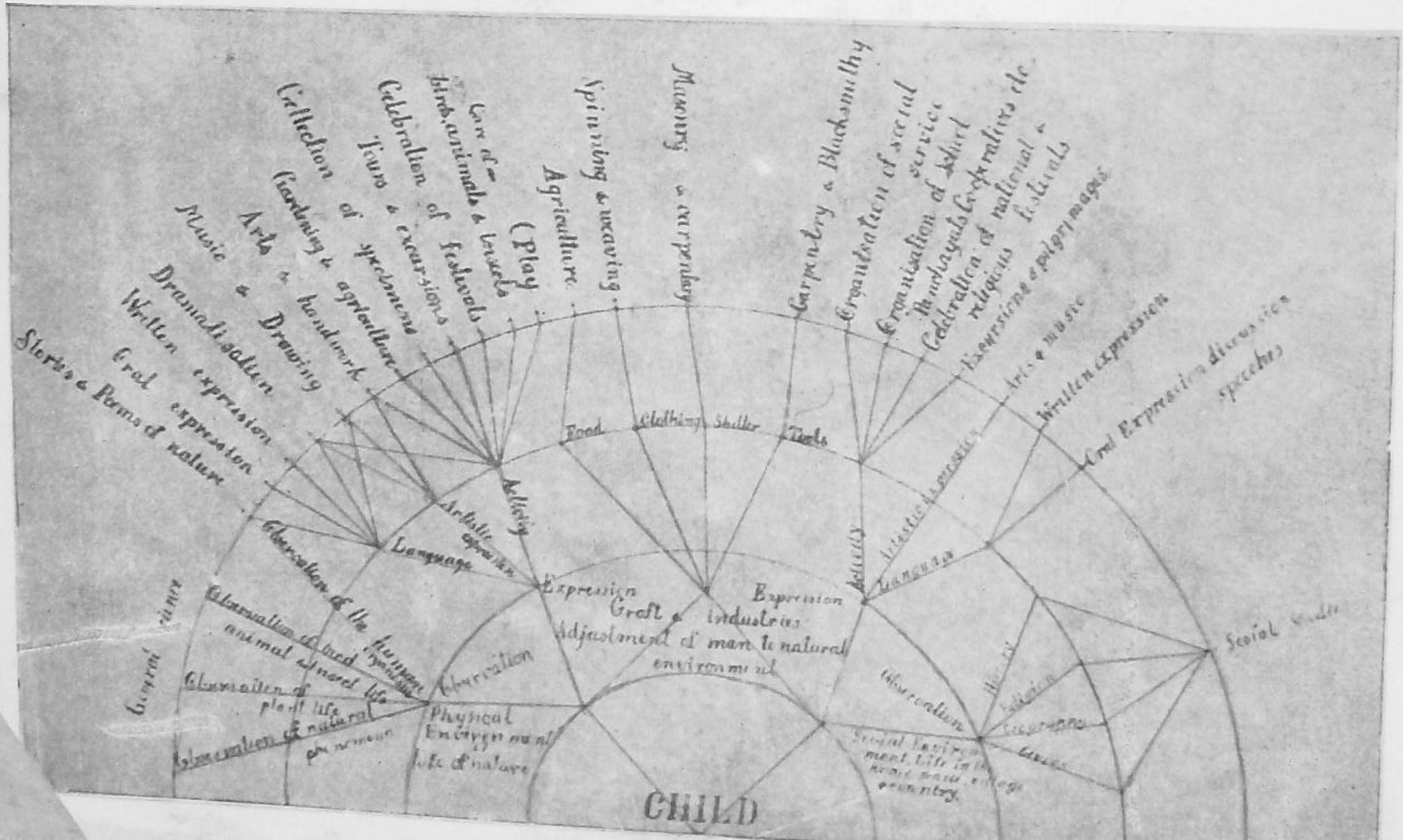
Bleaching, dyeing and printing of cloth. Relevant portions about mechanical appliances with reference to the development of the spinning and weaving technique (VIII).

Drawing

Drawings and sections of objects to be made in the craft class.

Mother Tongue and Hindustani

As in Grade VI.


Numbers
Carpentry
Organisation of social service
Organisation of labour
Celebration of festivals
religious & national
Dancing & pilgrimages
Spinning & weaving
Agriculture
Play
Care of animals & breeds
Celebration of festivals
Tours & excursions
of specimens
Collection
Gardening & handwork
Arts & Drawing
Music & Dramatisation
Written expression
Oral expression
Forms of nature
Food
Clothing
Shelter
Tools
Language
Expression
Craft & Industries
Adjustment of man to natural environment
Physical Environment
Life of nature
Social Environment
CHILD

Resolution passed by the Indian National Congress at its Haripura Session

NATIONAL EDUCATION

The Congress has emphasized the importance of national education ever since 1906, and during the non-co-operation period many national educational institutions were started under its auspices. The Congress attaches the utmost importance to a proper organization of mass education and holds that all national progress ultimately depends on the method and content and objective of the education that is provided for the people. The existing system of education in India is admitted to have failed. Its objectives have been antiquated and it has been confined to a small number of people and has left the vast majority of our people illiterate. It is essential therefore to build up national education on a new foundation and on a nation-wide scale. As the Congress is having new opportunities of service and of influencing and controlling state education, it is necessary to lay down the basic principles which should guide such education and to take other necessary steps to give effect to them. The Congress is of opinion that for the primary and secondary stages a basic education should be imparted in accordance with the following principles :

1. Free and compulsory education should be provided for seven years on a nation-wide scale.

2. The medium of instruction must be the mother tongue.

3. Throughout this period education should centre round some form of manual and productive work, and all other activities to be developed or training to be given should, as far as possible, be integrally related to the central handicraft chosen with due regard to the environment of the child.

Accordingly the Congress is of opinion that an All India Education Board to deal with this basic part of education be established and for this purpose requests and authorizes Dr. Zakir Husain and Shri E. Aryanayakam to take immediate steps, under the advice and guidance of Gandhiji, to bring such a Board into existence, in order to work out in a consolidated manner a programme of basic national education and to recommend it for acceptance to those who are in control of state or private education.

The said Board shall have power to frame its own Constitution, to raise funds and perform all such acts as may be necessary for the fulfilment of its objects.

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