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BUILDING A BETTER HEMISPHERE SERIES NO. 6

Industrial Education

IN BRAZIL

By

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VOCATIONAL PROGRAM PLANNING

THE INSTITUTE OF INTER-AMERICAN AFFAIRS
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POINT 4 IN ACTION

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INTER-AMERICAN REGIONAL OFFICE

TECHNICAL COOPERATION ADMINISTRATION

How the U. S. cooperates to improve teacher training, instructional materials, shop organization and vocational guidance for a South American neighbor . . .

Industrial Education in Brazil

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BRAZILIAN-UNITED STATES cooperation at the level of vocational industrial education has twin objectives: to raise the standard of living of Brazil and to reduce illiteracy estimated still to be more than 50 per cent.

The cooperative program, now well under way for the 5-year period ending in 1955, is sponsored under a basic agreement signed in 1946. It authorized the Brazilian Ministry of Education and Health and The Institute of Inter-American Affairs (a United States Government Point Four agency) through the Institute's Education Division, to work out the program which fulfills both the historic Good Neighbor Policy of the United States and the Point Four program of technical assistance later enunciated by President Truman.

Today the program is active in 23 vocational schools throughout the vast Brazilian republic, with 773 men and women instructors and 5850 students. At present it is directed along four paths: teacher training, preparation of instructional materials, shop organization and vocational guidance.

Industrial education in Brazil is supervised by the Ministry of Education and Health. The industrial schools are maintained by the federal government, state governments and private agencies.

At the present time the Federal Ministry maintains 21 schools and 2 courses under the direct supervision of the Division of Industrial Education, in addition to the Federal Technical School of Chemical and Textile Industry, administered by SENAI,¹ and the Escola Tecnica Darcy Vargas, administered by Fundacao Cristo Redentor.

There are, in addition, apprenticeship schools designed for the training of employed apprentices and adult workers, the majority of which are administered by the SENAI, as well as others administered by public agencies, such as the National Printing Office and the Fabrica de Piquete.

Through a series of discussions between the American Government, represented by its Embassy in Rio de Janeiro, and the Brazilian Government, represented by the Ministry of Foreign Affairs, a Cooperative Industrial Education Program originated in 1945, and active work was begun under the Basic Agreement signed on

January 3, 1946. Under this agreement the following objectives were to be carried out:

- a) The development of closer relations between teachers of vocational education in Brazil and the United States.
- b) The interchange and training of Brazilian and United States specialists in vocational education, and
- c) The development of such other projects in the field of vocational education as may be of mutual interest.

OPERATION OF THE PROGRAM

The Institute of Inter-American Affairs, through its Education Division, commenced operations in Brazil in January, 1946. The initial period consisted of planning the projects and acquainting the American specialists with the system of industrial education in practice in Brazil.

The activities of the Education Division have been confined to the 23 vocational trade schools maintained through appropriations originating with the Federal Government of Brazil. An *Escola Tecnica* is located in each State and the majority have boarders as well as day scholars. All personnel employed in these schools are the equivalent of Civil Service employees in the United States.

Due to the lack of trained instructors for vocational schools, the practice has been to accept applicants out of industry who take a competitive examination. Quite often the instructor selected has had from 3 to 12 years experience in a trade and has worked for some concern in a particular section of the industry, without having a full, rounded knowledge of the entire operations. He generally has not had any training whatsoever in teaching.

To raise the level of the instructors presently employed, short courses have been given stressing both the practical and the theoretical problems which are faced in teaching classes of young students.

In addition to the preparation of new applicants for instructors and professors in the school system, all candidates are now screened and required to take the instruction provided for them. There is a constant process of refining the requirements for new instructors.

Except for a period of about 16 months from June 30, 1948 to November 1949, there were American educational technicians on the staff of the CBAI,² an agency within the Ministry of Education and Health created to administer the joint program.

The Director of the Division of Industrial Education of the Ministry is the Superintendent of CBAI, The Chief of Field Party of The Institute of Inter-American Affairs is the American representative. Other members

¹ *Servico Nacional de Aprendizagem Industrial (National Service for Apprenticeship in Industry).*

² *Comissão Brasileiro-Americana de Educação Industrial (Brazilian-American Commission on Industrial Education.)*

of the Field Staff of the Institute participate in the activities of CBAI under such terms and conditions as are agreed upon by the Superintendent and the Chief of Field Party. The Staff of Specialists of the IIAA are considered "guests" of the Brazilian Government, in that they are invited to work with the Ministry of Education and Health.

WORK PROJECTS FOR 1950-55

When I arrived by Pan-American plane on April 13, 1950, I was welcomed by the Staff of CBAI as the herald of a new Technical Staff to be recruited in the United States to cooperate with Brazilian technicians in a five-year program.

The foundation of a Cooperative Education Program was begun during the years 1946-1948, by CBAI and its staff of American and Brazilian Technicians. Unfortunately, the original staff of Americans had been called home due to a lapse in available funds. However, the groundwork had been laid and the lapse of funds resulted only in a temporary delay of 16 to 20 months. The Foundation Program called for Cooperative Work Projects to be carried on in one or more of the 23 Federal Technical and Industrial Schools.

When the Federal Decree Law of 1942 became operative, the Ministry in some instances built new school buildings and in others took over existing schools in the capital cities of the 20 States and the Federal District. These buildings were equipped with miscellaneous machine and hand tools for shopwork in a limited number of trades such as machine shop, printing, carpentry, cabinet work, ceramics, and other occupations authorized in the Decree Law. Much of the equipment was old and unsuitable for efficient instruction.

Pupils are enrolled at the age of 12 in industrial classes for pre-employment education and training programs. They come to the school with only 3 to 5 years of attendance in elementary schools and under the necessity of getting a job of some kind at the age of 14, when work permits are possible, they seek whatever education and work experience will help them to become wage earners.

Not all leave school at 14. Some remain and follow through the 4-year program (along with those who enroll at the age of 14) in specific trade and industrial subjects. Getting a wage earning job at the age of 14 does not necessarily rule out further schooling. Brazil has a system of apprenticeship through which employed youth and adults may continue their education and training for work in industry.

SERVICO NACIONAL DE APRENDIZAGEM INDUSTRIAL

In 1942 there was enacted a Decree Law providing for a Federal system of apprenticeship schools. These schools are located largely in industrial cities. In some instances they are located and equipped to serve one particular industry.

Pupils in the part-time apprenticeship classes usually are selected and placed in the school by their employers with a request for specialized education and training.

The apprenticeship schools are maintained by a one per cent tax on payrolls. This provides for building and equipment needs in addition to current operating expenses. There are about 100 apprenticeship schools in which 31,617 pupils (including part time and evening classes) were enrolled in 1950.

THE CBAI STAFF

The professional staff of CBAI is now being recruited to a total of 12 American technicians. In addition to the Technical Director, Dr. E. R. Plowden, who is

responsible for the program under Edward S. Sheridan, Chief of Field Party, there are 11 North American specialists. For the year 1951-52 the following activities, to which specialists are assigned, are covered in the Annual Plan: teacher training, electrical shop work, industrial surveys, welding shop work, job analyses, visual and auditory aids, instructional materials, machine shop, graphic arts, woodworking trades, occupational information and guidance.

Under the Plan each American specialist works with his Brazilian counterpart as a member of a team pulling in unison to get a specific assignment completed. The American member of the team is recognized as the leader. His prime concern is to develop in his counterpart a level of leadership ability in the Brazilian program equal to his own in the United States.

To accomplish this prime objective useful activities in the form of work projects are undertaken. There are no exercises or pseudo work jobs. All training is given on real jobs which are needed to improve the efficiency of vocational industrial education.

The brief period covered by the present five-year plan will be all too short to do all the things that need to be done, but the most needful things are being undertaken one by one and closed out when completed.

OBSERVATION AND TRAINING IN THE U. S.

The educational activities carried on by CBAI in Brazil are supplemented by an observation and training program carried on in the United States. Under this program CBAI selects teachers and directors employed in its program of vocational industrial education and, under a carefully planned schedule, sends them to the United States with a coordinator.

The Brazilian members of the CBAI staff specify the program of education and training needed by each member of the group. Before leaving Brazil they are given an orientation course in English and over subjects.

In the United States the Washington office of the IIAA enters into a contractual agreement with a college, university, or other educational agency having facilities for carrying out the program either on its own campus or elsewhere. Some trainees receive practical work experience in industry as learners. Others are given similar practical experiences in vocational schools as aids to teachers or supervisory officials. All are given a series of courses in methods of instruction, job analysis, preparation of instructional materials and lesson plans as a part of their professional training.

During the year 1950-51 a total of 20 men and women were sent to the United States for training purposes. Of this number 10 were selected to improve their technical knowledge and professional training in how to teach. The Brazilian technician, Dr. Armando Hildebrand, staff member of CBAI and a specialist in teacher training, accompanied the group and coordinated their educational experiences.

Another group of 7 men and women were selected to receive training for service as vocational counsellors in the vocational industrial schools of Brazil.

Both of these training programs were carried on under the general direction of Dr. Gilbert G. Weaver of the New York State Education Department.

In addition, Miss Nair Maria Becker, technician on the staff of CBAI in charge of education for girls and women, came to the United States in June of 1950 for 6 months. Her program was planned by CBAI and

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IIAA in cooperation with Louise Moore and Ata Lee, specialists in the U. S. Office of Education. It included an 8-week period of attendance at the Colorado A and M Summer School, a 2-week period in a workshop given in Los Angeles by the State of California, visits to a number of industrial schools for girls and women, and conferences with a large number of persons. During her stay in Los Angeles she enrolled in the Los Angeles Trade Technical Junior College (Frank Wiggins Trade School) as a regular student. For a period of four weeks she attended classes in dressmaking, power machine sewing and costume design. She also visited a number of industries and as a climax to her round of experiences she attended the 1950 Convention of the AVA in Miami, Florida.

Previous to the year 1950-51 about 65 other Brazilians had come to the United States to engage in similar activities. When all of these men and women have returned to their homes in Brazil and resumed

their careers as teachers, supervisors or directors in the public vocational industrial schools, they undoubtedly will do better work. They will pass on to their fellows some of their increased knowledge and skills.

The cooperative programs carried on directly in Brazil by American technicians, on the staff of CBAI, together with the supplementary programs carried on in the United States, are directed toward attaining the objective for which The Institute of Inter-American Affairs was created:—

"To further the general welfare of, and to strengthen friendship and understanding among, the peoples of the American Republics through collaboration with other governments and governmental agencies of the American Republics in planning, initiating, assisting, financing, administering, and executing technical programs and projects, especially in the fields of public health, sanitation, agriculture, and education."

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