In an underdeveloped country such as New Guinea, the viability of the economy depends on the ability of the inhabitants to supply the skilled manpower to compete in a technological world. The key to this is largely the mastery of a world language—in this case, English. Mastery must cover the vocation of the worker, since English in a vocational setting has significant differences in structure, vocabulary, and idiom from normal conversational English. The most effective way of developing this mastery is by utilizing vocationally-qualified persons trained to apply the modern techniques of foreign language teaching in a real vocational setting.
TEACHING ENGLISH FOR VOCATIONAL USE
IN AN UNDEVELOPED COUNTRY

-- K.R. Lamacraft

INTRODUCTION

Adam Curle, Harvard Education Review, 1962, stated that:

"Technical education is an expensive luxury which a developing country cannot afford to neglect."

and Bruce M. Cooper, "Writing Technical Reports" (Pelican, 1964) wrote:

"Technical terminology.....is the specialist's own type of shorthand. Its use saves pages of elaboration which would be necessary if he had to communicate to wider audiences."

But he also said:

"There is only one English and that is good clear English."

Unfortunately, vocational English is all too frequently not "good clear English", and there is the problem.

However, in an underdeveloped country, economic progress is critically dependent on a wider understanding of a work-oriented version of a non-indigenous language, such as vocational English.
The author is at present continuing his work in the languages of the Highlands District and plans to undertake comparative work and the study of specific grammatical features in individual languages. A detailed description and discussion of the individual families are also in hand.

T. D. C. Laycock, of the Australian National University, undertook extensive linguistic fieldwork in the Sepik District in 1959-60, and collected large amounts of materials on paper and tape, in particular in the languages of the Sepik District. Apart from gaining information on a considerable number of languages which had been unknown or little known, he established the existence of a large language family, which he called the Ndu Family. The Sepik and its Languages. Australian Territories, Vol. 1, No. 4. 1963, pp. 35-41.
BASIS OF THESE OBSERVATIONS

What I have to say is based on work, from 1957 to 1967, in the Territory of Papua and New Guinea. It was my job to set up a system of vocational education for the development of the country.

The Territory has over two million people, speaking more than 500 languages, most of which have no common bases. (See IATEFL 5.) Contact with the Western world started about 100 years ago in some islands, but in other areas contact has occurred only in the last few years.

Interrmarriage between tribes was unusual. Even communication between them was limited because of language barriers and antagonism between tribes. Movement on land was, and still is, most difficult and enervating.

The native cultures are animistic, overlaid in many areas by the religious beliefs fostered by about twenty-seven different Christian mission organizations. Some missions have utilized Melanesian Pidgin English; others have spread the use of the native language of the area in which they first started operations.---All are now required to teach English and to teach in English. I thought you would be interested to hear a small portion of a familiar tale, in Melanesian Pidgin. The first few phrases go like this: (See IATEFL 7.) P.2a

EDUCATION POLICY

Except for very limited and narrow educational efforts by religious missions, there was almost no formal education for native people until after World War II.
A long time ago there was a little girl whose name was Little Red Riding-Hood. People called her this because she usually wore a red hat on her head.
The initial Government policy was towards "universal primary education." After 25 years this policy—manifestly impossible from the start with the resources available—was changed to continuing schooling for those who had managed to progress through four or more years of primary education.

As a step towards unifying the people, education was in a common language. Of necessity, because of the need to import teachers from Australia, this was English. This also had the merit of opening up communication with the world and gave access to world knowledge.

**ECONOMIC SITUATION.**

From about 1955, there has been a rapidly-growing outside pressure for self-government almost immediately. For self-government to be feasible, native people had to be trained in government services, such as education, medical, and agriculture. They had to be made competent in trades, such as building, surveying, motor mechanics, electrical trades, electronics, printing, clerical, drafting, boat-building and repair. And they had to be trained to set up and to run commercial enterprises, and to conduct the business of government.

An additional drive towards the imparting of these skills was the significant economies to be obtained, in government and in private enterprise, from the employment of indigenous workers, compared with expatriates from Australia and elsewhere.
Table 1
THE GROWTH OF THE SCHOOL POPULATIONS
IN ADMINISTRATION SCHOOLS
T.P.N.G.


<table>
<thead>
<tr>
<th>School Year</th>
<th>Primary</th>
<th>Secondary</th>
<th>Technical</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Native T'Sch.</td>
<td>Non-Native 'A'Sch.</td>
<td>Post-Primary</td>
</tr>
<tr>
<td>1947</td>
<td>1049*</td>
<td>660</td>
<td>234*</td>
</tr>
<tr>
<td>6</td>
<td>1745*</td>
<td>665</td>
<td>336*</td>
</tr>
<tr>
<td>9</td>
<td>1920*</td>
<td>660</td>
<td>648*</td>
</tr>
<tr>
<td>50</td>
<td>1791*</td>
<td>733</td>
<td>639*</td>
</tr>
<tr>
<td>1</td>
<td>2707*</td>
<td>703</td>
<td>700*</td>
</tr>
<tr>
<td>2</td>
<td>3600*</td>
<td>782</td>
<td>726*</td>
</tr>
<tr>
<td>3</td>
<td>3841</td>
<td>859</td>
<td>826</td>
</tr>
<tr>
<td>4</td>
<td>3990</td>
<td>1062</td>
<td>895</td>
</tr>
<tr>
<td>5</td>
<td>5201</td>
<td>1230</td>
<td>904*</td>
</tr>
<tr>
<td>6</td>
<td>8060</td>
<td>1356</td>
<td>860</td>
</tr>
<tr>
<td>7</td>
<td>12364</td>
<td>1547</td>
<td>677</td>
</tr>
<tr>
<td>8</td>
<td>14519</td>
<td>1830</td>
<td>817</td>
</tr>
<tr>
<td>9</td>
<td>16913</td>
<td>1930</td>
<td>875</td>
</tr>
<tr>
<td>60</td>
<td>18442</td>
<td>1986</td>
<td>706</td>
</tr>
<tr>
<td>1</td>
<td>26884</td>
<td>2266</td>
<td>933</td>
</tr>
<tr>
<td>2</td>
<td>34217</td>
<td>2643</td>
<td>1314</td>
</tr>
<tr>
<td>3</td>
<td>40055</td>
<td>2758</td>
<td>1149</td>
</tr>
<tr>
<td>4</td>
<td>50181</td>
<td>3089</td>
<td>2746</td>
</tr>
<tr>
<td>5</td>
<td>58181*</td>
<td>3427</td>
<td>3444</td>
</tr>
<tr>
<td>6</td>
<td>64382*</td>
<td>3531*</td>
<td>4123*</td>
</tr>
</tbody>
</table>

* Break-up within columns based on various guides from written reports, not on official Tables.
Thus, vocational training was truly a key to a crisis situation. Effective vocational education was dependent on several things. The first was the ability to build up the concepts basic to the trade skills. -- The cultural background of all but exceptional cases was totally unsuited for understanding the cause/effect relationships absorbed incidentally by children in Western communities. The second was the understanding and acceptance of the concepts and demands of a wage economy by people traditionally attached to a subsistence economy, in which regular and continuing work had no place. The controlling factor was that of communication. -- It involved broadening the understanding and ability to use a common language (i.e., English) so that the people involved were able to learn and to perform skilled vocational tasks.

That is what I really wish to speak about briefly, but which I could not do without previously sketching in the fundamental social situation.

One more factor needs to be mentioned. Education was seen by the native people as a passport to non-manual work -- to membership of an elite. Technical education in most cases implied preparation for manual work so, initially, only those debarred from continuing academic schooling would consider entering vocational training -- as a last means of continuing their education! (See IATEFL 10.)

OBJECTIVES

The teaching of English for vocational purposes is regarded as a major contribution to the economic and socio-national development of the country.
TECHNICAL SCHOOLS

NUMBER OF PUPILS IN THOUS.


Staff in Technical Schools

Pupils in Technical

Apprentices
(Not included in total)

192 161 120 79 883 2670

(IAFL ET 10)
The language has to be the means of:

1. Communication between the teacher and the student, and a major medium of instruction;
2. Reception of instructions by employed persons;
3. Reporting by the employees to those with whom he has contact--supervisor or client;
4. Communication between persons on the same or inter-related jobs in the interest of safe, effective, and economical operation;
5. Obtaining technical information from reference material, as required by the job;
6. Inter-communication between people in similar work throughout the world.

My observations indicate that the above purposes apply extensively to underdeveloped countries, even to those in which the English language is used with some reluctance.

SOME SOURCES OF DIFFICULTIES FOR STUDENTS NEED EMPHASIS

Research in 1965/66 shows that New Guinea students entering vocational education at an average age of 19 years, after an average of seven years of schooling, had command of every-day English rather less than that of an Australian child of half that age, after four years of schooling. (M.Ed. Thesis, University of Sydney, K.R.L., 1967).

This was due to many causes, the chief of which was that a high proportion of the teachers were not natural or even good speakers of English.

It is also a pity that English has unnecessary complications in spelling, because this makes learning the language more difficult.
What I have to say applies more especially to workers employed in government, commerce, and industry. Vocational training for self-employment and village work had other problems.

The poor command of general English made vocational education difficult, so that it was necessary to give considerable time in technical courses to improving the use and comprehension of every-day English. Mr. Pattinson and other speakers have made this point, too.

Beyond this, the esoteric vocabularies and idioms of the various vocational areas proved a major challenge. In particular, the divergence between conversational English, vocational and otherwise, and the written English of technical books resulted in reference material frequently being unintelligible to the students, e.g.

Design of Mix.—The design of a concrete mixture consists of first selecting the water-cement ratio that corresponds to the desired strength, and then finding the most suitable combination of aggregates which will give the desired workability. Ordinarily, the driest consistency and the coarsest grading that will be workable under the given conditions are desirable, care being taken to avoid mixes that cannot be easily handled, puddled, and finished. Where the concrete must be plastic enough to fill the forms and surround the reinforcing bars with but little tamping or compaction by other means, the volume of sand in the average mix will be about two-thirds of the volume of coarse aggregate. However, if the concrete is compacted in the forms through impulses that are imparted by internal vibrators, satisfactory workability is obtained with less water and a lower proportion of sand; the desired strength can be obtained more economically by using less cement and more coarse aggregate.

Professor Streves' lecture outlined the basic differences and suggested some ways of improving the situation.
DEALING WITH YOUNG ADULTS

Because of the low abilities in reading/comprehension and conversation in English of students entering vocational training, compared with their maturity, there was very little suitably-written material with which the teacher could work.

While discipline was almost never a problem in classes, it was difficult to retain the interest of students in material not related to their chosen vocation, especially when it was based on an alien culture and prepared for children of approximately half the age of the technical students.

CULTURAL DIFFICULTIES

In many vocations, a general understanding of science is an essential basis to understanding work operations, the location of faults, and deciding on the best remedial action. When a person's cultural background and native language do not provide the necessary concepts, or the means of expressing appropriate concepts, that person faces a major problem in taking in and using the concepts. Thus, until a person commands a more suitable language well enough to think in that language, he will have great difficulty in trying to use the new concepts.

This makes clear the importance of a thorough command of English in the New Guinea situation or similar circumstances.
METHODS OF TEACHING

In order to teach a vocation in association with the development of a satisfactory command of both general and technical English, it was found necessary to conduct the teaching of English as an integral part of the vocational training. The vocational training also had, as far as possible, to be "on the job." This evolved into full-time continuous courses, much the same in content as Australian apprenticeship courses, but in which the work tasks were kept in step with the training.

Thus, every trade instructor, teacher, and lecturer became truly a teacher of vocational and general English, backing up the work of the English specialist. The potential for significant use of situational English was very great, particularly as work-groups were kept below 16 members and averaged about 10 to each instructor.

The technical schools were boarding schools, serving a region and always including a range of native languages. As a result, students had to use English as a means of communicating with most of their fellow students. This enforced practice in the use of English was an important factor in vocational progress--one which was lost when students lived at home.
For this reason (as well as others) even those within walking distance of home were required to live in—although week-end passes were made available fairly frequently.

TRAINING TEACHERS

Obviously, if every teacher was to be a teacher of English, his own English needed to be of the standard of a person who spoke English as his mother-tongue. In addition, he needed to appreciate the linguistic and conceptual problems of his students, and the appropriate methods of teaching English as a foreign language.

From this, it will be realized that the teachers were likely to be expatriates. They fell into two groups—trained teachers (frequently from Australia on secondment) and trade instructors. These latter were tradesmen or technicians who had to be trained as teachers. It became a major task to equip these vocational experts with the skills of teaching their specialty and the ability to further the objectives relating to the learning of English by the students.

In one way, the trade instructors brought about a significant change towards vocational education. They worked on the jobs as foremen/tradesmen of their groups, showing by example that "Europeans" work hard and get their hands dirty!

The success of the process began to show from about 1964 on, when native trade instructors were starting to take their places in vocational education and when some graduates of the scheme won responsible positions in private industry, in some cases as foremen with some expatriates in their teams.
DESIGN OF COURSES

No suitable courses of vocational English were discovered. Indeed, no ready-made really satisfactory course for teaching general English was found.

In the technical schools and colleges, which each gathered students from a considerable region, the range of ability in English on enrolment was extraordinary, though students were supposed to have completed six years of primary education. The task of the specialist English teacher became that of a remedial teacher, identifying common errors and working by situational methods, drills, and substitutions to eliminate them.

One constant problem was the need to develop fuller comprehension. It was noted that comprehension after hearing a story or description was better than after reading it. The mechanics of verbal structuring of the language interfered with the processes of noting and systematizing the material in the text.

While it was possible to set down the broad content of the general English course, the details had to be left flexible. The vocational application could more readily be detailed. However, the time available to train expatriate technical instructors in developing ability in vocational English was insufficient. Furthermore, some of these people did not see their role as appropriately covering the teaching of English at all. As by 1962 there was no career for them in New Guinea, one could feel some sympathy for their attitude, reflecting as it did the demarcation attitudes prevalent in Australian industry.
NEED FOR APPROPRIATE AIDS

Although much work has been done in supplying reading material and other aids for the teaching of English as a foreign language, little has been done for the vocational use of English. G.A. Pittman has supplied some texts which enter into this area. His "Clerical English" is a far more useful book than "Preparatory Technical English", which is too general. There are other texts for a few vocational areas, but I have yet to see a comprehensive and integrated set of audio-visual aids to apply English to a specific work area.

One sometimes grows impatient at the unnecessary complication of language which has grown up in work areas. To some extent, this will break down when the majority of the work-force is indigenous and not tied by expatriate traditions to unnecessary esoteric words and idioms.

A BRIEF COMPARISON WITH THE TEACHING OF ENGLISH TO MIGRANTS TO AUSTRALIA

In the last twenty-five years, a large number of many migrants who could not speak English have come to Australia. Some of these have been professional and other highly-skilled people. For them, the only problems were to have their qualifications recognized and to learn to communicate in English. Many had some knowledge of the language, which in fact obstructed their learning of correct usage and accurate communication. Nevertheless, those who really wished to master the language did so, largely with the help of classes sponsored by the Commonwealth Office of Education.
Over the years, the character of the migrant intake has changed. Recently, more unskilled persons have settled in Australia. Frequently, these have joined minority communities, so that the need for them to speak English has become less pressing. Even at work these people find little need for free communication in English. These migrants tend to commence classes at night but not to persevere. Of course, there are many earnest students, too, who seek to integrate fully into the Australian way of life—but it is the children who are the more likely to achieve this.

The Commonwealth Office of Education and, later, the Department of Education and Science have, over the years, from 1946, developed detailed courses, chiefly for use in part-time classes, and trained teachers to use them. These courses have the social needs and the outlook of adult students in mind.

Recent courses for migrants of tertiary level education have been on an intense, full-time, eight-week basis. Included in these courses have been attempts to move from general English to vocational English, but the range of vocations on a course has made this very difficult. Nevertheless, it has been this aspect of the courses for which the students show greatest appreciation. This is partly because the structure of their future work situations becomes clearer to them in the process of studying work-oriented language.

We can say that technical education in New Guinea has had the advantage of teaching the language in its appropriate setting, to homogeneous groups, using instructors who were experts in the vocational usage. In this way it has had higher potential for effectiveness than the teaching attempted in Australia to migrants.
However, cultural backgrounds of migrants have generally provided them with the appropriate concepts, so that it has been only verbalization that has had to be mastered. Well-educated migrants have usually done this well for themselves, when placed in an appropriate and friendly work situation.

CONCLUSION

In an under-developed country, such as New Guinea, the viability of the economy depends on the ability of the inhabitants to supply the skilled manpower to compete in a technological world. Thus, in one generation, it is necessary to try to bring a significant number of people from a Stone-Age past to match the skills of the workers and managers of the Western world.

The key to this is largely the mastery of a world language—in this case, English.

This mastery must be extended to cover the vocation of the worker, as English in a vocational setting has significant differences in structure, vocabulary, and idiom from normal conversational English.

The most effective way of developing this extension is by utilizing vocationally-qualified persons trained to apply the modern techniques of foreign-language teaching in a real vocational setting. This teaching needs to be supported by audio-visual aids and carefully-planned courses which move in step with the technical instruction and practice.
There is the need to train vocational specialists in language teaching; there is also the need to provide suitably-graded vocationally-based English courses, with appropriate aids. In this latter regard, because of the limited market in each vocation and the number of vocations, it is almost hopeless to rely on commercial publishers.

To whom should we go for help?