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ABSTRACT

"Linguistic ability" is a widely misused term in foreign language literature. This confusion prompted an investigation into language aptitude testing, the specific goals of which included determining: the distribution of language aptitude across ability range; the validity of Pimsleur's suggestions of combined verbal and auditory scores; and whether students are generally consistent in their pattern of scoring. On the first day of the investigation, 160 students at a high school in the Sydney suburbs completed a questionnaire requesting information about language background and interests. On the second day 151 of the students (9 were absent) took the Pimsleur Language Aptitude Battery. The data yielded the following findings, among others: (1) interest is more important than I.Q. or any other component of language aptitude in FL election and perceived difficulty; (2) evidence does not support use of a combined "verbal" and "auditory" score; and (3) students are not consistently "above average," "average," or "below average" in language potential. These and other findings reveal the importance of individualized instruction and the dangers of overgeneralization in FL instruction. This in turn assumes a commitment to the principle of equal opportunity for students in New South Wales. (Author/AM)

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'LINGUISTIC ABILITY'

Some Myths and Some Evidence

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Measurement and Evaluation

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INTRODUCTION

'Linguistic ability' is a widely used, frequently misused, and moreover, ambiguous term in educational thought and foreign language literature.

It is a term commonly heard among teachers referring to the assumed capabilities and/or achievement level of certain classes and particular students. Most frequently, 'linguistic ability' is defined in terms of the achievement of certain language goals which are deemed worthiest by those setting the goal. The meaning of 'linguistic ability' tends to be quite arbitrary. For example, the teacher who believes the worthiest goal of language study to be aural/oral communication would define a student's 'linguistic ability' in terms of his achievement in speaking and comprehending spoken language. On the other hand, the teacher who believes the worthiest goal of language learning to be comprehending the thoughts conveyed through literature would define 'linguistic ability' in terms of a student's performance in comprehending and conveying literary thought.

When one unfamiliar with the particular goal selection of the user comes upon a reference to 'linguistic ability', it is difficult to know just what the user means by the term. Similarly, when a foreign language course is directed to 'gifted' students or students of 'marked linguistic ability', what qualities or characteristics is the potential student supposed to possess? Is he supposed to have the potential of being a good writer? or of being a literary scholar? or of being a comprehending and discerning listener? or of being a fluent speaker? or of being able to acquire a native-like pronunciation? or do we simply mean he is supposed to possess an above average I.Q.???

The meaning of 'linguistic ability' is further complicated by its association with a variety of other factors, such as sex, musical training, I.Q., bilingualism and interest in FL study, which may not be relevant to all situations. Are generalized beliefs such as that 'girls are innately better at FL study' really relevant or helpful to teaching a foreign language in a particular school?

In accordance with the educational doctrine of 'equality of opportunity for all adolescents', our main task is to seek ways of making FL study relevant and appropriate to all students, across the ability range. This 'ability range' refers to the range of all students across the state and across the country, rather than to the limited range of students presently enrolled in FL classes. To this end, we need to clarify our understanding of 'linguistic ability' so that our best intentions for FL innovations will not be defeated by misconceptions which limit the sphere of those whom we consider to be 'linguistically able'.

This confusion surrounding 'linguistic ability' has led me to conduct the present investigation into language aptitutde testing using a group

of lower SES Form I students. A test group that was non-representative of the present foreign language enrolments from Form II - Form VI was preferable for several reasons. Many foreign language educators assume that certain relationships exist between I.Q., language aptitude abilities, interest in FL study, and interest in a variety of other school subjects. These assumed relationships operate to designate implicitly and explicitly, those who are not 'linguistically able' and those who are 'language material'. If evidence from one school shows that these assumptions are neither relevant nor helpful in a specific situation, and that actual student patterns of responses in a given school deviate from the assumed patterns, then we may legitimately raise serious questions regarding the validity of 'sameness' of FL curricula for every school and replace the elitist concept of FL study, FL success, and FL ability, with a realistic approach to teaching foreign languages across the ability range.

LINGUISTIC ABILITY IN THE SYLLABI

The term 'linguistic ability' often appears in the preambles of foreign language syllabi to designate which students should enter in which course or level of study, and what their goals of study should be. The following excerpts from FL syllabi exemplify the vagueness communicated by the term.

> *"The 2 Unit Course...caters for students of better than average linguistic ability.*
>
> *The 3 Unit Course...caters for students of marked linguistic ability.*
>
> *The 2 Unit A Course...is designed for those who have an interest in the study of Hebrew. (N.S.W. Hebrew syllabus for Form V and Form VI.)*

Taken in context it is implied, by the process of elimination, that students enrolling in the above 2 Unit A course should be of average or below average 'linguistic ability'.

Similarly, the preamble of the new German syllabus in N.S.W. for Form V and Form VI states:

> *"...The 2 Unit Course is the Core Course and is intended for those with linguistic and literary interest and ability; the 2 Unit A course is...for those who do not seek training in written expression in German but in reading German texts for general interest or for specific purposes...The 3 Unit Course is... intended for those with outstanding linguistic ability."*

In an analogous statement, the preamble to the Greek syllabus in N.S.W. for Form V and Form VI omits the word 'linguistic' altogether:

"The 3 Unit Course is intended for students of marked ability who wish to study the subject in greater depth than the 2 Unit Course."

The most curious aspect of the myth surrounding 'linguistic ability' is that it often appears to be defined after-the-fact; that is, we often implicitly assume that those who study a foreign language at an advanced level and succeed have 'marked linguistic ability' while those who do not succeed or do not study at an advanced level do not have 'marked linguistic ability'. Yet concomitantly, somehow a prior designation of one's 'linguistic ability' strongly suggests the course of foreign language study a student will follow, if he will follow one at all.

An analysis of the context in which the term 'linguistic ability' is used here in New South Wales and the criteria by which it is measured, discloses the operational definition to be 'fluency in conveying, graphically, one's comprehension of language which is presented graphically.' When 'linguistic ability' does not communicate this specialized meaning, it most frequently becomes synonymous with the term 'general intelligence' or 'I.Q.' The definition tends to be circular. The accuracy of these definitions are insured by means of the goals set and the measures of success.

EFFECTS OF USING THE TERM 'LINGUISTIC ABILITY'

While the definition of the term appears ambiguous, the effects of its usage are not. Each year fewer students enter our language classes as the general secondary population increases in size and diversity. The elusive 'linguistic ability' phenomenon becomes transmitted to the students, and by the time of Form II and Form V foreign language election, the average student feels that he would not be suited to such study nor would such study be relevant to him. While those who do enrol comprise the highest I.Q. group in the curriculum across the State of N.S.W., large proportions of language students finish their courses with feelings of inadequacy because only a few are considered to possess 'marked linguistic ability' from the beginning, and those remaining are considered 'average' or 'poor'. (See Robinson, 1973.)

The situation parallels only too disturbingly Benjamin Bloom's observation of the American school system:

"Each teacher begins a new term (or course) with the expectation that about a third of his students will adequately learn what he has to teach. He expects about a third of his students to fail or to just 'get by'. Finally, he expects another third to learn a good deal of what he has to teach, but not enough to be regarded as 'good students' This set of expectations, supported by school policies and practices in grading, becomes transmitted to the students through the grading procedures and through

the methods and materials of instruction. The system creates a self-fulling prophecy such that the final sorting of students through the grading process becomes approximately equivalent to the original expectations.

This set of expectations, which fixes the academic goals of teachers and students, is the most wasteful and destructive aspect of the present educational system. It reduces the aspiration of both teachers and students; it reduces motivation for learning in students; and it systematically destroys the ego and self-concept of a sizeable group of students who attend school ... under conditions which are frustrating and humiliating year after year (Bloom, 1968)."

Considering the selectivity of the foreign language candidatures at both the school certificate and higher school certificate levels, these expectations are particularly devastating. The 'ordinary' foreign language student, even in the bottom third of the classroom, is generally an average or above average student in terms of general intelligence and in terms of the general student population. The lack of success and feelings of inadequacy he may experience lead not only to a negative attitude toward foreign languages, but possibly also toward the people who speak them. (See Lambert and Gardner, 1962.)

Thus our strategies for providing a modicum of 'bilingual /bicultural' experiences for our secondary school students have been self-defeating. Likewise has our effort to instil in our students a desire for continued learning been self-defeating.

The consequences of categorizing students and determining curricula on the basis of a generalized concept such as 'linguistic ability', which is at best, misunderstood and ill-defined, are too serious to be ignored. We need to seek an alternative to general 'ability' classifications.

LANGUAGE APTITUDE - A DEFINITION

In order to avoid the dangers of past associations with the term, we shall replace the ambiguous term 'linguistic ability' with 'language aptitude', since the latter has been the subject of research and examination for some years, and thus lends itself to a more objective definition. (Carroll and Sapon, 1958; Carroll, 1963, 1971; Pimsleur, 1964, 1966.)

For those who may oppose this replacement on the grounds that 'linguistic ability' is of a different nature than 'language aptitude', a reference

to the actual term 'linguistic' may be relevant.

In Webster's Unabridged Dictionary, 'linguistic' is defined as:

> *"of or relating to language or to the knowledge or study or languages; relating to linguistics or to the affinities of languages.*
>
> *(Webster's Dictionary, p.1315)*

'Linguistics' is defined as:

> *"the study of human speech in its various aspects (as the units, nature, structure and modification of language, languages, or a language including esp. such factors as phonetics, phonology, morphology, accent, syntax, semantics, general or philosophical grammar, called also linguistic science, science of language".*
>
> *(Ibid. p. 1316)*

'Ability' is defined as:

> *"1 the quality or state of being able*
> *2 natural talent or acquired proficiency, esp. in a particular work or activity: aptitude."*
>
> *(Ibid. p.3)*

Thus, one's aptitude for learning languages should, according to Webster's definition, equate one's 'linguistic ability'.

Pedagogically speaking, how can we define language aptitude so that its usage may be helpful in determining language curricula and in designating the characteristics of students for whom specific classes are designed?

The first important point to be made is that language aptitude is defined in terms of the time it takes to master a foreign language. (See previous discussion in STATE OF THE ART, 1973, p. 17-18). Contrary to popular belief, it is a composite of psycholinguistic abilities which everyone possesses.

> *"As far as is known, any individual who is able to use his mother tongue in the ordinary affairs of everyday life can also acquire a reasonable approximation to competence in a second language, given time and opportunity to do it."*
> *(Carroll, 1958, Manual, p.21)*

Individuals vary only in the degree of language which can be acquired within a given period of time only under equal conditions of motivation and quality of instructions. (Carroll, 1963; Bloom, 1968.) That is, if motivation is enhanced and instruction is modified to attend to the special characteristics of the individual or the group, there is no evidence to suggest that pupils of different initial language aptitude levels will not master a similar amount of language within a given time period.

It is considered that only 1% to 5% at the bottom extreme have special disabilities for particular learning. Similarly, only 1% to 5% at the top are considered likely to have a special talent for the subject. (Bloom, 1968.)

COMPONENTS OF LANGUAGE APTITUDE

The factor-analytic studies conducted by Carroll and Sapon have determined that the composite of abilities termed 'language aptitude' is made up of "several relatively independent abilities". (Carroll, 1958.) "Those that have been most clearly identified are phonetic coding ability, grammatical sensitivity, and inductive ability." (Carroll, 1973). Carroll defines phonetic coding ability as "the ability to identify, and store in long-term memory, new language sounds or strings of sounds." Grammatical sensitivity is defined as "the individual's ability to demonstrate his awareness of the syntactical patterning of sentences in a language and of the grammatical function of individual elements in a sentence." (Ibid.) The third factor according to Carroll is inductive ability, which in the case of language learning is "the ability to examine language material (in either auditory or printed form) and from this to notice and identify patterns of correspondences and relationships involving either meaning or grammatical form". (Ibid.)

Carroll and Sapon designed the MODERN LANGUAGE APTITUDE TEST (MLAT) to measure these abilities by means of a five-part test including number learning, phonetic script, spelling clues, words in sentences, and paired associates. (See Carroll and Sapon, 1958, Manual, p.3, for a description of each subtest.)

Through a series of research studies, Dr. Paul Pimsleur and his associates concluded that "aptitude for learning modern foreign languages could be defined in terms of three main factors: (1) verbal intelligence, that is, the knowledge of words and the ability to reason analytically in using verbal materials: (2) motivation, an expression of interest in studying a modern foreign language; and (3) auditory ability, the ability to receive and process information through the ear." (Pimsleur, 1966b, Manual, p.14.)

The PIMSLEUR LANGUAGE APTITUDE BATTERY (PLAB), developed for use in grades 7-12, contains five subtests to assess different aspects of these factors. These are:

Interest in learning a foreign language - designed to give an indication of a student's motivation

Vocabulary - word knowledge in English, designed, along with the following section on language analysis, to provide information regarding a student's verbal ability and his ability to handle the mechanics of a foreign language

Language analysis - ability to reason logically in terms of a foreign language.

Sound discrimination - ability to learn new phonetic distinctions and to recognize them in different contexts, designed to test the student's ability to hear and retain new sounds.

Sound-symbol Association - an association of sounds with their written symbols, designed to measure a student's ability to associate English-language sounds with their written symbols. (Pimsleur 1966b, MANUAL, pp. 3, 10, 14.)

According to the author, scores from the vocabulary subtest and the language analysis subtest can be combined to give a single verbal ability score. Similarly, scores on the sound discrimination subtest and the sound-symbol association subtest can be combined to give a single auditory score. These combined scores may serve to identify "those who may do well and those who may do poorly in the listening and speaking phases of language learning" and similarly, those who may do well and those who may do poorly in the reading and writing phases of language learning. The validity of using such combined scores in all schools will be examined in the present study.

The 'verbal intelligence' factor as defined by Pimsleur appears to include both the 'grammatical sensitivity' and 'inductive ability' factors identified by Carroll and Sapon. Similarly, the auditory ability factor identified by Pimsleur and associates appears to approximate the 'phonetic coding ability' factor identified by Carroll and Sapon. Carroll also underlines the role of motivation in foreign language achievement in his MODEL OF SCHOOL LEARNING. Additionally the relatively low intercorrelations of the parts within both the MLAT and the PLAB provide evidence that the abilities measured by each subtest are relatively independent. Thus, we may conclude that the investigations of Carroll and Sapon, and Pimsleur and associates have led to similar findings regarding the nature of a student's potential achievement in foreign language study.

LANGUAGE APTITUDE vs I.Q.

The research conducted by Carroll and Sapon as well as that of Pimsleur and associates have led the researches to conclude that

general intelligence or 'I.Q.' may not be used as a synonym for 'language aptitude' nor is it the main associate of 'language aptitude'.

Carroll stated that:

> *"Facility in learning to speak and understand a FL is a fairly specialized talent (or group of talents) relatively independent of those traits ordinarily included under intelligence." (Carroll, 1963.)*

Carroll, however, has stated that the 'inductive ability factor' found through his factor-analytic study of language aptitude is the component of language aptitude which is probably most associated with general intelligence. (Carroll, 1973) (Evidence from the present study, which does not support this assumption will be discussed under 'findings'.)

According to Pimsleur's investigation on Underachievement in FL learning,

> *"There does exist a 'talent' for learning foreign languages - that is, a special factor beyond intelligence and industriousness which accounts for how well an individual succeeds in a language course. Our evidence indicates this special factor is auditory ability, which may be defined as the ability to receive and process information through the ear." (Pimsleur, 1964 p. 135.)*

The present research does not deny the existence of a general relationship between I.Q. and language aptitude. By citing the above, I aim to stress that research to the present has found no peculiarly strong relationship between I.Q. and one's ability to master a foreign language - no more so than in the case of learning in other areas of the curriculum.

> *"Within very broad limits, of course, I.Q. or 'intelligence' is a correlate of foreign language success, but it is much less related to foreign language success than it is to many other types of school courses ... Most of the commonly employed intelligence tests measure a number of abilities simultaneously - verbal ability, reasoning ability, memory ability, and others. While a few of these abilities may be relevant to foreign language success, most are not and their net effect is to depress the correlation of intelligence with foreign language success." 1 (Carroll and Sapon, 1959 Manual p. 22.)*

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1 *It is interesting to note that measures of numerical ability comprise one-half of the standard intelligence tests.*

In order to examine the relationship of I.Q. and language aptitude within the educational and social context of a particular school, the present experimental study compares I.Q. with measures of each individual component of language aptitude as well as with other variables considered to load heavily on I.Q., such as motivational orientation toward FL study, school aspiration, and favourite subjects in school. In this particular school, I.Q. has little relationship to the other variables studied.

POTENTIAL DANGERS OF LANGUAGE APTITUDE TESTING

Warning about tests

Any form of student testing can be a hazardous activity if the results are not interpreted cautiously. It is well-known that judgements made on the very best tests are fallible, and we must be careful to give test results no more significance than they deserve. The careful qualifications of the authors of any well-constructed test are sometimes ignored in the final interpretation of the test results by the user.

In speaking of the PIMSLEUR LANGUAGE APTITUDE BATTERY, the author cautions:

> *"It should be stressed...that scores for this Language Aptitude Test, like the results of any test, are merely data about students... The test scores by themselves provide no clear-cut solutions to educational problems, nor can they be expected to point in mechanical fashion to appropriate action to be taken by teachers or other school personnel." (Pimsleur, 1966b, Manual, p.7.)*

There is a danger that test scores may be treated as definitive statements which may lead to inflexible FL programs.

Carroll similarly qualifies the implications one may validly make about the MODERN LANGUAGE APTITUDE TEST scores:

> *"The MLAT does not claim to say whether an individual has a 'language block' or some inherited disposition or trait which will prevent him from learning a foreign language...It is simply a measure of the individual's present status with respect to this particular ability..." (Carroll and Sapon, 1959, Manual, p.20.)*

This composite of abilities known as 'language aptitude' only partially accounts for foreign language achievement. Another hazard of language aptitude testing is that partial information may be treated as a student's total potential for success.

Supporting a self-fulling prophecy

Possibly the greatest danger of language aptitude testing is that the data obtained could be used to facilitate teaching of the present subject-centred goals rather than to facilitate learning of student-centred goals set according to student needs and specific learning characteristics. What could result by ranking total scores is the replacement of hierarchical 'ability' classifications based on I.Q. by hierarchical 'language aptitude' classifications based on the test results. Ranking students into three or four major categories based on total test scores would assume that students are generally 'poor', 'good', or 'superior' on all parts of the language aptitude tests, which may not be the case.

Hierarchical classifications may lead to exclusion from FL study of a large number of students (presumably those who ranked in the bottom third) and/or discrimination against others in terms of goals set, method of instruction, and practices in grading. As Pimsleur states:

> *"No child should be barred from the opportunity to study a foreign language." (Pimsleur, 1966a.)*

This implies that no child should be barred either implicitly by the setting of goals and standards inappropriate to him, nor explicitly on the basis of 'cut-off' scores which tend to exclude the bottom third or fourth of an average group. In an educational system built on the principle of 'equality of education for all adolescents', it would appear that 'cut-offs' could apply only in the severest cases of language retardation where time might be more efficiently spent in remedial training in the native language. What should be barred according to such an educational philosophy are unrealistic expectations at both ends of the achievement scale.

> *"We have for so long used the normal curve in grading students that we have come to believe in it. Our achievement measures are designed to detect differences among our learners, even if the differences are trivial in terms of the subject matter.)*
>
> *If we are effective in our instruction, the distribution of achievement should be very different from the normal curve. In fact, we may even insist that our educational efforts have been unsuccessful to the extent to which our distribution of achievement approximates the normal distribution." (Bloom, 1968, p.2.)*

If we use language aptitude test scores primarily for the purpose of predicting the overall achievement of an individual, relative to other individuals, we may run the risk of again categorising students based on a generalized concept and losing information regarding specific learning differences. It is this specific information which may help us to improve the effectiveness of instruction for all students across the ability range. Using general classifications which lack such diagnostic information may insure a student's place in the 'ability range' and support the self-fulfilling prophecy which encourages optimum achievement for some and discourages achievement for others.

SPECIFIC GOALS OF THE PRESENT PROJECT - A SUMMARY

The specific goals of this project are:

1) to determine the distribution of language aptitude across the ability range in an entire Form I of a particular high school in the Sydney area serving a predominantly lower SES community.

2) to determine the manner in which individual scores on the subtests cluster, that is,
   i. to determine whether Pimsleur's suggestions of combined verbal and auditory scores validly represents combinations made by students in a given school, and

   ii. to determine whether students are generally consistent in their pattern of scoring, being consistently poor, average, or superior on all subtests, thereby reflecting the usefulness of classifying students in a particular school on the basis of total PLAB scores.

3) to systematise the pattern of individual student strengths and weaknesses in language aptitude, with a view to:
   i. curriculum design (say the instruction of units of work for specific purposes)

   ii. placement into qualitatively different FL classes based on clustering of specific language aptitude abilities.

4) to examine the relationship in the school of I.Q., previously measured, to each component of language aptitude and to examine the specific assumption that the subtest on 'language analysis' thought to involve inductive reasoning ability and grammatical reasoning ability is more highly correlated with I.Q. than the other language aptitude variables in the school.

5) to examine the interrelationship in the school between the specific subtests of the PLAB with I.Q., musical training, bilingualism, desire to elect FL study in Form II before school intervention and motivational orientation of that decision, school aspiration and vocational aspiration, in order to establish the relevance of applying generalized beliefs and general ability classifications to all school situations.

DESIGN

On two successive days during the first term of the 1974 school year, the Form I students of a co-educational high school in the outer suburbs of Sydney responded to a questionnaire prepared by the investigator and the PIMSLEUR LANGUAGE APTITUDE BATTERY. (PLAB.) Part 1 of the PLAB which requested 'grade-point-average' was excluded due to a lack of this information. The 160 students tested were engaged in the first term of a course entitled, 'An introduction to foreign languages'. The same language teacher instructed all the language classes.

The students ranged in I.Q. from 76 to 130+ with an average I.Q. equal to 100, which indicated that the group was representative of the population in this regard. The standard deviation was 4 points less than the normal S.D. of 15, which made the test group just slightly less heterogeneous in I.Q. than is the entire Form I population.

On the first day of testing, the students completed a questionnaire requesting information as to their language spoken at home, previous second language training, musical training outside of school, favourite and least favourite subjects in school, intention to elect FL study for the coming year in Form II and reasons for this decision, favourite and least favourite components of their present FL instruction, intended length of stay at school, and vocational aspiration.

The questionnaire also requested information regarding the students' desire to travel abroad and their impressions of and experiences with people of different nationalities. (These findings will be reported separately and discussed at length in a forthcoming paper.

On the second day of testing, 151 students in the test group responded to the PIMSLEUR LANGUAGE APTITUDE BATTERY, designed for use in Forms I-VI (or grades 7-12.) Nine students of the total test group were absent on this day. Additionally one class of 28 students did not complete the last subtest on sound-symbol association. Therefore, total PLAB scores and patterns of individual response on the PLAB were not calculated for these 28 students. However, their scores were included in all other calculations.

The data were interpreted by a variety of analyses [2] Responses which could be categorised ordinally were assigned numerical values. Relationships between variables categorised ordinally were established by means of a correlation matrix. In the case of responses which had no ordinal meaning, responses were grouped into non-ordinal categories that were operationally defined. Categories of responses for each variable were then cross-tabbed with ordinal and non-ordinal categories of responses on other individual variables. A profile of responses for each student was established, and all the variables were analysed by means of a cluster analysis to see which variables formed major groupings or clusters, and how they divided into subgroups or smaller clusters. Additionally, individual patterns of student responses on the PLAB variables 3-6 were established by arranging each student's scores from best to worst on the subtests for vocabulary, language analysis, sound discrimination, and sound-symbol association. Comparability of these subtests which included unequal numbers of items and unequal weightings was established by ranking the scores on each subtest and comparing the ranked scores for each student.

FINDINGS

The results of the study apply only to the specific context in which they were obtained and may not generalized to other schools or schools in general. The purpose of the study is to debilitate the usage of generalizations by investigating the particular characteristics of students in one particular school. An underlying principle supporting the study is that curriculum decisions should be as personal to the needs of individual students as is possible and that uniform, centralized decisions about FL learning are partly responsible for the contemporary decline in student numbers.

All data were collected at the beginning of term I, prior to any form of implicit or explicit school intervention regarding who should elect FL study in Form II. The data only represents a student's present status with regard to his school and vocational aspirations and his intention to elect FL study in Form II.

VARIABLES SHOWING LITTLE IMPORTANCE IN THIS SCHOOL

Sex

In this particular study, sex was not related to any aspect of language aptitude, nor to any form of school or vocational aspiration. The only difference that did appear revealed an interesting juxtaposition of past findings (Wykes and King, 1968.) There was a slight

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2 *I am indebted to Mr. Peter Hall, Chief Research Officer, Centre for Research in Learning and Instruction, N.S.W. Department of Education, for the computer programming.*

tendency for boys to be more interested in their present FL instruction than girls, although girls found present FL study slightly less difficult than boys as compared to their other studies. Girls also tended to have more musical training outside of school than boys.

Musical training

In order to determine whether musical training outside of school was related to ability to perform auditory tasks for this group of students, musical training was included in the study. No relationship was observed between musical training and the subtest on sound discrimination, sound-symbol association, or any other variable in the study. This finding coincides with the recent findings of Jacobsen and Imhoof, 1974, who did not find any relationship between proficiency in speaking and musical training in their test group. Of course, in both instances, degree of musical training might not reflect musical ability.

Bilingualism

Unlike the findings of Jacobsen and Imhoof who found a positive relationship between proficiency in speaking and bilingualism attained prior to the age of twelve, no relationship was observed in the present study between bilingualism and any aspect of language aptitude tested. The bilinguals, however, did show a slight tendency to desire election of FL in Form II more than the monolinguals.

Bilingualism was not negatively related to I.Q. or any variable of the study. In fact, there was a slight tendency for bilinguals to plan on staying in school longer than monolinguals for this group of students. Bilinguals in this school were children of migrants.

I.Q.

Measures of I.Q. did not prove to be very helpful for foreign language planning in this school. There was no relationship observed between I.Q. and Pimsleur's measure of interest in learning a language or with a student's expressed desire to elect FL study in Form II. (It must be stressed that these responses were obtained prior to any form of school intervention that may occur at the actual point of choosing elective subjects.) Similarly, I.Q. did not appear to be related to a student's expressed difficulty of present FL instruction as compared to his other subjects. A particularly interesting finding was the observed weak relationship between I.Q. and the PLAB subtest on language analysis which was designed to predict for one's ability to handle the grammar of a language. In this study, I.Q. was more weakly related to the subtest on 'language analysis' than to any of the other PLAB subtests including vocabulary, sound discrimination, and sound-symbol association.

Difficulty

The students' expressed difficulty of the present FL instruction as compared to their other school subjects did not show any relationship to their expressed attitude toward election of FL study in Form II. Similarly, when asked to explain the reason for their attitude, fewer students mentioned reasons of 'difficulty or ease' than anything else mentioned.

Contrary to what one might expect if sound discrimination were an important component of the present language instruction, the bottom third of students on the sound discrimination task based FL election/non-election least of all on difficulty.

There was also no observed relationship between expressed difficulty and a student's I.Q. or his total PLAB score. The implication is that within this particular test group, generalised ability in the form of I.Q. or language aptitude does not necessarily relate to the degree of difficulty or ease a student encounters in his language study. Other factors in the learning environment itself, such as the planning of effective instruction in terms of goals and methods appropriate to the students, may affect student experience more than his general ability.

Utility

When students were asked to explain why they would or would not like to elect FL study in Form II, or what their decision would depend upon if they were undecided, very few students based their decision upon 'utility' - e.g. degree of 'usefulness' of the subject for travel or vocation. Out of the four categories of responses expressed, which included interest/non-interest; external conditions; utility; and difficulty, only 33 out of 160 students mentioned reasons relating to 'utility'. In this school, lack of 'use' for a foreign language does not appear to be the main cause for lack of desire to enrol in Form II.

VARIABLES SHOWING SALIENT IMPORTANCE IN THIS SCHOOL

The role of interest

The finding most relevant to planning optimal FL instruction in this school is that interest was more strongly related to a student's intention to elect FL study in Form II than any other variable in the study, including all the 'ability' variables.

In a technological society becoming increasingly more pragmatic, it has often been claimed that school courses must become more practical and useful in orientation if they are to motivate and attract students. Often the decline in FL study has been attributed to lack of direct usefulness of the subject for vocational purposes, while those who try to encourage FL enrolments often appeal to the usefulness of knowing another language for travel. This claim does not appear relevant to this particular group of students. Observed findings in this school suggest that these particular students are more 'integratively' oriented toward FL study and most frequently choose against FL study when 'integrative' motivations are not satisfied.

For example, while explaining the reasons for their attitude toward FL election, students attributed FL election or non-election to interest/non-interest twice as often as to anything else they expressed. The same finding re-appears in the cross-break table between responses of 'what subject students like least' and 'FL election in Form II'. For the few students who chose present FL instruction as the subject they liked least, lack of interest was expressed as the reason for non-election twice as often as any other reason, such as difficulty or lack of use.

The significance of 'interest' to FL planning in this school continually re-appears throughout the correlation matrix, the cross-break tables, and the cluster analysis. The twenty-two variables cluster into two major groups. One group includes the basic 'ability' variables as well as what students like most and like least about FL study. The other group includes what we may call the 'non-ability' variables. The most important feature of the groups is that Pimsleur's interest item, the investigator's comparative interest item, and student reasons for intention to elect or decline to elect FL study cluster together with the 'social' variables, such as school aspiration, vocational aspiration, and bilingualism as well as comparative difficulty of FL study, rather than with the 'ability' variables such as I.Q., the PLAB total, and PLAB subtests.

When an analysis was made to determine the relationship between academic interest, 'ability' - i.e. I.Q. and 'language aptitude' - and type of motivational orientation with respect to FL election, it was clear that all students across the ability and language aptitude range in this school were equally interested in FL study and equally diverse in their motivations for FL election or non-election in Form II, prior to any school intervention at the actual time of FL election. This finding was observed through the division of scores on I.Q., the total PLAB, and each of the language aptitude subtests into three groups (top third, middle third, and bottom third) which were then cross-tabbed individually with the following variables: 1) what students like most about present FL study, 2) comparative interest of present FL study, 3) intention to elect FL study in Form II, 4) reason for expressed attitude toward Form II

FL election, 5) comparative difficulty of present FL instruction, 6) students' favourite subject in school, 7) students' least favourite subject in school, and 8) school aspiration.

Results showed that those students in the top third on I.Q. or on any subtest were not more 'integratively oriented' than students in any other group, which reconfirmed the lack of correspondence between 'interest' in present FL study and 'linguistic ability' or 'general ability' for this group of students. If anything, interest was more frequently the basis of FL election or non-election among the middle and bottom groups. Fewer students in the bottom third I.Q. group gave 'utilitarian' reasons than did those in either of the other I.Q. groups.

Similarly, when basis of FL election was cross-tabbed with 'favourite subject in school', 'utility' was the category least frequently expressed by those who preferred non-academic subjects. On the other hand, more students whose favourite subject was English expressed utilitarian reasons for FL election/non-election than reasons in any other category. The cross-tabulation between 'school aspiration' and 'interest in FL study' (prior to school intervention at the actual time of election) again confirmed the lack of association between 'interest' and any form of 'elitism'.

Thus, we may conclude from our findings that 'interest in FL study' is at least as important a factor, if not more so, in the case of the non-academically oriented, average I.Q., average language aptitude, and non-university oriented student in this school as it is with the academically elite population.

What the findings consistently underline is probably something we have always known, though perhaps less frequently put into serious practice: above all, make FL study interesting to the students! In this school, interest is more important to FL election and to a student's perceived difficulty of the course than is I.Q. or any component of language aptitude.

What students like most about FL study

Having observed that 'interest' is the component of FL study most crucial to FL planning in this school, the findings which shed light on the specific nature of 'interest' are particularly valuable. What aspects of the present FL instruction were the students most interested in? What did they like most and least about the present FL course?

Overwhelmingly, Form I students in this school expressed 'speaking' as their favourite aspect of the present FL instruction. (The category 'speaking' included 'saying words', 'speaking' and 'speaking to communicate with other people'.) 'Speaking' was clearly favoured by the majority of all students in this group, across the ability range, notwithstanding differences in academic orientation, school aspiration, vocational aspiration, I.Q. and/or language aptitude.

This finding was observed through a variety of cross-break tables. 'Speaking' was mentioned as the favourite aspect of FL instruction over twice as often as anything else mentioned. (For a description of the eight categories expressed, see Appendix, p.42.) On the other hand, 'speaking' was rarely mentioned as what students disliked most. Surprisingly, no one mentioned any aspect of 'reading' or 'writing' as their favourite aspect of the course.[3]

Not only was 'speaking' favoured by the majority, but it was also preferred more frequently by the higher ability groups and academically oriented than by the lower ability groups. For example, those who preferred 'speaking' were much less often those who disliked Maths and English. The majority of those students[4] who disliked non-academic subjects liked 'speaking' the most. On the other hand, the vast majority of the small group who disliked 'speaking' were in the bottom third group on 'language analysis'. Similarly, the bottom third I.Q. group disliked 'speaking' more frequently than any other group. This juxtaposition (which pertains only to the small group of students who disliked 'speaking') was reconfirmed in student attitudes toward 'writing'. A surprisingly low number of students in the bottom third of the sound discrimination group disliked 'writing' the most. In contrast, more students in the top third of 'sound discrimination' disliked 'writing' than did students in any other third.

Thus, the 'less able' students in this school from the point of view of language analysis, sound discrimination, and I.Q. clearly had less objection to written work than other groups. Therefore, it would be folly to arbitrarily assign 'less able' students in this school to classes which emphasized 'speaking' as it would to arbitrarily assign those of 'marked linguistic ability' to classes which emphasized 'writing'. The belief that 'speaking' should be the goal of FL study primarily for the lower ability, non-academically oriented groups is clearly irrelevant to language planning in this school.

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3 To ensure that the categories were not expressed in direct proportion to the amount of class time devoted to each category, the teacher estimate of time allocated to specific skills was obtained. According to the teacher, approximately equal amounts of class time were dedicated to oral/aural skills, reading/writing, and background/cultural studies.

4 To determine the probability of these relationships occurring by chance, expected frequencies for numbers in each cell of the cross break tables were calculated on the basis of random placement. Only those relationships which diverged greatly from the expectancy are reported here.

Due to the importance of student interest, and the expressed student interest in 'speaking', it might be well to emphasize 'speaking' as the principal goal of all language classes in this school. For the small group who disliked speaking and appeared less able in terms of language analysis, sound discrimination, and I.Q., it would be necessary to allow ample opportunity to process information by other means in addition to aurally - e.g. allow internalization of the rules necessary for 'speaking' through written practice. This group of students might also develop a written project relating to the themes being conveyed through the spoken word which could account for a sizable portion of their class work.

This type of 'individualisation' which should be based on student needs accords with the other main finding regarding the nature of student interests and dislikes. In this school the most frequently expressed dislikes involved what may be termed 'course-pupil' interaction - i.e. how the course appeared to them, such as interesting, boring, useful, useless. The numbers in the latter category were too small to be meaningfully subdivided further. What is significant is that the main dislikes involved the relationship of the course to the pupil, which underlines the need for individualisation of FL study in this school to adapt to specific learner needs and interests. And for this group of students, the principal interest with respect to FL study is learning to speak the language.

Sound-Symbol Association

The PLAB variable which appeared most significant to FL planning in this school was sound-symbol association (SSA). This subtest was designed to measure a student's ability to associate a sound with its corresponding written symbol.

In this group, the subtest on sound-symbol association accounted for more of the variance of the PLAB total than any other subtest. This finding coincides with the results obtained from administering the PLAB to a large sample of 7th grade students in the U.S. However, to a large extent this feature was built into the test itself by virtue of the heavy weighting given SSA. If the PLAB has predictive value for success in FL classes, and scores on sound-symbol association account for more of the total than any other subtest, then we may assume that prediction of success in FL classes is most related to this variable. In Australia this will apply only if we assume that our definition and measurements of success are similar to those by which the PLAB was validated in the U.S. (See Appendix, p. 46 for intercorrelation of the parts.)

What is particularly relevant to language planning in the school studied is the relationship of 'sound-symbol association' scores to the other variables in the study. Not only was the SSA score related to the subtest on vocabulary, sound discrimination, and the

PLAB total, but it was also related to a student's least favourite subject in school and his expressed difficulty of the present FL instruction as compared to his other school subjects. Scores on SSA also had a stronger relationship to I.Q. than did any other variable in the study. (As mentioned previously, 'language analysis' was less related to I.Q. than any other subtest. In fact, unlike the findings obtained from the U.S. sample of 1,201 7th grade students, 'language analysis' was the only subtest which was not related to 'sound-symbol association'.

If student difficulty of the present FL instruction as well as potential success in FL classes is strongly related to scores on SSA in this school, then this information can be put to diagnostic use by giving students special training in this area. Lack of ability to associate an oral sound with its corresponding written symbol was also a particular problem in this school as shown in the student questionnaires. Therefore, improvement of this skill may not only help a student's achievement in FL study, but might also improve his native language expression, which also calls heavily upon this skill. Such remedial treatment of specific psycholinguistic skills in the foreign language classroom might finally help fulfil the claim that FL study can increase one's native language proficiency.

Thus, the findings of the study again underline the need for individualization of FL instruction in this school and indicate an important component of the individualization that is needed.

How important is overall ability?

Prior to implicit and explicit school intervention at the actual time of electing subjects, 'ability' in terms of I.Q. and/or language aptitude was not observed to be related to 1) a student's liking of certain subjects - i.e. his academic orientation, 2) his school aspiration or 3) his interest in FL study, for the Form I students in this particular school.

What emerges through a series of cross-break tables is that 'ability' does not always coincide with academic orientation and school aspiration. For example, over half the students who disliked English most were in the top third I.Q. group.

Similarly, those who scored higher on the 'language analysis' subtest tended to choose academic subjects as their favourite subjects less often than the reverse. There was also a tendency for students who scored higher on the 'sound-symbol association' subtest to choose academic subjects as the ones they disliked most. The same pattern emerged in the relationship between scores on 'sound discrimination' and 'school aspiration': there was a slight tendency for those who scored higher on this subtest to have a lower school aspiration.

Although the correlations obtained are weak, the pattern gains strength by being reconfirmed through the correlations of several different pairs of variables.

If sound-symbol association and sound discrimination are the factors which contribute to FL success, as Pimsleur states, then the inverse relationships between those who do well on these subtests and those who like academic subjects or those who plan to stay at school longer, are very significant to FL education in this school. Equally significant is the lack of any observed positive relationship between 'ability' and 'interest' in electing FL prior to school intervention, as discussed earlier. There was also no evidence observed to imply that in the school 'speaking' would be a more valid goal of FL study for the 'less able' in terms of I.Q. or language aptitude.

What these findings imply is that in this school a lot of potential may be lost. That is, some children who could succeed in FL classes are not interested, and some students who have the 'ability' for 'academic' work do not like and probably will not choose 'academic' subjects for one reason or another. Perhaps our previous ambiguity as to the meaning of 'linguistic ability' has contributed to the failure of recognising and encouraging a large portion of students who are in fact quite 'linguistically able' to take FL study. It seems that students very able in some areas may not perceive of themselves as such and may tend to leave school early due to lack of congruence between school goals and their particular areas of 'ability'.

Implicit messages related to social variables

A very interesting pattern emerged regarding what we shall call 'social' variables. These variables include school aspiration, vocational aspiration, academic orientation (based on favourite and least favourite subjects), sex and bilingualism.

The 'social' variables appeared to interact more with student experience regarding FL study than did any of the 'ability' variables, including I.Q., the PLAB subtests, and the PLAB total. Consequently, the effect of these 'social' variables on school behaviour could be of utmost importance to the planning of foreign language study.

In the first instance, it was mentioned that interest in FL study, as measured by the PLAB and the investigator's comparative interest item, clustered together with the 'social' variables rather than with any of the 'ability' variables. In fact, one of the highest correlations obtained in the study was between school aspiration and interest in learning a foreign language, as measured by the PLAB.

Vocational aspiration was positively related to election of FL study in Form II and to academic orientation. Academic orientation was also positively related to sex. (There was a slight tendency for girls

to prefer academic subjects to non-academic subjects more than boys.)

The consistent lack of positive relationship between any of the 'social' variables and any 'ability' variables, and the contrastingly consistent positive inter-relationships between difficulty of FL study with the 'social' variables form a consistent pattern. It may be inferred that unfounded and arbitrary 'ability' expectations are imposed upon the FL curriculum and upon students of certain 'social' characteristics at the actual time for Form II election of FL study. Perhaps there is an implicit message conveyed that FL study is relevant primarily to those who are 'academically oriented', who intend continuing to the HSC and who aspire toward vocations involving tertiary training. As a result, enrolment in FL study tends to parallel the expectations set, and goals of instruction and evaluation reinforce them. (See Robinson, 1973.)

Awareness of the kinds of factors that may affect FL curriculum, FL enrolments, and student FL experience may help to strengthen our efforts toward providing equal opportunity of FL study for the majority.

INDIVIDUAL PATTERNS OF STUDENT RESPONSE ON THE PLAB

From the study of individual patterns of student responses on the PLAB, there is strong evidence against rejecting or even classifying students in this school on the basis of generalized scores such as I.Q. or the total PLAB. There is also strong evidence against classifying students on the basis of a combined 'verbal score' and a combined 'auditory score'.

Are students consistently either 'poor', 'average' or 'above average'?

Referring to language students as 'poor', 'average', or 'above average' is a common practice. I.Q. scores and total language aptitude scores, divided into three major groups on the basis of ranked scores, are often used to classify students as 'poor', 'average', or 'above average'. Such classifications of students imply a consistency of student behaviour or potential behaviour with respect to language achievement in general, or achievement of the specific classroom goals instructed in particular.

The patterns of these students reveal that students are not consistently 'above average', 'average' or 'below average' in language potential, if the terms are to relate to an individual's actual language aptitude abilities, rather than solely to his 'overall' place in a group, which could just as well be measured by his I.Q.

Analysis of the discrepancy between each student's scores on the individual subtests showed that a given student's score on at least one subtest was a minimum of three times greater or less than his score on another subtest in 62 out of the 123 patterns analysed.[5]

5 Subtest scores were standardized so that subtests containing different numbers of items and unequal weightings could be compared.

Frequently, the four variables clustered into two pairs which were equally discrepant.

Do 'verbal clusters' and 'auditory clusters' occur naturally?

The way in which the four subtests clustered into pairs is particularly interesting. Pimsleur (1966b) has suggested that vocabulary and language analysis scores be combined into a 'verbal score' to predict how well a student will do in the written aspects of the language programme. Similarly, he has suggested that sound discrimination and sound-symbol association scores be combined into an 'auditory score' to predict how well a student will do in the oral/aural components of the course. These combined scores are also supposed to suggest the area(s) of study that will need special attention.

The assumption underlying the suggestion of combined verbal and auditory scores is that a given student's language aptitude abilities, as measured by the four subtests, will cluster naturally into two pairs, one including the subtests on vocabulary and language analysis, and the other including the subtests on sound discrimination and sound-symbol association. The suggestion implies that a student's abilities will be relatively consistent within each pair.

An analysis of each student's pattern of response on the PLAB was undertaken to establish the way in which subtests clustered for each individual, and to determine each student's best and worst scores. In this school, the 'verbal pair' and the 'auditory pair' did not occur more frequently than several other pairs of variables. For example, the pair including 'language analysis and auditory discrimination' (variables 4-5) and the pair including 'vocabulary and sound-symbol association' (variables 3-6) clustered together as a student's best pair of scores approximately as frequently as the assumed 'verbal score' (variables 3-4) and the 'auditory score' (variables 5-6).

Frequently, there were large discrepancies within pairs, and extent of ability in one component did not parallel extent of ability in the other. For example, 'sound discrimination' was more frequently a student's best score than any other PLAB variable. (See Appendix, p. 34, for diagram of individual score patterns.) Conversely, 'sound-symbol association' (the other component of Pimsleur's 'auditory score') was more frequently a student's worst score than any other PLAB variable. (The latter confirms the particular problem of SSA observed in this school and discussed previously.)

Therefore, the evidence does not support any relevant usage of the combined 'verbal score' and 'auditory score' if actual student behaviour or potential student behaviour is supposed to be reflected by them or modified by using the information gained by them. Such information may well be misleading rather than helpful. An extremely low score in one component would naturally depress the combined score, even if the student's score was quite average or even above average on

the other component of the combination. Similarly, the total PLAB scores, like I.Q. scores, are of little use because information as to specific learning characteristics is lost.

In order to use predictive measures for improving instruction and hence facilitating learning for a given group of students, knowledge of their specific areas of strengths and weaknesses are the most relevant.

Implications for one student

To sum up the implications of the aforementioned findings, let us see how they may affect one student in this school. A typical example is the student who was ranked 109th (out of 123) in part 4, language analysis, and 91st in part 6, sound-symbol association. (It should be noted that these are the two parts which were more often the most difficult for the majority of students in this school.) On the other hand, this same student was ranked only 42nd in part 3, vocabulary, and 23rd in part 5, sound discrimination. (The latter was more often the best score for these students.) In terms of his total PLAB score, this student was ranked 52nd, clearly in the bottom half of his group.

Placement by previous procedures using the combined 'verbal score', the combined 'auditory score' or the PLAB total, would either exclude this student from language study or designate him as 'poor' or 'below average', at best.

This student could represent the tragedy of misusing modern testing techniques and cautions us against over-zealous behaviour in 1) distorting the meaning of test scores and 2) using information gained to classify students for the convenience of pre-set curriculum rather than to modify instruction for helping the student to learn.

Because he has a head start in two important factors in language learning, which posed considerable difficulty to his peers, this student might have the chance to be special in certain aspects of the course.

One out of every two students had this pattern. This is too frequent to be dismissed when we are considering who is a 'poor' student, who is 'average' and who is 'above average' or of 'marked linguistic ability', and too serious to be ignored when we are planning foreign language instruction.

OVERALL IMPLICATIONS FOR FL PLANNING IN THIS SCHOOL

In keeping with our theme of individualization, any information which forms generalizations about certain groups of students needs to be regarded cautiously and considered only as an initial point of departure to identify the major types of instruction that will be the most efficient in accounting for predominant kinds of differences in

foreign language learners. Once instruction has begun, different needs will arise, and the type of instruction within a given class should adapt accordingly.

General trends in the school

In this school the majority of Form I students were clearly interested in learning to speak the language. Due to the prime importance of 'interest' to other school behaviours, it would appear that the most effective vehicle for receiving and relaying cross-cultural information[6] would generally be through the spoken language. This is of course a generalization which applies only to this particular group of students at this particular point in time. As learning progresses, 'optimal' instruction will vary.

The high incidence of greater performance on 'sound discrimination' than any other PLAB subtest suggests an initial aural/oral approach. The students' fascination with hearing new sounds and saying new words, as well as their interest and attentive efforts in the training session to distinguish sounds, point to certain types of classroom activities through which the mechanics of the language might be acquired most efficiently for the majority of students, at least initially.

The higher incidence of poorer performance on 'sound-symbol association' than on any other PLAB subtest suggests special training activities aimed specifically at associating sounds with their written symbols. For this particular group of students, associating the sounds of English with their written symbols might be the most appropriate point of departure. Alternatively, the international symbols now commonly used in phonetics might be a useful beginning point in the FL classroom. These students might improve this particular psycholinguistic ability without extreme interference from previous associations incorrectly formed. The international phonetic system could then be used in representing the sounds in many of the languages to be learned subsequently, including English.

Major groups within this school

While it has been suggested that the overall approach to FL study for the majority of students in this school might be learning to speak the language through a basically aural/oral approach, students could be grouped according to their individual patterns of ability to allow not only for special treatment of specific areas of potential student weakness, but equally importantly for opportunity to excel in specific areas of potential student strengths.

6. *WHERE DOES FOREIGN LANGUAGE STUDY BELONG IN THE CURRICULUM?, G.L. Robinson, N.S.W. Dept. of Education, 1974, examines the goals of foreign language study within the general curriculum.*

Based on the pattern of scores of these individual students, four or five major FL classes might be devised. Each student could be placed into a class of instruction according to his two best scores as compared to his other scores, rather than as compared to the scores of others in the group. Such placement would be designed to elicit maximum individual performance rather than to establish hierarchical groups of instruction.

There were five dominant pairs of best scores among these particular students.

Dominant pairs	Without ties	With ties
vocabulary and language analysis	21 students	36 students
sound discrimination and sound-symbol association	19 students	29 students
vocabulary and sound-symbol association	17 students	25 students
language analysis and sound discrimination	15 students	31 students
vocabulary and sound discrimination	12 students	28 students

Eighty-four out of 123 students fit directly into one of these patterns. With the exception of 8 students whose best pair of scores was 'language analysis and sound-symbol association', the remaining 21 students tied for 'second best' score. That is, 21 students could be placed in at least two of the five groups which would equally suit their pattern of needs. The incidence of 'ties' would facilitate the administrative aspect of allocating similar numbers of students to each class.

The designation of what a student does best also gives information about his areas of greater weakness. The large discrepancy observed between a student's best pair of scores and worst pair gives further strength to the diagnostic value of this information.

The envisaged form of placement would not promote 'homogeneous ability groupings' in the traditional sense. For example, two students might be placed in the same class because each individually scored better on 'language analysis' and 'sound-symbol association' than on the remaining subtests. However, this does not mean that both students would have approximately the same level of individual skills as the other. Conceivably, each student could vary markedly in the present level of these abilities.

Example of placement
Class L

Special treatment: language analysis and sound discrimination

Opportunity to excel: vocabulary and sound-symbol association

Typical participants: Student A - 'poor' in language analysis and sound discrimination (i.e. bottom third)
'average' in vocabulary and sound-symbol association (i.e. middle third)

Student B - 'just below average' in language analysis and sound discrimination (i.e. border between bottom third and middle third)
'well above average' in vocabulary and sound-symbol association

According to such a program, each student could participate in a class which identified his particular areas of greater ability and his particular areas of lesser ability. Such a programme could facilitate efficient planning of instruction aimed at encouraging optimal achievement for each individual according to his own potential, irregardless of his position in the general ability range. A distinct advantage would be the possibility of evaluating achievement in terms of an individual's progress rather than being forever doomed to the level of achievement at which he was classified prior to instruction in the language began.

Awareness of his potential to do well in a given area may encourage the student toward greater achievement if he has the opportunity to develop and utilize these abilities. The experience of success may increase the student's perserverance to improve his weaker skills and set a higher standard of overall performance.

THE OPPORTUNITY TO LEARN

Unfortunately, sometimes a child does not have the opportunity he requires to adequately learn the task set for learning. Frequently, the task set is impossible to achieve within the time limits set. Other times, the task may not be of any motivational value to the learner. Still other times, the child may not be exposed to the task at all.

"We are wasting potential talents by failing to give some children an opportunity for optimum development."
(Collins and Collins, 1973, p.219.)

A Model of School Learning

In order to provide an opportunity for optimum development, a variety of factors both within the individual and within the external learning environment need to be taken into consideration. Carroll (1963) developed a conceptual model for learning school tasks which includes five elements, three of which are personal characteristics of the individual, and two of which are characteristics of the external conditions.

> *"Factors in the individual are (1) aptitude - the amount of time needed to learn the task under optimal instructional conditions, (2) ability to understand instruction, and (3) perseverance - the amount of time the learner is willing to engage actively in learning. Factors in external conditions are (4) opportunity - time allowed for learning, and (5) quality of instruction - a measure of the degree to which instruction is presented so that it will not require additional time for mastery beyond that required in view of aptitude." (Carroll, 1963, p.729.)*

The exact extent to which factors in the individual may be modified is not known. Conceivably, the nature of one's previous language learning experience might encourage or inhibit motivation to learn a subsequent language. Carroll suggests that previous language training might well affect a learner's ability to understand instruction. Age may also be an important factor. While it is believed that an individual's aptitude may not increase with age relative to the group, an individual's potential for mastery may increase with age in absolute terms, based on the evidence that raw scores on language aptitude batteries do increase with age. The latter suggests that the optimum point for commencing second language instruction will vary with the individual. Specialized training may also affect language aptitude abilities. Further research is needed to investigate ways in which factors within the individual may be modified.

For the present, the factors which are defined in terms of 'time' and 'quality of instruction' appear to be the most important in the immediate planning of FL programmes because they are quite amenable to change. These factors which include the factors in external conditions as well as the individual characteristic of perseverance interact with each other. For example, the poorer the quality of instruction, the more time that will be needed for mastery.

The results of several experimental courses which the present investigator conducted in Hawaii and Japan support Carroll's model. The experiments involved teaching Spanish to American university students and teaching English to Japanese adult students. The time needed for mastery of specific lexical, phonological, and syntactic items, which together defined a level of fluency, was inversely related to motivation. The type of motivation stimulated was integrative

in orientation. It was operationally defined in terms of personal involvement with the semantic content of the subject. (Most frequently, 'personal involvement' was expressed in the form of 'emotional involvement'.) By increasing motivation, the time necessary for instruction and mastery of the lexical, phonological, and syntactic components evaluated was sizably decreased, while motivation for continued learning increased.

Optimal quality of instruction would require organization and presentation of the task "in such a way that the learner can learn it as rapidly and as efficiently as possible". (Ibid.) The latter implies organization of instruction according to the specific needs and characteristics of a given learner or group of learners.

> *"..If the students are normally distributed with respect to aptitude, but the kind and quality of instruction and the amount of time available for learning are made appropriate to the characteristics and needs of each student, the majority of students may be expected to achieve mastery of the subject. And, the relationship between aptitude and achievement should approach zero.* (Bloom, 1968.)

This notion of school learning based on individual differences implies an alternative to the notion of a uniform curriculum which everyone must complete within a uniform period of time. If students of varying characteristics are to master a core of similar concepts, teaching method as well as specific points of teaching emphasis would have to vary. This model of school learning also implies that some students may benefit more from FL study by commencing at different points in time, as mentioned previously.

While the task of teaching according to such a variety of learner characteristics may be difficult, the complexity of the task should not stimulate pessimism based on what we can not do in planning the perfect instruction for our students. Carroll certainly does not expect the numerator and denominator of his formula for learning to converge:

$$\text{learning} = \frac{\text{amount of time spent}}{\text{amount of time needed}}$$ (Carroll, 1963.)

Nor could we expect every incidence of underachievement to be correctable within the practical limits of school learning. We should be optimistic for having identified means to approach optimal instruction. Our approach may include varying the definition or level of goal achievement, increasing the time of instruction, varying the commencing point of instruction and modifying the nature of instruction according to individual and group characteristics.

Our optimism needs to be accompanied by a policy which upholds the principle of equality of educational opportunity. As Bloom has stated,

"Individual differences in learners is a fact that can be demonstrated in many ways. That our students vary in may ways can never be forgotten. That these variations must be reflected in learning standards and achievement criteria is more a reflection of our policies and practices rather than the necessities of the case."

(Bloom, 1968.)

Equality of educational opportunity

It has been suggested that equality of educational opportunity does not exist in Australia because we are not really committed to the principle. (Schoenheimer, 1971.)

"We hold certain attitudes and beliefs so strongly that when they conflict with our present weak and limited degree of commitment to equality, the stronger forces win out." (Schoenheimer, 1971.)

A confusion as to what 'equality of educational opportunity' implies has further hampered fulfilment of the goal. Does 'equal opportunity' imply the 'same educational treatment to all' or does 'equal opportunity' imply 'variation of educational treatment'? (Francis, 1972.)

Do we mean 'equal educational input' or 'equal student output'? Clearly, 'same or like' treatment will favour some and prejudice others, depending upon the nature of the treatment and the individual's congruence with it.

Any education which is dedicated to 'equal student opportunity to learn' must be concerned with developing different programs of varied inputs, but of equal 'status', that will allow for the maximum output of each student. This approach to achieving equality of educational outcomes and hence, opportunity, refers to the principle of 'equifinality' - i.e. the principle that unequal inputs may lead to equivalent outputs.

Collins and Collins have suggested that the attitudes of teachers and educational administrators must be made more sympathetic to the principle of equality of educational opportunity before the specific classroom measures needed can be realized. Such changes can only take place through policy changes, syllabus and examination changes, and educational programmes for teachers, both pre-service and in-service.

"Only through such changes in policy, provisions and practices will Australian education be able to refute the current claims that it is elitist in nature." (Collins and Collins, 1973, p.220.)

CONCLUSION

The first step toward removing elitism from foreign language instruction in New South Wales and the first step toward encouraging foreign language enrolment across the state-wide ability range entails a philosophical as well as a pedagogical commitment. One must be committed to the principle of equal opportunity and hold the positive belief that each student is of equal worth, each student is linguistically able, and each student will benefit equally from FL study, although the type of instruction and benefit derived will vary with the individual.

Just as the set of expectations discussed earlier creates a detrimental self-fulling prophecy which insures student underachievement, based on the initial expectation that a large number of students are not 'linguistically able', so may it operate to the reverse. By a commitment to the principle that all students can learn and will succeed, goals set, standards to be attained, methods of instruction and methods of evaluation may be determined in such a way as to create a self-fulfilling prophecy so that each student's optimal achievement rather than his underachievement is insured.

APPENDIX

Pages 32 - 51.

STUDENT PROFILE OF RANKED SCORES*

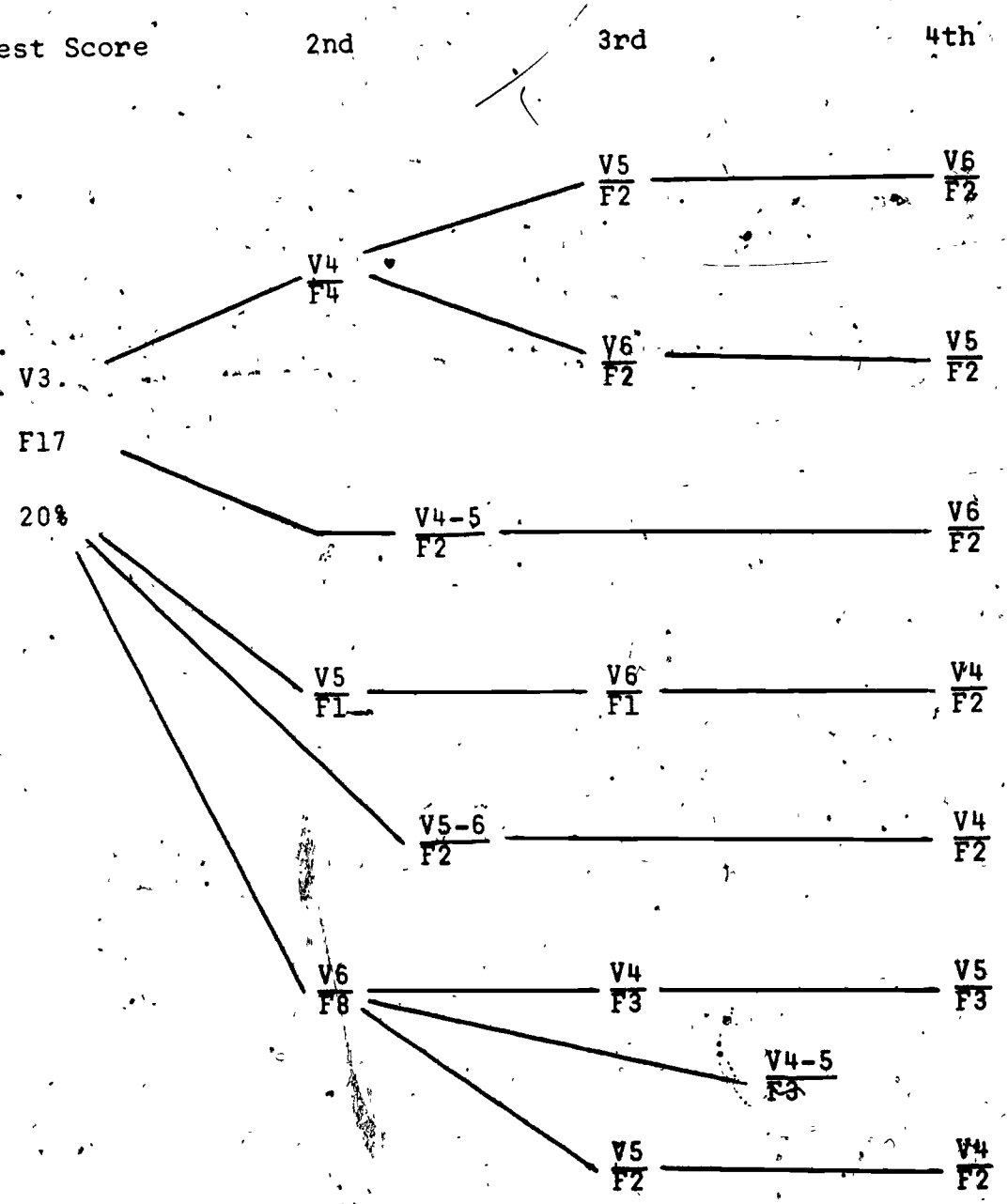
vocabulary	language analysis	sound discrimination	sound-symbol association	PLAB TOTAL
3	4	5	6	7
2	3	23	1	1
2	3	44	12	2
2	36	67	12	4
5	77	77	91	57
11	3	36	59	18
11	13	36	59	31
11	36	67	72	21
11	58	86	5	26
11	109	86	29	45
11	109	111	72	89
24	13	67	3	3
24	36	92	83	62
24	77	36	29	8
24	77	67	120	100
24	77	111	72	73
24	96	99	59	83
42	13	119	91	79
42	36	67	20	18
42	36	77	72	52
42	77	29	45	36
42	96	107	20	83
42	117	36	59	62
59	36	44	91	31
59	36	99	36	79
59	36	122	59	89
59	58	92	12	62
59	77	92	98	103
59	109	67	12	31
59	109	119	83	115
59	117	99	83	103
72	58	86	29	52
72	77	29	98	62
83	13	44	29	26
83	36	44	3	6
83	58	107	112	112
83	109	86	72	73
96	3	36	83	23
96	36	67	59	73
96	58	29	36	36
96	58	67	112	107
96	96	55	6	31
96	109	77	45	96
108	36	107	59	96
108	58	36	83	89
108	77	55	98	83
108	96	55	12	62
108	109	29	72	73
108	117	55	29	83
121	36	44	98	103
123	96	99	122	122
5	58	99	12	45
5	58	119	120	107
11	36	29	45	8
11	58	92	59	40
11	96	107	106	112
24	7	86	83	36
24	7	99	83	45
24	13	23	29	18

* The profiles of 38 students are omitted due to incompletion of the PIMSLEUR LANGUAGE APTITUDE BATTERY.

24	36	23	12	14
24	36	29	12	11
24	36	67	29	11
24	36	77	98	52
24	58	55	59	45
24	58	86	5	14
24	77	16	45	7
24	77	86	36	68
42	13	29	72	11
42	36	44	12	26
42	36	55	20	14
42	36	55	29	31
42	36	86	45	36
42	36	86	45	57
42	36	92	112	89
42	36	114	59	68
42	58	4	20	5
42	58	107	72	68
42	77	86	59	62
42	109	23	29	40
42	109	23	91	52
59	3	114	59	45
59	7	77	45	45
59	36	44	72	40
59	36	77	59	62
59	36	99	106	96
59	36	114	20	52
59	77	99	6	45
59	77	77	29	73
72	13	92	117	89
72	58	4	29	21
72	58	55	106	100
72	96	44	3	14
72	96	44	45	52
72	96	55	98	96
72	96	86	106	103
72	96	99	83	79
83	13	36	98	79
83	77	55	112	110
83	77	67	45	62
83	77	77	112	115
83	96	16	59	52
83	96	67	20	73
83	109	16	36	36
83	120	67	117	115
96	36	29	45	21
96	36	36	106	73
96	77	44	20	23
96	77	122	98	115
96	120	16	72	89
96	120	36	120	118
96	123	77	83	110
108	13	16	45	26
108	77	107	83	110
108	77	114	59	96
108	109	92	45	89
113	36	77	83	89
113	77	107	98	119
113	77	119	117	123
113	15	119	91	120
113	120	99	106	121
119	36	16	98	68
119	77	77	59	96
121	13	67	112	107

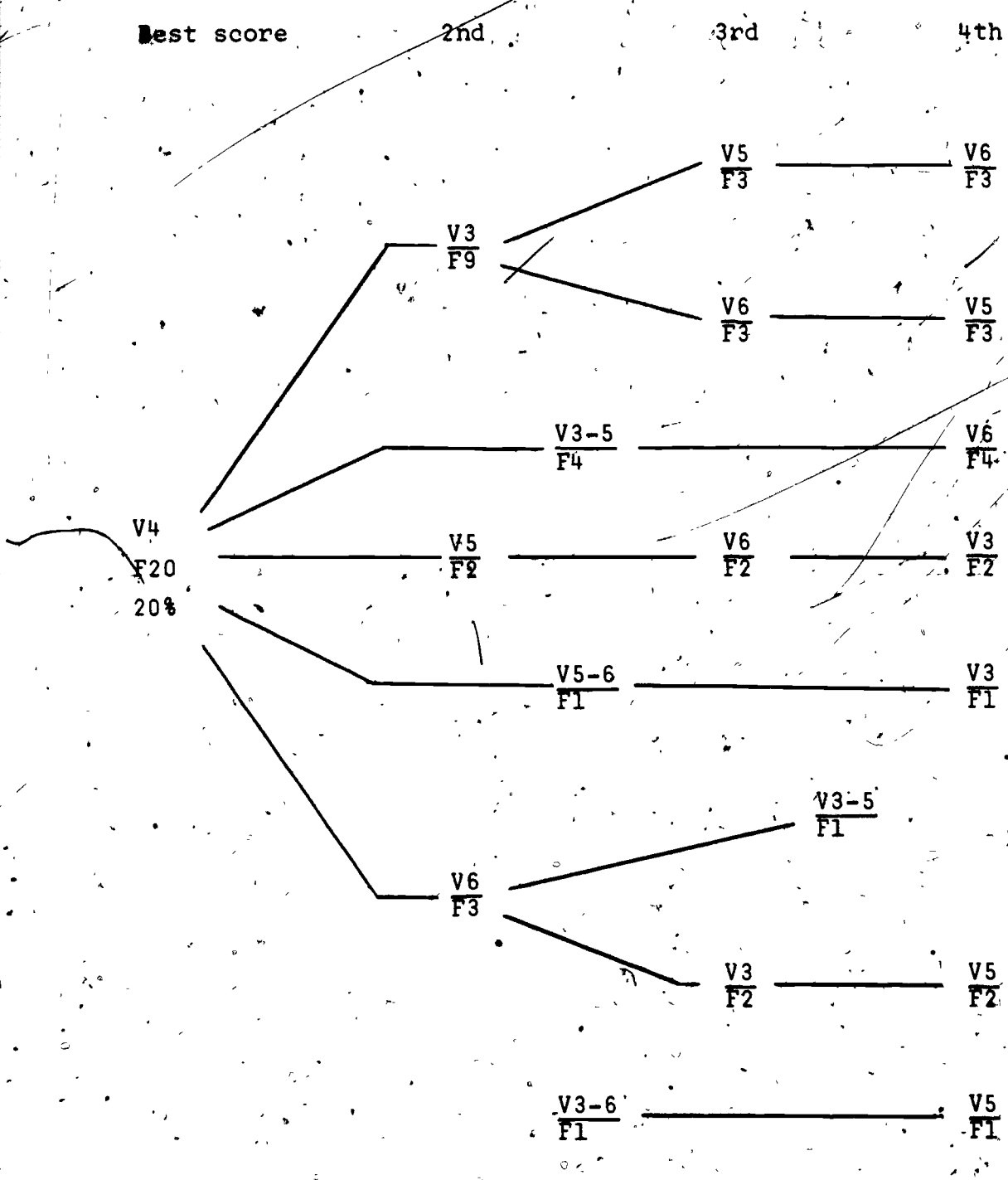
PROFILE DIAGRAM OF PLAB INDIVIDUAL RESPONSES

I - BEST SCORE IS VOCABULARY (Variable 3)



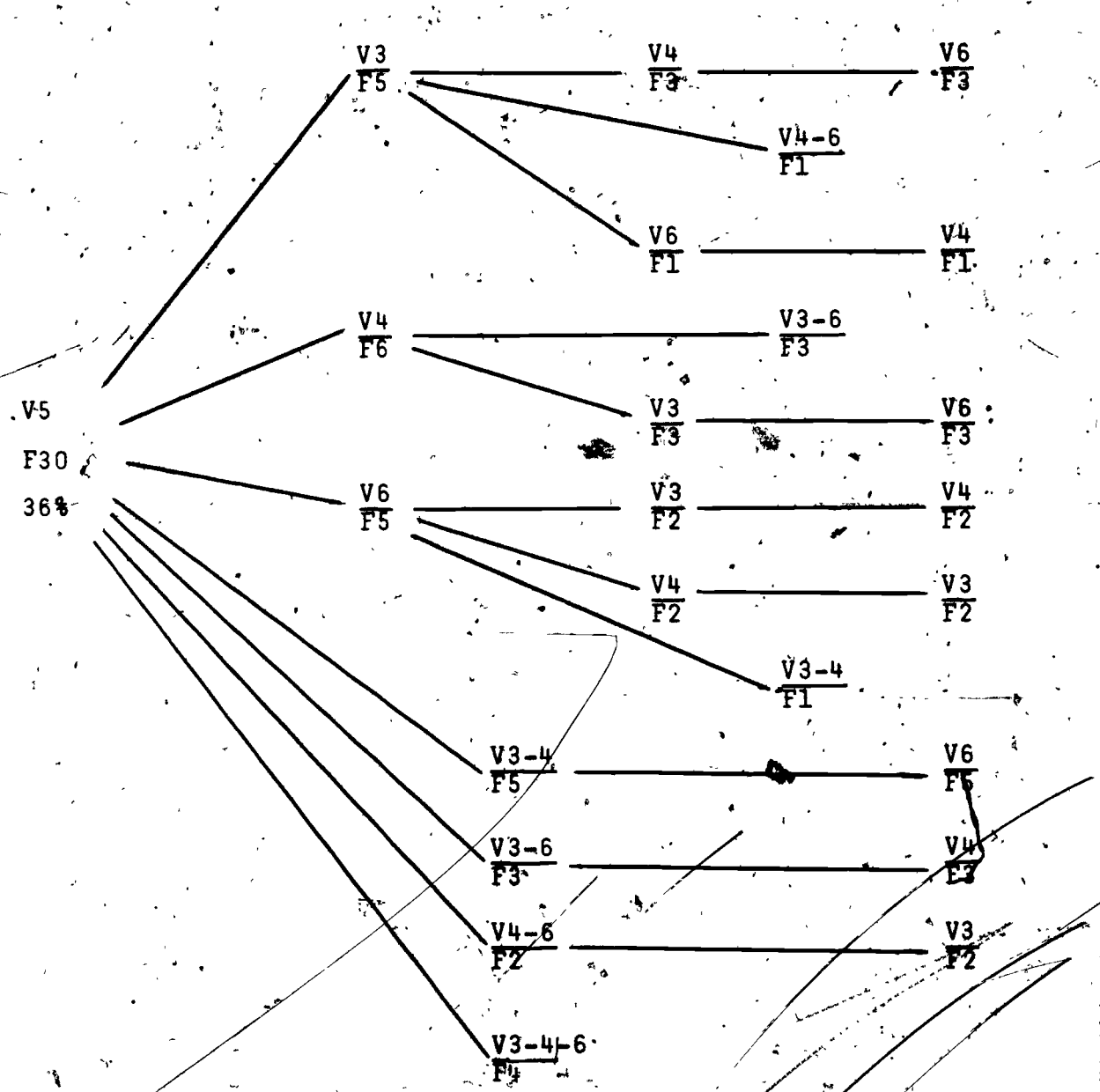
F = frequency (number of students in each pattern)
V = variable number
V3 = vocabulary
V4 = language analysis
V5 = sound discrimination
V6 = sound-symbol association

II - BEST SCORE IS LANGUAGE ANALYSIS (Variable 4)

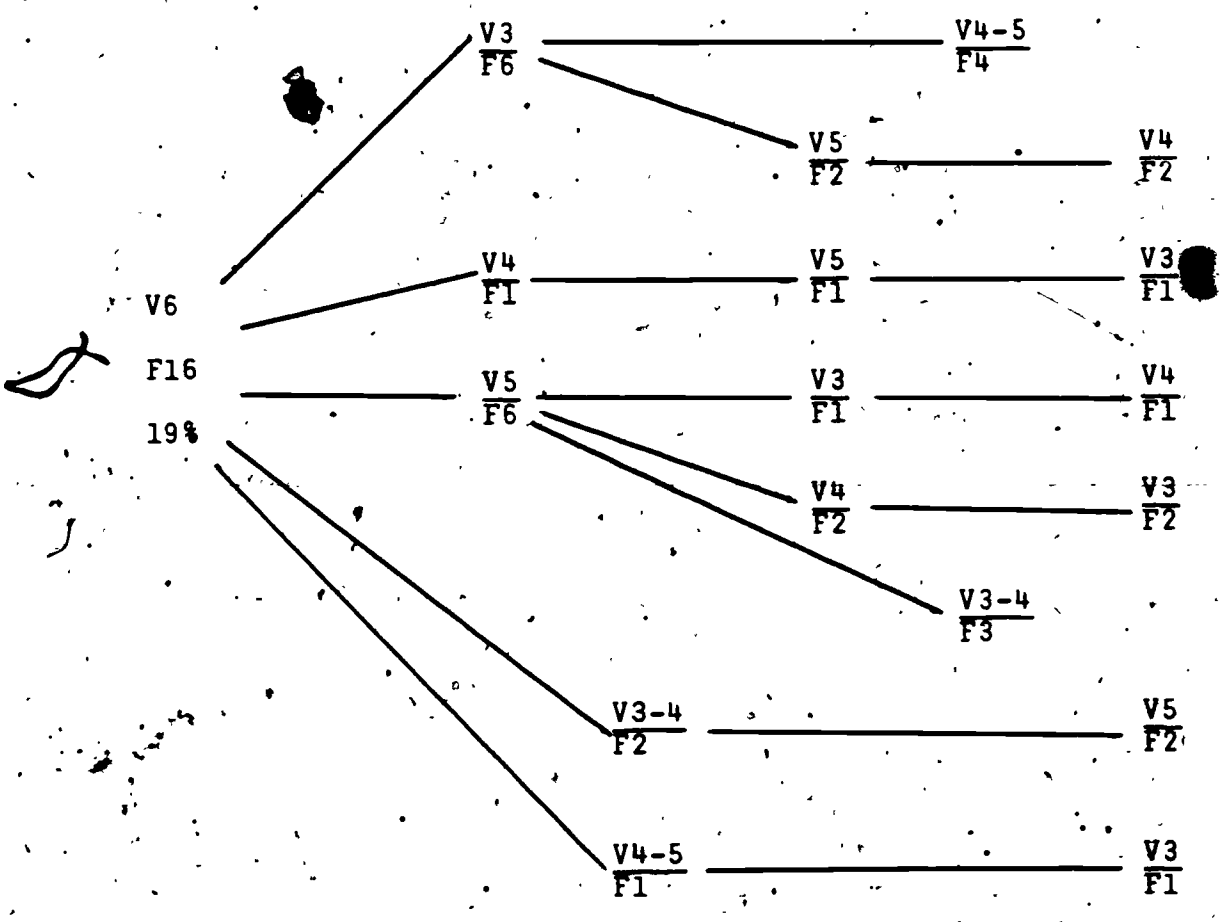


*V = variable number
F = frequency (number of students in each pattern)

III - BEST SCORE IS SOUND DISCRIMINATION (Variable 5)

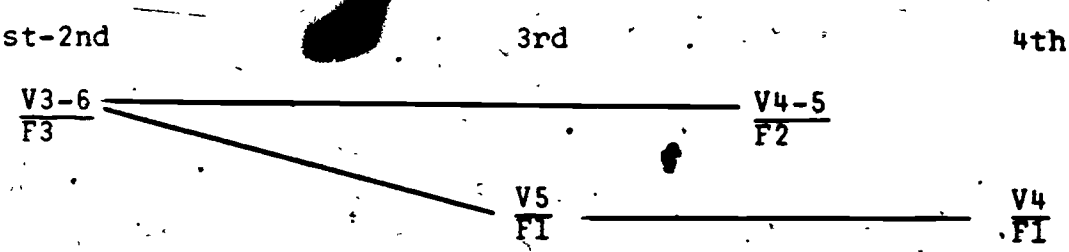


IV. - BEST SCORE IS SOUND-SYMBOL ASSOCIATION (Variable 6)

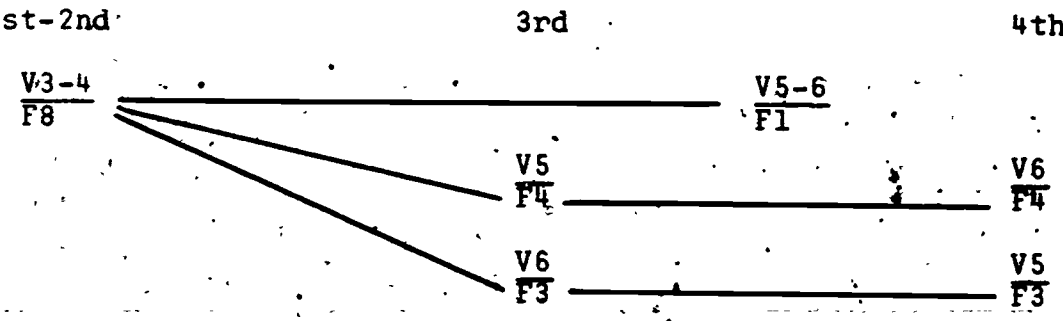


V - TIES FOR BEST SCORES

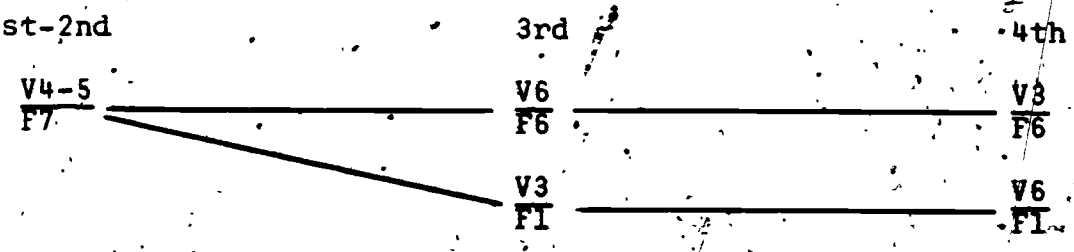
BEST SCORES ARE VOCABULARY AND SOUND-SYMBOL ASSOCIATION



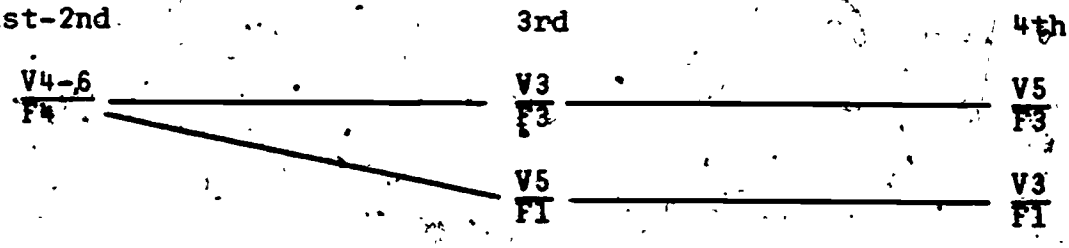
BEST SCORES ARE VOCABULARY AND LANGUAGE ANALYSES



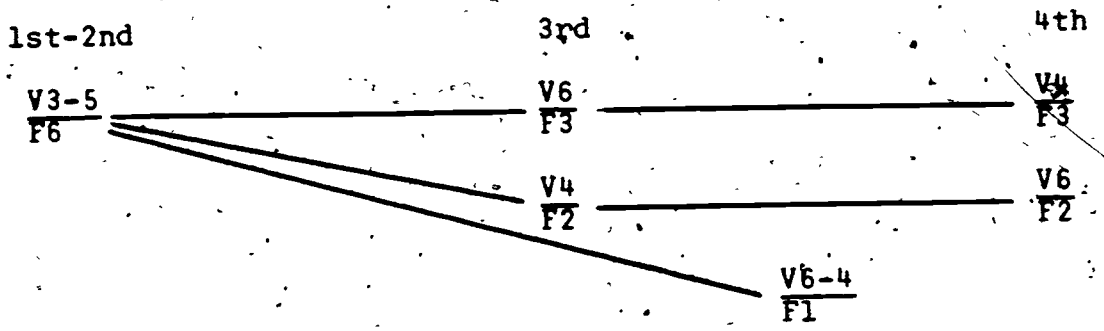
BEST SCORES ARE LANGUAGE ANALYSIS AND SOUND DISCRIMINATION



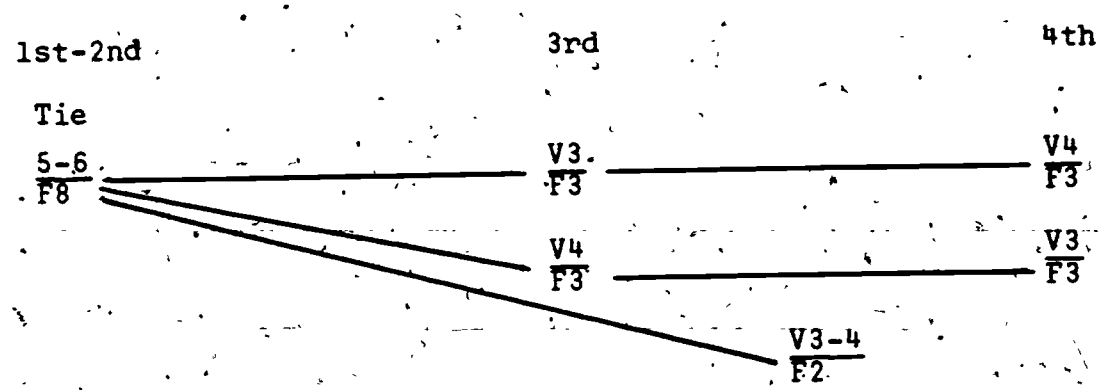
BEST SCORES ARE LANGUAGE ANALYSIS AND SOUND-SYMBOL ASSOCIATION



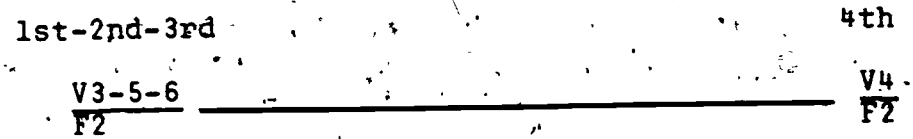
BEST SCORES ARE VOCABULARY AND SOUND DISCRIMINATION



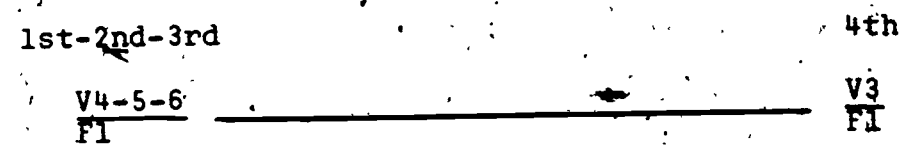
BEST SCORES ARE SOUND DISCRIMINATION AND SOUND-SYMBOL ASSOCIATION



BEST SCORES ARE VOCABULARY, SOUND DISCRIMINATION AND SOUND-SYMBOL ASSOCIATION



BEST SCORES ARE LANGUAGE ANALYSIS, SOUND DISCRIMINATION AND SOUND SYMBOL ASSOCIATION



STUDENT QUESTIONNAIRES - CATEGORIES OF VARIABLES

1 Sex
- 1 = male
- 2 = female

2 Interest (PLAB)

3 Vocabulary (PLAB)

4 Language analysis (PLAB)

5 Sound discrimination (PLAB)

6 Sound-symbol association (PLAB)

7 Total PLAB score

8 I.Q.

9 Bilingualism
- 1 = monolingual
- 2 = bilingual

10 Musical training
- 1 = no musical activity outside of school
- 2 = plays an instrument - self-taught, outside of school
- 3 = formal musical training, outside of school

11 Favourite subject
- 1 = non-academic (eg. sport, needlework, art, mechanical drawing, woodwork)
- 2 = mixed (ie. student states two: an academic subject and a non-academic one)
- 3 = academic

12 Favourite subject - N*(this correlated .78 with variable 11, favourite subject)
- 1 = non-academic subjects
- 2 = social science
- 3 = science
- 4 = maths
- 5 = English
- 6 = foreign language

13 Least favourite subject
- 1 = non-academic/other (art, music, crafts, P.E., health, guidance, scripture, library)
- 2 = mixed
- 3 = academic

14 Least favourite subject - N (this correlated .51 with variable 13, least favourite subject)
- 1 = non-academic subjects
- 2 = social science

* = non-ordinal

3 = science
4 = maths
5 = English
6 = foreign language

15 School aspiration
1 = plans to drop out prior to the School Certificate or is undecided about continuing to the School Certificate
2 = plans to continue to the School Certificate
3 = plans to continue to the School Certificate but undecided as to H.S.C.
4 = plans to continue to the Higher School Certificate

16 Vocational aspiration
1 = unskilled (housewife, office worker, bank, fruitshop, factory worker, child care, car salesman, cook, policeman, army, navy, car racer, bike racer, wrestling referree, receptionist, model, travel agent, dancing teacher, air hostess, athlete.)
2 = skilled (plumber, nurse, mechanic, engineer, printer, artist, panel beater, commercial pilot, secretary, hair dresser, repairman, electrician, farmer, brick layer, carpenter, typist.)
3 = tertiary qualifications/university-trained/ professional (pharmacist, chemist, civil engineer, teacher, vet)

17 Election of FL study in Form II
1 = no
2 = undecided
3 = yes

18 Why will you elect or not elect FL study in Form II?- N
1 = depends on external conditions (ie. time, other courses offered who one's classmates will be)
2 = difficult, lack of success
3 = useless, no need
4 = not interesting, boring, dislikes it
5 = easy, good at it
6 = useful for job and/or travel
7 = interesting, likes to speak in general and work with other people
8 = depends on difficulty (ie.if one is good at it, how one does, amount of work involved)
9 = depends on usefulness, relationship to job, travel
10 = depends on interest, how one 'likes it'

19 What do you like most about your language study?-N
- 1 = nothing specific (nothing, undecided, everything
- 2 = teacher oriented (ie. likes teacher or specific practices of teacher)
- 3 = course/pupil interaction (ie. pupils perceives course as unusual, interesting, useful, likes learning language, likes the adventure he associates with the study, may understand relatives better)
- 4 = specific content (ie. learning about the way other people live; learning about foreign people and other countries)
- 5 = specific content (differences in languages, learning new words, new techniques, new things)
- 6 = writing
- 7 = speaking (includes saying words; learning the way other people speak; speaking for itself or to communicate with other people (non-utilitarin)
- 8 = general methodology (practical work; films pictures)

20 What do you like least about your language study?-N
- 1 = nothing specific (ie. nothing, undecided, everything)
- 2 = teacher oriented (ie. doesn't like teacher or specific practices of teacher)
- 3 = course/pupil interaction (ie. boring, useless, difficult; too much to learn; can't understand; confused; hard to remember; lack of success)
- 4 = specific content (ie. specific language grievances such as 'German','French', or Italian hand gestures; gender, differences from English, lack of or too much history)
- 5 = writing (includes spelling, theory/grammar, accents, reading)
- 6 = speaking (includes saying words, pronunciation, communication with other people)
- 7 = general methodology (tests, homework, lack of excursions, too much repeating)

21 Comparative difficulty of your language class to your other subjects
- 1 = more difficult
- 2 = same - as difficult (includes few 'other' responses:(eg."more difficult than some, less difficult than others")
- 3 = less difficult

22 Comparative interest in your language class
- 1 = less interesting than your other subjects
- 2 = same - as interesting (includes the few 'other' responses: "as interesting as some; more/less interesting than others")
- 3 = more interesting

LIST OF CROSS-BREAK TABLES

Variables	
5-14	sound discrimination and least favourite subject
4-14	language analysis and least favourite subject
6-14	sound-symbol association and least favourite subject
8-14	I.Q. and least favourite subject
19-14	what students like most about FL study and least favourite subject
18-14	basis of Form II FL election and least favourite subject
18- 3	basis of Form II FL election and vocabulary
18- 4	basis of Form II FL election and language analysis
18- 5	basis of Form II FL election and sound discrimination
18- 6	basis of Form II FL election and sound-symbol association
18- 8	basis of Form II FL election and I.Q.
18- 9	basis of Form II FL election and bilingualism
18-17	basis of Form II FL election and election of FL in Form II
18-15	basis of Form II FL election and school aspiration
18-12	basis of Form II FL election and favourite subject
3-12	vocabulary and favourite subject
16-12	vocational aspiration and favourite subject
15-12	school aspiration and favourite subject
15-19	school aspiration and what students like most about FL study
15-14	school aspiration and least favourite subject
15-20	school aspiration and what students like least about FL study
3-20	vocabulary and what students like least about FL study
4-20	language analysis and what students like least about FL study
5-20	sound discrimination and what students like least about FL study
6-20	sound-symbol association and what students like least about FL study
8-20	I.Q. and what students like least about FL study
9-20	bilingualism and what students like least about FL study
12-20	favourite subject and what students like least about FL study
16-20	vocational aspiration and what students like least about FL study
17-20	election of FL study in Form 4 and what students like least about FL study
17-19	election of FL study in Form 4 and what students like most about FL study
3-19	vocabulary and what students like most about FL study

ILLUSTRATION OF A CROSS-BREAK TABLE

17: Will you elect FL study in Form II?
18: Why? (Basis of FL election/non-election)

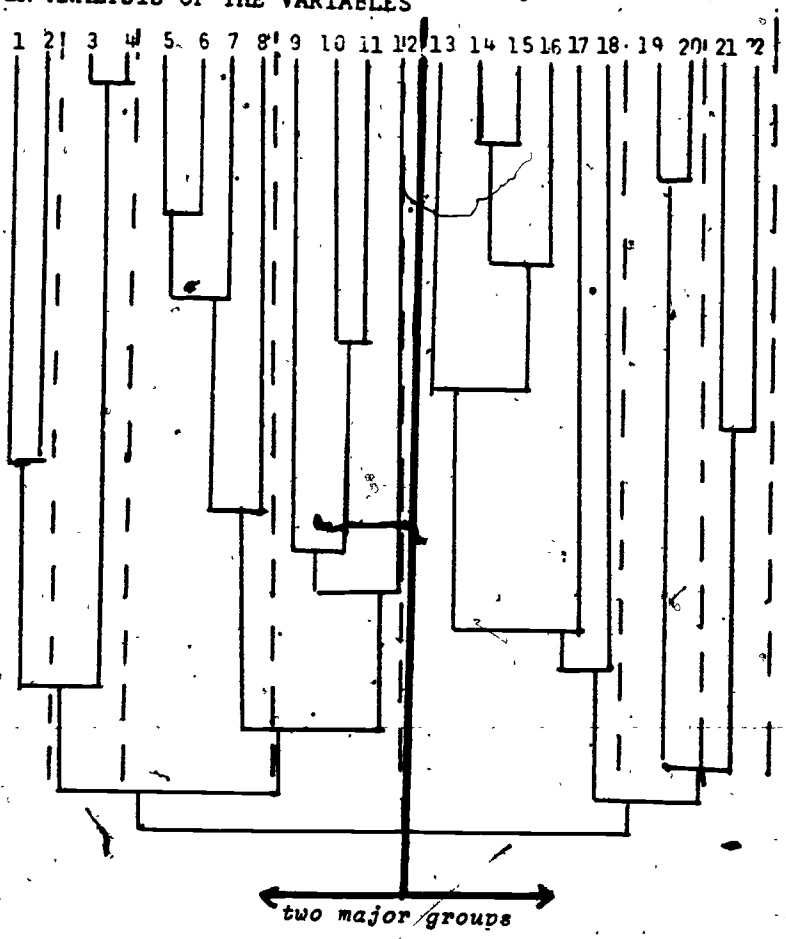
	difficulty/ease			*utility*			*interest*				
	too difficult -1	depends on difficulty +1	it's easy 01	not useful -2	depends on usefulness +2	its useful 02	boring, not interesting -3	depends on interest +3	it's interesting 03	external conditions	no reason given
No 1	5 / 213		8 / 248				14 / 268			1 / -80	1 / -74
Undecided 2	4 / -17		10 / 89	4 / -42		5 / 92	7 / -37	3 / -81	8 / 90	25 / 410	19 / 71
Yes 3		1 / 233		1 / -72	15 / 266			26 / 225		14 / -87	
8										1 / 233	1 / 233

EXPLANATION OF NUMBERS IN CELLS.

In each cell the upper half is the observed number of students.

The lower half is the percent of discrepancy between the expected number of students (calculated on the basis of random placement) and the observed number.

CLUSTER ANALYSIS OF THE VARIABLES



LEGEND

1 sex
2 musical experience
3 favourite subject
4 favourite subject -N*
5 PLAB interest
6 FL election in Form II
7 comparative interest
8 basis of FL election -N
9 bilingualism
10 school aspiration
11 vocational aspiration
12 comparative difficulty
13 vocabulary
14 sound-symbol association
15 PLAB total
16 I.Q.
17 sound discrimination
18 language analysis
19 least favourite subject
20 least favourite subject-N
21 what students like most about present FL study
22 what students like least about present FL study

The most interesting results of the cluster analysis appear in the division into two major groups as designated above, 'A' and 'B'.

As expected, all the language aptitude subtests cluster together with I.Q. It is interesting that one's least favourite subject in school (being academic) also clusters with this half of the variables. (Group B)

However, within the language aptitude/I.Q. group, language analysis and sound discrimination form a subgroup apart from the main cluster, which includes S-S association, vocabulary, PLAB total, and I.Q.

As with the results of the correlation matrix, sound-symbol association and the total PLAB are the two variables which cluster most closely (excluding pairs of variables which were intended to measure the same thing, ie. favourite subject, ordinal and non-ordinal; least favourite subject, ordinal and non-ordinal). In group B, the next closest relationship is with I.Q., and then with vocabulary

What clusters together in Group A, as well as what does not, is the most interesting. Students stated intention to elect FL study in Form II as well as 'comparative difficulty' of present FL instruction clusters with the 'non-ability' variables rather than with the 'ability' variables.

*N = non-ordinal variables.

Intercorrelation of part scores and total scores (excluding GPA) for the PIMSLEUR LANGUAGE APTITUDE BATTERY for a group of Sydney students beginning Form I. Sex and I.Q. are included.

Variable Nos.		3	4	5	6	7	8	mean	sd
2	interest	.03	.13	-.27	-.03	.15	-.10	4.9	2.0
3	vocabulary		.20	-.06	.28	.51	.43	5.5	2.6
4	language analysis			.01	.09	.42	.20	4.5	1.9
5	sound discrimination				.23	.55	.23	14.4	3.9
6	sound-symbol association					.74	.54	10.5	5.1
7	PLAB total (2-6)						.57	40.7	8.8
8	I.Q.							99.8	11.0

Intercorrelation of part scores and total scores (excluding GPA) for the PIMSLEUR LANGUAGE APTITUDE BATTERY for a sample of 1,201 U.S. students beginning grade 7.

Variable Nos.		2	3	4	5	6	7	8	mean	sd
2	interest		.20	.14	.16	.21	.44		5.2	2.4
3	vocabulary			.36	.30	.46	.71		8.8	3.6
4	language analysis				.26	.36	.58		5.4	2.5
5	sound discrimination					.37	.68		16.0	4.4
6	sound-symbol association						.77		13.4	4.4
7	total (1-6)								59.9	13.2

Means and standard deviations of variables categorized ordinally for a group of Sydney students beginning Form I

	cases	mean	S.D.
sex	160	1.6	.5
interest (PLAB)	103	4.9	2.0
vocabulary	146	5.5	2.6
language analysis	146	4.5	1.9
sound discrimination	151	14.4	3.9
sound-symbol association	151	10.5	5.0
total PLAB	123	40.7	8.8
I.Q.	155	99.8	11.0
bilingualism	159	1.2	.4
musical experience	159	1.5	.8
favourite subject	159	1.7	.8
least favourite subject	155	2.8	.6
school aspiration	155	2.5	.2
vocational aspiration	157	1.9	.8
desire to elect FL in Form II	158	2.1	.7
comparative difficulty of present FL study to other subjects	156	1.8	.8
comparative interest of present FL study to other subjects	153	2.0	.8

PEARSONIAN COEFFICIENTS OF CORRELATION

	1 Sex	2 Int.	3 Vocab.	4 lang.An.	5 Aud.Dis.	6 SoundLt.	7 PLAB Total	8 I.Q.	9 Biling.	10 Mus.Ex.	11 Fav.Subj.	13 Least Fav Asp.	15 School Asp.	16 Vocation Asp.	17 Form II PL Elect.	21 Comp. Diff.	22 Comp. Int.
1 Sex										.21	.20					.16	-.16
2 Interest					-.27							-.25	.39		.50	.21	.34
3 Vocabulary				.20		.28	.51	.43									
4 Lang. Analysis							.42	.20			-.18						
5 Aud. Discrimination						.23	.55	.23					-.19				
6 Sound-Letter Cor.							.75	.54				.16				.20	
7 PLAB Total								.58									.23
8 I.Q.												.17					.16
9 Bilingualism													.17		.20		
10 Mus. Exp.																	
11 Fav. Subject												-.17	.22	.20			
13 Least Fav. Subject																	
15 School Asp.														.30	.22	.22	
16 Vocation. Asp.															.18		
17 Form II PL Elect.																	.41

*1. The above table represents only those variables which can be expressed ordinally. Therefore, variables 12, 14, 18, 19, & 20 which are non-ordinal, are omitted.

*2. The above table presents only those coefficients which are greater than .15.

FREQUENCY DISTRIBUTION OF PART SCORES AND TOTAL SCORES ON THE PIMSLEUR LANGUAGE APTITUDE BATTERY FOR A GROUP OF FORM I STUDENTS AND RANKED VALUES FOR EACH SCORE.

part 3 - vocabulary

score	frequency	rank
0	3	2
1	3	5
2	9	11
3	17	24
4	19	42
5	16	59
6	10	72
7	12	83
8	14	96
9	10	108
10	5	113
11	2	119
12	2	121
13	1	123

part 4 - language analysis

score	frequency	rank
0	5	3
1	3	7
2	10	13
3	32	36
4	16	58
5	22	77
6	15	96
7	12	109
8	3	117
9	4	120
10	1	123

part 5 - sound discrimination

score	frequency	rank
3	1	1
4	2	2
5	1	4
6	2	5
7	6	9
8	8	16
9	6	23
10	5	29
11	9	36
12	8	44
13	13	55
14	11	67
15	10	77
16	7	86
17	6	92
18	8	99
19	7	107
20	2	111
21	4	114
22	0	-
23	5	119
24	2	122

part 6 - sound-symbol association

score	frequency	rank
3	1	1
4	3	3
5	1	5
6	3	6
7	9	12
8	7	20
9	11	29
10	4	36
11	13	45
12	16	59
13	10	72
14	11	83
15	5	91
16	10	98
17	6	106
18	6	112
19	3	117
20	3	120
21	1	122

part 7 - total PLAB

score	frequency	rank
12	1	1
19	1	2
23	1	3
24	1	4
25	1	5
26	1	6
27	1	7
28	2	8
29	3	11
30	4	14
31	3	18
32	3	21
33	2	23
34	4	26
35	5	31
36	5	36
37	3	40
38	7	45
39	7	52
40	5	57
41	8	62
42	3	68
43	8	73
44	4	79
45	4	83
46	8	89
47	6	96
48	2	100
49	4	103
50	3	107
51	3	110
52	2	112
53	4	115
54	1	118
56	1	119
58	1	120
60	1	121
62	1	122
63	1	123

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