

"OLAF" AND THE INSTANTANEOUS
MEASUREMENT OF SPOKEN LANGUAGE SKILLS

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Introduction:

During the past two decades the objective of language training has moved toward the mastery of the spoken language. Translation has given way to conversation; reading has given way to verbal expression and extemporaneous narration. Although these other skills have not been abandoned, emphasis has shifted to providing the student with a practical and effective communications tool, the mastery of the spoken language.

These developments in language learning objectives and techniques over the last twenty years, notwithstanding, written tests tend to evaluate written skills, not the total language skill, and definitely not the oral component of that skill. Examinations of oral fluency are rarely given, in spite of the fact that foreign language courses today usually stress the ability to communicate in the target language. This tends to be true the younger the student and the less advanced his achievement. The five-year old living in a bilingual or multilingual environment, for example, has achieved maximum or "native-like" mastery of his two or more languages; but he is not examinable by written tests.

The correlation between written tests and the oral language skills only begins to become significant at the very advanced levels of adult language learning. But it is at these advanced levels where mastery is nearly complete and progress is approaching non-measurable increments that testing is of little interest. Recognizing the need to test the progress and achievement of the oral component in language learning at all levels, Nicolas Ferguson, the Director of CEEL, the Experimental Center for Language Instruction in Geneva, developed and programmed a digital computer for that purpose, OLAF. OLAF is an acronym for "Oral Language Analyser and Feedback System" and is designed to provide an instantaneous measurement of spoken language skills.

After several years of research and careful statistical analysis, Ferguson succeeded in isolating two elements of the spoken language which have a remarkably high positive correlation with the overall spoken skill. He defined these as "fluency" and "correctness". He was henceforth able to disregard many criteria which traditionally have been used to describe and measure oral language skills, hesitation, syntactic complexity, choice of words, intonation, rhythm, accent, pronunciation, and style. He then de-

fixed the "level" of skills in terms of the number of normalized hours of study needed by an average student to reach a given level. "Normalized" hours are that fraction of classroom time which is productive and contributes to the skill being taught. It is exclusive of time spent in the student's native language discussing cultural aspects of the language or the country where it is spoken. It is also exclusive of activities designed to motivate or entertain the student in loosely structured social activities. Normalized hours often approach only 50% of total classroom time. Ferguson then plotted "fluency", "correctness", and "level" on a three dimensional graph. The graph was then reduced to an algebraic equation. OLAF has been programmed to solve instantaneously that equation for oral performance level, given "fluency", and "correctness".

Validation tests were conducted with 2,000 students over eighteen months. OLAF was shown to produce in one minute the same results as an interviewer working for seventy-eight minutes. Since five minutes are usually spent examining a student, OLAF produces results equivalent to a panel of examiners working for a total of six and one half man-hours. Groups of native speakers working independently or in panels, with tape recorders and transcripts of the recording have been unable to surpass OLAF's validity and statistical reliability, a remarkable 0.89'.

THE OPERATION OF OLAF

The operator has a small hand held control panel which contains six buttons. One button, "reset", is used to begin a test. Another, "pause", is used to interrupt a test temporarily without losing the accumulated data. The remaining four buttons are used during the test itself.

"Fluency"

Each time the subject expresses a complete thought, the operator presses one of four buttons. A complete thought can be defined for the purposes of OLAF as a "Tone Group", clause, simple sentence, etc. The computer maintains a running total of buttons pushed and records elapsed time. The ratio of buttons pushed per time elapsed is defined as "fluency". This figure is a highly significant one statistically. It has a high positive correlation with most of the other criteria one normally uses to evaluate spoken language skills. In an emergency and in the absence of a computer or native examiners, one could simply count the clauses expressed and divide by the elapsed time and obtain a useful although rough index of a student's ability in the spoken language being measured.

"Correctness"

Each of the four buttons used during the testing procedure is weighted according to the seriousness of error of each clause or combination of clauses. The following table gives examples of typical operator evaluations of correct-

ness and the buttons he would press to feed this information into the computer analyzing the subject's speech for correctness of response.

<u>Button</u>	<u>Value</u>	<u>Example (explanation)</u>
B_1	0	He is went to the store. (incorrect clause)
B_2	.25	He is going to the store and he bought a book. (correct clauses; incorrect combination)
B_3	.50	He is going to the store and he is buying a book. (defensible, but non-native)
B_4	1.00	He went to the store. He is going to the store to buy a book. He went to the store to buy a book. He went to the store and bought a book. (correct clauses, content, and native construction)

The computer adds the values each time a button is pushed. The ratio of the accumulated values to the number of entries is defined as "Correctness".

"Level"

Given the values for "fluency" and "correctness", the computer then solves the algebraic equation for "level", which is displayed instantaneously on the computer as a number, from zero to 1,000 as shown in the table below. Experience has shown that certain levels correspond to certain activities or traditional definitions of spoken language achievement.

<u>Level</u>	<u>Normalized hours of instruction</u>
0	<u>Beginner</u>
25	<u>False Beginner</u> . Phrases of 3-4 words. Unable to sustain a conversation.
100	<u>Intermediate</u> . Phrases of 5-6 words. Often requires restatement before understanding.
175	<u>Tourist</u> . Phrases of 7 words. Occasionally requires restatement.

250	<u>Social</u> . Phrases of 8 words. Understands most speech at normal speed.
325	<u>Executive</u> . Phrases of 9 words. Understands two natives with effort.
600	<u>Fluent</u> . Occasional idiomatic errors.
800	<u>Near-native</u> . Occasional correct but non-native choice of words.
1000	<u>Native</u> .

USES OF OLAF

The arrival of OLAF on the language instruction scene has suggested a number of uses in the placement and evaluation of students. The following are some of the most important:

1. To determine in which of several classes, grouped according to homogeneous abilities, a student should be placed.
2. To determine the progress of students during a course or semester, or to determine the progress of remedial language instruction or tutoring.
3. To determine the readiness of a student for some specific activity, such as entering a university in a foreign country, travel for pleasure, travel for business, relocation of an executive and his family to a foreign country, etc.
4. To determine the rank of candidates for positions such as teachers, interpreters, bilingual secretaries, executives, salesmen, etc.

OLAF can be used without the subject being aware that he is being tested, by telephone, in casual conversation individually, or as part of a group. In five minutes OLAF can produce an evaluation equal to that of a panel of native speakers conducting an interview lasting six and one half man-hours. In spite of its relatively high cost, OLAF is a valuable tool with a high degree of proficiency, which can be used in language teaching today.¹

¹ Sistemas Educativos, S. A. in Mexico City offers OLAF with an operator to teachers, schools, institutes, and businesses at 1,000 Pesos per half day and 1,500 Pesos for each full day. OLAF can process at least ten students per hour. Purchase price of the instrument is \$5,000 (U.S.) and includes a three day training program for the operator.