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The language laboratory as an instrument of learning in an individualized study programme

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If one is to believe the manufacturers of LL's, one of the great advantages with this kind of equipment is the possibility to create a study programme suited to the needs of the individual student. Most manufacturers forget to mention, however, that this advantage can be obtained only if the consumer possesses a series of diagnostic tests, a wealth of programmes and a flexibility in the use of staff and student time which is only rarely possible to achieve. On the other hand, given this paraphernalia, and given a readiness to use the potential benefits of individual learning programmes, the LL seems to be an effective instrument of learning. It is *not* the LL that is effective, however; it is the over-all planning with a balanced division of group and individual work that is effective.

Within the PIE Project (1969–1973) at the English Department, University of Stockholm, we aimed at a fully individualized study programme for each student, based on the student's proficiency in English on entry, his capacity for language learning as evidenced in a special language analysis test, his available time¹ and his previous experience of academic studies. For administrative reasons we have had to lower our ambitions to group individualization in most cases; however, in some oral exercises we did obtain – thanks to the LL – a full individualization of the students' course programmes².

By the academic year 1967–68 it had become obvious that our students' standard of pronunciation was sensationally low and that an astonishing number of students failed in their final (and oral) examination because of incorrect basic phonemes, mispronunciation of common words and an intonation without the slightest resemblance to English. As an improvement of the situation implied information to the people responsible for the curriculum on what the students' learning needs were, our first step was to create a simple diagnostic test.

This test consisted of 50 sentences, chosen to make the student pronounce both the basic phonemes we wanted to check and a series of English words

1 An increasing number of students have full or part time jobs during their academic studies.

2 The findings of the PIE Project indicate the importance of a careful balance between group work and individual work, and also stress the dangers of adapting course curricula to the students' "needs", cf Vinde, Ann-Marie: *Nivagruppering*. Rapport om försöksverksamhet 1970–72. PIE Project report 2, 1973.

and phrases³. From 1968 onwards, one of the first tasks of our students has been to visit the language laboratory to record these 50 sentences, and the tapes have then been evaluated by the phoneticians in the department. A week or so after taking this test the student has received a "test card" on which his mistakes have been marked.

As can be seen from figure 1 the card contains information not only on what kind of mistakes the student has made but also on what particular programmes the student should go through in order to improve his pronunciation and intonation. In all 78 points were checked, ranging from basic phonemes and intonational patterns to weak forms. In the revised edition the card was divided into two halves: 1–31 "grave mistakes" and 32–78 "flaws" indicating to the student which mistakes must be corrected to pass the final examination and which mistakes might be accepted (but would cause him to get a low grade).

STOCKHOLMS UNIVERSITET

ENGELSKA INSTITUTIONEN

Fonetisk analys och uttalstest A

Brittiskt uttal

Personnr: 1 34 | 06 | 11 | 2121

1					/l/ i bet. stav: ej öppet, ej slappt nog	S 21-23, SP 1, SP 2
2	✓				/e/: ej slutet nog före annan kons. än /r/, mörkt l	S 23-25, SP 2, SP 2B
3					/o/: mer eller mindre diftongerat, särskilt AW, AU, OU	S 35, SP 5, SP 8
4					/u/: diftongen /əu/ i st. f. /u:/	S 36, S 52-54, SP 3, SP 3B
5					/əu/: felaktig diftongering: fel startpunkt; svag diftongering; monoftong: /u:, o:, ɔ:, ɔ/	S 52-54, 56-58, SP 3, SP 3B SP 8
6					/t,d/: dentalt uttal	S 105-108, SP 15
7	✓				/t,d/ initialt: oaspirerat	S 102, 107, SP 15
8	✓				/b,d,g/ finalt; fortis-uttal (tyskt och finskt uttal)	S 103, 105-107
9					/z/ finalt: stämton resp. vekhet saknas helt	S 73-80, SP 10, SP 10B
10					/z/ medialt: stämton saknas	S 73-80, SP 10, SP 10B
11					/θ,ð/: feluttalade som /s,f,t/ resp. /z, v, d/	S 80-86, SP 11
12	✓				/ʃ,ʒ/: feluttalade som /s,z,c,x/	S 86-88, SP 12
13					/ʒ/: stämton saknas	S 86-88, SP 12

3 Examples:

(1) *Keep it in the deep-freeze*: phoneme [i :]

(2) *A little fish in a big net*: phoneme [i]

(40) *He congratulated me on my perfect pronunciation of different words*: weak forms

(47) *Do you like Brahms?*: intonation

The diagnostic test is compulsory as is a test on pronunciation and intonation, but it is entirely up to the student to decide if, and in that case, when and how often he wants to use the LL facilities. If he chooses to do so, he signs up for one or more sessions in the LL, brings the test card to the LL office and receives the particular programme he wants to use. He hands his test card to the instructor on duty and tells the instructor what programme he has chosen. The instructor monitors his exercises, gives him help and advice and also indicates when it is time to move on to another programme. As the instructor has the student's test card on the teacher's console, he can concentrate his attention on the student's more serious problems; "slips of the tongue" that often take up so much of the teacher's and student's time when the instructor just listens in now and then are thus ignored.

The pronunciation and intonation test is presented once a week. When the student feels that he is ready for the test he just walks into the LL, draws one of the 30 tests available, records the passages and gets his result by mail after a few days. If he is free from "grave mistakes" he passes; if he is not, he can see from his test card what remaining problems he has to get to work at. Needless to say, all 30 tests include the same phonemes, intonation patterns etc as the diagnostic test.

The demands on the Department in the autumn of 1969 when we had 642 students taking part in the scheme can be seen in table 1.

Table 1:

Activity	Type of staff involved	No of staff hours	Approximate cost in US \$
Supervision of diagnostic test	Assistent	20	145
Evaluation of diagnostic test	Senior phonetician	160 ¹	1.300
Instructional duty in the LL	Foreign lektor	670 ²	11.615
Supervision of test	Assistent	35	250
Evaluation of test	Senior phonetician	200 ¹	1.600
		1.085	14.910

1 working hours; 1 teaching hour is evaluated as 3 working hours

2 teaching hours

During 15 weeks the Department offered 6.700 learning hours in the LL to the students, i.e. a weekly average of c 445 hours⁴. No more than 10 students per instructor was permitted. The total cost, including the testing programme, was US \$ 14.910 or US \$ 23.2 per student. This corresponds to 8.3 % of the Department's budget for these students for one term. For the same amount of money we could have given each student e.g. 20 grammar lessons or 12 conversation periods with one lektor per 10 students.

What did we – or rather the students – achieve through this scheme? Before entering the university, a Swedish student has had 8 years of English in school (well above 1000 hours of English). The results of the diagnostic test were, however, appalling: 99 % of the students misplaced the stress on three or more out of 15 common words (such as *interesting*, *literature*, *ignorance*), some 90 % of the students had not discovered weak forms (before stressed vowel as in *connect*, after stressed vowels as in *sentence*, or in unaccented words, e.g. pronouns, prepositions and auxiliaries), intonation was extremely poor with few exceptions, and some 50 % of the students had not even got the correct basic phonemes.

One would assume that more than a thousand hours of English instruction prior to the university studies would lay the foundations of speech habits. Yet, after an average period of less than 9 hours individual study in the LL over 70 % of the students managed to pass the pronunciation test in which any one of the mistakes mentioned above would mean instant failure. The results over the period 1970–73 are given in table 2⁵.

Results in pronunciation test

Table 2:

	1st attempt pass	2nd attempt pass	3rd attempt pass	4th attempt pass	5 or more failed attempts pass	
Percentage of students	77 %	16 %	4.9 %	1.7 %	0.4 %	0.0 %

4 In 1969 the University had 3 LL's with a total number of 51 learning positions. As the LL's were used 40 hours per week the University could offer just over 2 000 learning hours per week for all departments. Since 1971 the University has a 160 position installation and can thus offer more than 6 000 hours per week.

5 Quoted from Jones, D.: "Pronunciation and Listening comprehension teaching", in Carlson, I. (ed): *Språkfärdighet: metoder och undervisningssystem*, Project PIE, report 4, 1973.

I would maintain that these are excellent results. The key to the success lies, in my opinion, in the fact the Department took the pains to ensure effective learning hours in the LL. The students did not go through a "standard course"; on the contrary, each student concentrated on his learning needs as evidenced in the diagnostic test. The students were not forced to go to the LL – they were welcome to spend the time they wanted in the LL doing just what they thought would be of benefit to their study career.

When this scheme was introduced many teachers expressed their doubts about the plausibility of the system. How could a teachers attend to 10 students practising on 10 different programmes? As the students could sign up for any available time they liked, they might meet different instructors on different occasions. How would the continuity in the instruction be preserved?

All these misgivings proved wrong. The students rather enjoyed seeing new faces and hearing new voices comment on their work. They felt responsible for their studies – a qualified instructor was there to help them if they needed help, but the overall responsibility for their progress rested on their own shoulders. Thanks to the test card the instructors knew exactly what a student should be concentrating on, and he could intensify his efforts to help the student to overcome these particular problems. It should be mentioned that the student is free to choose British or American pronunciation; if he chooses American pronunciation his test is evaluated from American standards and he will have an American lektor monitoring his work.

When students have problem with their basic phonemes or their intonation, monitoring and supervision seems to be necessary. However, when students have not learned the pronunciation of the 1000 most frequent words or the general rules for the pronunciation of English, they may want to practice in the LL – or they might want to learn this from phonetic transcriptions in their literature course. As we do test the students' pronunciation of frequent as well as infrequent words (according to general rules) we have supplied a number of exercises for LL use for those students who want this⁶. In this case monitoring is not provided and consequently the student is welcome to the LL any time he feels like a bit of LL practicing. (Most students seem to prefer coming to the LL to cassette tape-recorders, as they can use the intercom to get in touch with the instructors on duty; they are always ready to give advice although they are not continuously monitoring these students). I should like to agree with my former colleague

6 The Department has been fortunate to be able to use also all the programmes that were produced within the LL Research Project (1966–1970) as a part of the Commission on University Teaching Methods (1970).

David Jones' conclusions: "As a result of the experience gained during the PIE-project the English Department has succeeded in establishing a course in pronunciation which is highly individualized and effective⁷." It takes a LL to make this possible!

In the hey day of the "language laboratory method" all kinds of exercises were carried out in the LL, sometimes even literature analysis! Within the PIE-project we have used the LL primarily for pronunciation practice and for oral comprehension (which follows the same model as the pronunciation practice with the exception of supervision during practice hours)⁸. We have also, however, used the LL for remedial work in grammar with obvious success.

The possibilities of using the LL for individualized work in grammar can be demonstrated by this example. The use of the definite article in English offers great difficulties to Swedish students and we therefore produced a LL programme on the definite article. We could show that while students following our normal grammar course spent on the average 9.4 hours learning to master this problem, students using the LL programme spent only 3.2 hours⁹. The difference in students' time is, to say the very least, remarkable, and as the programmes also were self-instructing we could save more than 128 qualified staff hours (teaching hours).

It may seem reasonable to suggest that, as a consequence of this experiment, we should abolish all grammar classes and rely solely on LL programmes. In our experience there is, however, a limit to the number of "learning" hours a student is prepared to take in the LL (as opposed to the number of "sitting" hours which can be decided on by Departmental decree)¹⁰. It is not unlikely that the favourable results of the experiment with the definite article were due to the fact that the students had got fed up with their grammar teachers; consequently, when the students get fed up with LL work the grammar teachers will come in very handily¹¹.

7 Jones, D., *op.cit.*, 25.

8 Supervision is given in group work – which does not take place in the LL – involving role-playing based on video-tape presentation. Suggestions for suitable individual LL practice is given by the teacher in charge along the same principles as the diagnostic pronunciation and intonation test; the procedure is, however, less formal.

9 Effective learning hours (60 minutes) including – in the case of the normal course – attending the grammar classes.

10 If one deducts the 4 1/2 hours spent in class – which probably resulted in little *learning* – from the group following the normal grammar classes, the difference is less striking (4.9 hours versus 3.2 hours).

11 Grammar programmes are nowadays mostly used for remedial purposes by students who prefer a combined audio/visual presentation to the printed materials.

Thus, we do not teach in the LL. Programmes are chosen by the students themselves, when and if they feel that a LL session might promote their studies¹². The role of the instructor is to give advice to the individual student, not to comment on general problems. The language laboratory has no special standing but is used more or less as the library where students may use the books freely. It is not more remarkable to have an appointment with a member of the staff in the LL than to have an appointment in the library or in a seminar room for individual tuition.

We have also tried to make the LL look less like a chamber of horrors and more like a normal room. In the new installation at Frescati all tape-recorders are placed in a central room, partitioning walls between the students' places have been abolished and the students sit in groups in a "learning landscape" – not in endless rows. Through movable screens we can form groups of almost any size (from 60 downwards) and in almost any shape. In fact, the only outward signs of an LL is the small control box on the students' desks and the headphones; as we know that certain students, eg. those wearing spectacles, object to headphones we have even, as an experiment, inserted a couple of "eggshaped" armchairs with loudspeakers which make headphones superfluous. Smoking is not allowed, but you are welcome to bring a cup of coffee if you like.

The way we use our LL we need to be flexible in group size. For testing purposes we want as large an LL as possible, while we want small groups when we have monitored exercises, sometimes as small as two or three for special phonetic training. In cooperation with the LL department of Tandberg Radiofabrikk (Oslo, Norway) which has supplied the equipment, we have devised a system in which a number of teachers' consoles duplicate each other, and it is thus possible to form groups of optional size. The fact that a test is in progress does not prevent one or more very small groups to carry on monitored practice or vice versa.

Such an installation is expensive – c US \$ 220 000 for 160 learning positions. Does it pay its dividend?

I do not think that an LL used as a teaching instrument could be defended. However, used as an instrument – or perhaps better simply as a place – of learning I believe that we can justify the expenditure. We must always keep in mind, however, that learning presupposes motivation, and, consequently, we must present such a scheme that the students want to go to

12 An administrative problem has been the copying of tapes and texts for student use. Experience has shown that we need c 40 copies of the more frequently used programmes.

the LL to *learn* — not to sit. A library is a very costly part of any university. Used as a lecture hall it is not a particularly sound investment; used as a place where a large group of people is engaged in learning activities it seems indispensable. The less we regard the LL as a “device” or an “instrument” the better; it should simply be regarded as one many learning facilities within the university. The equipment — a number of tape-recorders and an intercom — is not sensationally complex; a modern lecture theatre has far more advanced equipment.