

CHAPTER V

CONDUCT OF THE EXPERIMENT AND ANALYSIS OF DATA

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Evaluation as reported in the preceding chapter had only one objective : to improve the course in its various aspects and prepare it for the final validation, which is being reported in the present chapter. Upto this point all efforts were in the direction of preparing and adapting suitable instructional material and adopting appropriate integrated techniques to take an adult learner from whatever point he is at in the learning process to the highest possible level. The course of action ranged from a study of adult-needs in English to evaluation and testing of the course through individual and group try-outs, effecting modifications at every stage as a result of constant testing.

At the experimental stage, however, not only the learning process, but factors affecting the learning process directly or indirectly are also taken into consideration. Besides the criterion behaviours, learners' attitudes towards what they learnt and how they learnt are given due weightage and relationships established between these factors. Such an exercise tests the validity of the course not only in terms of the learning behaviour, but also in terms of its desirability and feasibility in the future to a similar group of learners. The experiment for the purpose of validation was conducted in the summer of 1980 for eight weeks.

5.1 NATURE OF THE SAMPLE

Adult learners who responded to the advertisement for English Improvement Course published by the Department of Adult and Continuing Education M.S. University, Baroda, constituted the sample for the final experiment. The group initially consisted of forty four men and women of whom only thirty have been included in the experiment. The adults who dropped out after a period, those who were irregular in attendance and those from whom required data could not be collected have all been excluded from the experiment, although when they came they were also given the programmes to work with and permitted to participate in discussion, practical work etc. After eliminations, the experimental group ultimately consisted of thirty adults; fifteen men and fifteen women. The group consisted of students, school/college dropouts, teachers, technicians, those engaged in small business, clerks and house-wives, with their age ranging from 18 to 45. That the course was attended by adults voluntarily and after paying a fee stipulated by the department vouch for their motivation. Further it may be stated that the English Improvement Course offered by the Department of Adult and Continuing Education is non-formal in nature and as such does not demand very strict attendance. Yet the adults who formed the experimental group kept regular attendance, which is a further evidence of their high

motivation. Those who did not have a high degree of motivation dropped out during the course and they have been excluded from the experiment.

Experimental research generally implies the existence of two groups (experimental and control) in an experiment. The size of the sample being small (n=30) in the present study a control group was not possible.

5.2 SCHEME OF THE EXPERIMENT

Stage - I

Administration of Raven's Progressive Matrices, Urban SES
Scale and Pretest. (2 sessions)

Stage - II

Administration of the treatment

[illegible]

Stage - III

Administration of Posttest
and
Reaction Scale

2 Sessions

1 Session denotes 2 - 2½ hrs.

5.2.1 It was reported earlier in the third chapter that Raven's Progressive Matrices was found to be a relevant tool to measure the level of intelligence of the adult learners. The test was administered at the beginning of the course and the subjects were allowed unlimited time to complete working through the matrices.

5.2.2 Kuppuswamy's urban scale was administered to measure the Socio-economic status level of each subject in the sample.

5.2.3 Pre-test: The diagnostic pre-test (Appendix E) was administered next. The oral items given to test usage, accuracy, fluency, punctuation, intonation, comprehension and speed brought the learners in close contact with the teacher and helped in creating a free and fearless atmosphere which is conducive to learning. The oral testing was made to seem very casual although items were prepared with great care and the mark sheets already prepared. Items for oral testing included queries regarding the learner himself/herself, his/her occupation, his/her English language needs, and his/her

expectations from the course. Testing was done on an individual basis when the rest of the group was engaged in answering test items which required written responses. The pretest apart from providing the investigator with the data required for validation purposes gave the adult learner an insight into the nature and content of the course ahead of him/her.

5.2.4 Treatment: Instruction was imparted using a variety of techniques, the discussion of which follows in the succeeding section.

5.2.4.1 Lecture

Every instructional unit began with an introductory structured lecture, the purpose of which was two-fold; first, to motivate the adults towards the following unit, second to introduce the unit, highlighting a few important points they are likely to come across when they read the PLM. During lectures, adults could interrupt and seek clarifications. (Lecture points are given in Appendix B).

5.2.4.2 Programmed Learning Material

Unit-I: PLM for the first unit took a longer time than for the other units for three obvious reasons:

- i) For the first time, the adults were working with a programme of this kind. PLM is a relatively novel technique in our class-rooms and without exception

all the adult learners were being exposed to this particular technique for the first time.

- ii) The first unit contained more frames (83 in number) than the following two units. This naturally involved more time, for the learners had to work through more steps.
- iii) An additional provision along with the PLM was the cassette which contained nine situational dialogues, whose text was given in the programme itself. This meant that the learners read the dialogues in the programme, listen to the tape with script in hand, read again to be able to answer the questions given in the criterion frames.

Speech having been given primary emphasis in the present study, more frames and more dialogues were necessary to achieve the objectives specified in advance.

Unit-II: PLM for the second unit on reading consists of fifty-six frames and four model readings on tape. The programme for this unit was worked through in pairs, where one adult read and the other provided the response, although both of them wrote the responses down separately on his copy of the programme. The reading of the subsequent frame was engaged in by the other person and response given by the listener. Such a provision was made to ensure that not only silent reading skills but oral reading skills could also be taken care of. By pairing

off one fast learner with a slower one, the latter received additional help and the former enrichment. There was give and take of constructive criticism between the partners.

Unit-III: The third unit, entitled 'Writing' consists of fifty one frames, where no tape-recorder was used, but frame No.19 was read out by the teacher more than once to help the learners understand the peculiar problems of English spelling system. (A poem taken from Katherine Buxham's 'Word Study' was used to illustrate this peculiar trait of the English language and the last word of each line was explained and discussed with the whole group once and then with individuals. Apart from this deviation, the programme was worked out on an individual basis. The use of a cassette was unwarranted for practice in writing and hence its use was not considered. However visuals in the form of cartoon-strips, posters and pictures were used to help in creative writing.

5.2.4.3 Tape Recorder

In order to sustain interest during reading the programmes, and to facilitate ear-training and exposure to native English speech a cassette was used which contains model dialogues and readings. Model dialogues were given as part of the PLM and further for practice purposes too. Individual learners and small groups listened to the taped dialogues as and when they desired such a procedure.

5.2.4.4 Discussion

At this stage the discussion was open to the whole

group with the teacher monitoring the discussion. As against the interaction between the teacher and the individual learner during the reading of the PLM or during lecture there was more involvement by way of interaction among students themselves and with the teacher. Teacher demanding suggestions, opinions and answers from particular students helped in maximising group-involvement in discussion. Such a sequence, of a session devoted to discussion at the close of PLM was followed for all the three units. During discussion, support material points which needed clarifications were also discussed.

5.2.4.5 Practical Work

Unit-I: Since the first unit was based on the development of speech skill, practical work involved small groups of three or four. Construction of oral dialogues on given situations listening to more dialogues, discussions on given topics and reporting the discussion to the class later, studying and analysing a picture in a group - these were some of the activities predetermined for speech practice. The teacher's involvement with small groups, helping them construct dialogues and play roles in the group, and correcting commonly heard mistakes paid great dividends in terms of learning outcome and helped in establishing a free and confident learning atmosphere. The sample being adults, were more self-conscious than younger learners and they appreciated small group activities where they were not too much exposed. This could be clearly seen from their oral reactions and from the reaction-scale administered

at the end of the course. The support material entitled 'Phonetics' was given to each student at this stage and the vowel, consonant and diphthong sounds explained and practice given by way of oral drilling in the group. They were asked to take the material home to study on their own which contained plenty of practice material (Appendix A-ii).

More model dialogues depicting situations at the bank, at the air-port and at the hospital and for various purposes like 'agreeing and disagreeing', and 'giving and receiving directions' were used for practice.

Unit-II: For practical work at this stage, the support material entitled 'Reading' was used. Coleridge's 'The Deserted House' and the conversation between Bob, Julian and David 'On Footballer's Pay' and Abraham Lincoln's Gettysburg speech were used to practice oral reading. Model reading by the teacher, followed by reading by volunteers in the class and then later by particular adult learners as specified by the teacher provided practice in loud reading. The rest of the items in the support material were used for silent reading practice by individual learners in the class, answering comprehension questions, condensing the reading material into one-third of its length and doing some grammar exercises too. Towards the final stages of reading-practice, individual learners were evaluated on their oral-reading performance, and the score was later added to the reading test scores.

Unit-III: The support material prepared for Letter Writing was given to small groups of two or three to read, to react and to practise. Although the material is auto-instructional (not programmed) in nature, such a course was deliberately taken up to give the slow learner a chance to keep up with the faster learners and thus save time and maximise learning. On the other hand to the fast and the more advanced learner, such a practice gave chances of manipulating the others in the group and being enriched himself.

At the individual level, each student was required to write letters based on given topics and for the given purposes. These were carefully evaluated by the teacher and mistakes pointed out and remedial instruction given on an individual basis. Discussion and analysis of a given cartoon, poster or picture, leading to individuals writing a paragraph based on the discussion was another aspect of Practical work. Besides, writing out dialogues based on given situations, paraphrasing a given paragraph, writing short paragraphs on given topics provided practice at the individual level.

5.2.4.6 Support Materials

Support material prepared for 'reading' and 'letter writing' were used for practical work after the second and third units respectively. The material entitled 'Phonetics' prepared to develop correct pronunciation was explained in class after the first unit and practice drills

given, after which they were asked to take the material home for self-study. 'Model Dialogues' were used for practical work in small groups.

The rest of the materials entitled 'Prepositions', 'Types of sentences', 'Tense', 'Capitalisation, Punctuations and Articles' and 'Vocabulary' were given to them to work on their own. The fact that language-skills are so closely interrelated and that the correct usage of the above grammar items are important to both the spoken and written forms of communication made it valid and feasible that these items be studied any time during the course. 'Vocabulary' provides enrichment for those who would be in a position to benefit from it.

5.2.4.7 Unit Tests

The criterion-referenced tests I, II and III (Appendix E) administered after the instruction of the units contained both oral and written test items. It has been pointed out that a test might even become necessary to convince the student that he really did learn. As a learning experience for the learner and a tool for the investigator in collecting relevant data for the investigation regarding the performance of students, tests proved useful.

The third unit test contained only items which required response in writing, because the unit specifically had the objective of developing the writing skill.

5.2.4.8 Feedback Sessions

After the evaluation of each unit test, common mistakes were discussed in the class. Individual learners who desired the teacher's help in understanding and correcting their mistakes were helped after the class.

5.2.5 Posttest: The second last session was devoted to the repetition of the comprehensive test that the sample took at the beginning of the course. In validating the course such a step was necessary, which gave data regarding the achievement of objectives which could be compared with the pretest performance. The difference in the means can be attributed to the treatment the subjects received during the experiment.

5.2.6 Reaction Scale: The reaction scale prepared by Sansanwal (1977) was adapted with few modifications. The scale contains twenty-five items to be responded to by the subjects. Reactions sought were based on the techniques used in presenting the course-content. (Appendix G)

The experiment thus conducted provided data regarding the subjects' achievement on the (i) Pretest, (ii) Unit tests and (iii) Posttest; and measures of (i) Intelligence levels of the subjects, (ii) Socio-economic status level of the individual learner, and (iii) Reactions of the subjects. These data were analysed statistically to arrive at empirical evidence regarding the validity of the course.

5.3 RESULTS OF THE EXPERIMENT

The measures that were obtained from experimental subjects during the experimental treatment were analysed statistically and the results are being presented in the following sections. It may be repeated in this context that the principal objective of the present investigation was to prepare a course for adults with a view to developing their communication skills in English. It is required of a researcher that instructional material prepared as a result of research investigations be tried out on a sample of the population for whom the material is intended and produce empirical evidence to prove its efficiency. To facilitate such evidence an experiment was conducted in the manner reported earlier in sections 5.1 and 5.2. An overall analysis of the results proved that the course has been effective both in terms of learners' achievement and their reactions. A discussion following the statement of hypotheses one after another should prove appropriate in the presentation of results.

Hypothesis 1 : There is no significant difference in the mean scores of the pretest and posttest performances of the group. The following table 5.1 statistically proves the significance in the difference between the pre and post test performances of the experimental group at 0.01 level.

Table 5.1 : Showing Mean, SD and 't' value of Pre and Post test scores

	Mean	SD	t
Pretest	33.33	8.16	36.17*
Posttest	71.10	8.64	

*Statistically significant at 0.01 level

Since the t-value of 36.17 exceeds the 't' critical value of 2.76 for a two-tailed test at the 0.01 level at 29 degrees of freedom (as computed using the formula $t = \frac{M - M_{pop}}{SM}$) the null hypothesis may be rejected and the alternative hypothesis accepted.

The results as presented in table 5.1 signified that the mean difference of the group performance is statistically significant. For a more detailed presentation of results, descriptive statistical procedures have been employed. Table 5.2 that follows presents the highlights of the findings.

Table 5.2 : Showing Mean, SD and Percentiles on various tests

	Pretest	Unit test I	Unit test II	Unit test III	Posttest
Mean	33.33	61.83	56.43	63.00	71.10
SD	8.16	10.84	7.78	10.69	8.64
Percentiles					
P 10	22.49	43.50	46.83	45.50	57.50
P 20	26.00	46.75	48.83	52.17	62.50
P 30	28.49	50.50	50.50	56.75	65.00
P 40	29.99	60.50	52.00	60.50	69.50
P 50	33.50	63.50	57.50	62.17	73.35
P 60	35.00	65.95	58.70	63.83	74.64
P 70	36.50	67.32	59.90	65.50	76.00
P 80	42.50	68.68	61.10	71.50	77.50
P 90	44.75	70.05	68.16	74.50	82.25
P 100	48.50	85.50	73.50	80.50	84.50

It can be seen from table 5.2 that the average performance of the group under experiment was 33.33 on the pretest and that 40% of the group secured above 35% of marks which is generally considered the minimum requirement for being placed in the success list. On the other hand the posttest average was 71.10 and 10% of the adults secured below 57.50. The lowest recorded score in the post test was 55%. In the comprehensive test administered at the end of the course 80% of the students secured more than 60% marks which place them in the first class division. Nearly 60% of the adults have obtained more than 70% which by general standards is the distinction level.

Looking to the percentiles, it can be seen that the trend is towards a high level of achievement although mastery level where every learner achieves hundred percent has not been reached. While the tenth percentile on the pretest lies at 22.49, the posttest records the tenth percentile point as 57.50. Median on the pretest is 33.50 while 73.35 marks the mid-point on the posttest performance. The ninetieth percentile on the pretest is 44.75 whereas on the posttest 82.25 is the ninetieth percentile. It may be pointed out further that the highest point reached by the students in the pretest performance is less than the lowest point recorded in the posttest. A reference to the ninetieth percentile in the pretest (44.75) and the tenth percentile in the posttest (57.50) would illustrate the point. The range and deviations remaining

the same, the mean has been shifted by almost 38 units, signifying that the whole group has gained by about 35 units.

As can be gathered from Table 5.2 and as has been reported earlier in the same chapter and while discussing the tools in the third chapter, criterion-referenced tests were administered at the close of each of the three units. The mean performance of the group on each of the unit tests was over 56%. On unit I, the average score was 61.83 and in unit 3 it was 63.00. As against the first and third unit mean scores, the second unit mean is less. This fall in the mean score may have been due to the content and structure of the unit itself. Oral reading test included items like speed, fluency, pronunciation and intonation. Although in all the above areas there has been considerable development, inspite of efforts in the direction of improving pronunciation and intonation, the results have not been satisfactory. Two possible reasons may be pointed out in this connection. Adults are generally considered slow in acquiring motor skills unlike children who find it easy to acquire motor habits. The course being short perhaps a spectacular improvement in pronunciation and intonation are too ambitious expectations. Thorndike (1928) performed one of the few experiments in this field where different age groups equated for intelligence were taught Esperanto. His findings have been conceptually depicted as follows: "Adults are normally well motivated; they know what they want to learn. But the

structures of their first language are by now so dominant that they will interfere in the foreign language learning process. Adults are definitely slow in learning motor skills and are unlikely to acquire a perfect accent."

Looking to the mean performance of the group in the second unit, it may be stated that the present study further confirms Thondike's findings regarding the development of the sub-skills namely pronunciation and intonation.

Table 5.3 that follows evaluates the performance of the group on the various tests and makes a comparison of the results on each in terms of the progress made from stage to stage by the group. Such a formative evaluation is both relevant and effective serving at least two important functions. To the learner it is a rewarding experience showing him his position in the process of learning. As against summative evaluation which tests progress at the close of a course of study, formative evaluation tests learners at every step which is an effective learning experience too. From the investigator's point of view, criterion-referenced tests behave as an index referring him to points that need better instruction. Such a knowledge helps the teacher or investigator to effect modifications on the basis of learners' performance in criterion tests.

For the purpose of formative evaluation, the scores obtained by the learners on those terminal behaviours (ref. section 4.1.1.b) which are common in the pretest and posttest

and the unit test have been compared. The comprehensive test included items related to the three units namely Unit 1 Conversational English, Unit 2 Reading and Unit 3 Writing. For a comparison then, the total scores on the comprehensive test has to be seen as distributed among the said unit areas.

Table 5.3 : Showing comparison of Unit test scores with Pre and Post Test Scores

	Mean	SD	t
Pre test	33.93	11.40	12.97
Unit 1	61.83	10.84	
Post test	76.50	9.72	
Pre test	31.23	7.67	19.84
Unit 2	56.43	8.07	
Post test	66.17	9.19	
Pre test	35.67	12.02	15.25
Unit 3	63.00	10.69	
Post test	70.53	10.20	

All the 't' values are significant at 0.01 level.

The significance of the t-values at the 0.01 level speaks of a potential formative development of the students from the beginning to the end through each unit. The mean performance of the group on the pretest was 33.93, which rose to 61.83 on the unit test. The mean difference as proved by the t value

12.97 was significant at 0.01 level. At the posttest the mean rose to 76.50. The t value when the unit test score was compared with the posttest score was statistically significant at 0.01 level.

A gradual ascension in the quality of performance from the pretest to the unit test and the unit test to posttest has been statistically established in the case of all the language skills dealt with in the course.

Hypothesis 2 : There is no significant difference in the reactions expressed by the adult learners towards the programme.

Students' reactions obtained on a four-point scale were subject to chi square computation. The significant chi square values deny the equal probability theory in the present case. Thus the null hypothesis that there is no significant difference in the reactions expressed by the adult learners towards the course stands rejected. It is clearly evident that the reactions favour the course and the techniques adopted by the course.

Except the establishment of the positive reactions of adult learners towards the course, the chi square values do not offer much clarity in terms of the particular techniques which appealed most or least to the group. So, an itemwise analysis of reactions was attempted, the result of which are given along with respective X^2 values in tables 4, 5, 6, 7, 8 and 9.

Table 5.4 : Showing Itemwise analysis of reactions of adults on Listening to Lectures

	HVM	HSE	DHM	DHA	χ^2
1. Teacher using the lecture method	56.7	26.7	13.3	3.3	11.34
2. Teacher introducing the topic through lecture	50.0	36.7	13.3	0	17.46
3. Teacher lecturing before you go to the written word	50.0	33.3	16.7	0	16.66
4. Teacher allowing interaction during lecture	70.0	20.0	10.0	0	34.80
5. Teacher using visual aids while lecturing	67.0	23.3	6.7	3.3	32.12
Mean percentage ..	59.0	28.0	12.0	1.0	22.40

The table clearly shows the favourable attitude that was evinced by the adults towards the traditional lecture-technique. Eighty seven percent of the respondents found the lecture method to introduce the topic, useful while only thirteen percent responded negatively. Only 1% of the learners found the lecture method absolutely unbeneficial.

Table 5.5 : Showing Itemwise analysis of reactions of adults on Reading the Written Material

	HVM	HSE	DHM	DHA	\bar{x}^2
1. Reading the written material arranged in small steps	50.0	43.3	6.7	0	23.06
2. Reading the material at your own speed	47.0	40.0	13.3	0	17.46
3. Writing the answer at each step	67.0	23.3	6.7	3.3	30.52
4. Knowing the right answer and comparing it with your own	53.0	30.0	10.0	6.7	23.06
5. Teacher's help whenever needed while reading the material	83.0	16.7	0	0	56.66
Mean percentage ..	60.0	31.0	7.0	0	26.60

The table while highlighting the general favourable attitude towards the auto-instructional method brings one particular point into focus. The fifth response "teacher's help whenever needed while reading the material" has been favourably reacted to by the whole group.

Table 5.6 : Showing Itemwise analysis of reactions of adults on Discussion

	HVM	HSE	DHM	DHA	X ²
1. Clarifying doubts	77.0	20.0	3.3	0	45.46
2. Discussion about the main points	77.0	20.0	3.3	0	41.19
3. Getting to know others' views	67.0	20.0	13.3	0	50.26
4. Reacting to others' views	53.0	23.3	20.0	3.3	18.26
5. Studying through the combined use of lecture, written word and discussion	50.0	40.0	6.7	3.3	19.86
Mean percentage ..	65.0	25.0	9.0	1.0	31.97

As table 5.6 shows discussion used as a technique in the instructional process has been very popular with the adults, with just one percent denying its utility.

Table 5.7 : Showing Itemwise analysis of reactions of adults on Practical Work

	HVM	HSE	DHM	DHA	X ²
1. Practical work after discussion	77.0	20.0	3.3	0	45.46
2. Playing roles during the course	53.0	16.7	26.7	3.3	16.12
3. Following model dialogues and constructing similar ones	50.0	23.3	16.7	10.0	9.19*
4. Listening to taped dialogues	47.0	13.0	30.0	10.0	10.26*
5. Having printed matter to help with practical work	60.0	36.7	3.3	0	27.86
Mean percentage ..	57.0	22.0	16.0	5.0	17.94

* Significant at 0.05 level. All the other X² values are significant at 0.01 level.

Although table 5.7 proves the effectiveness of practical work beyond doubt, in comparison with the other techniques used in the course, it may be noticed that the technique under discussion had a slightly greater percentage of responses which were unfavourably marked by the learners. Seventy nine percent of the learners agreed to the usefulness of practical work as a tool while only a small percentage (5%) found practical work sessions to have been ineffective.

Table 5.8 : Showing Itemwise analysis of reactions of adults on Unit Tests

	HVM	HSE	DHM	DHA	χ^2
1. Test at the end of each unit	77.0	23.0	0	0	51.60
2. Unit test as part of the learning sequence	70.0	23.3	6.7	0	34.26
Mean percentage	73.5	23.3	3.3	0	42.06

The value of criterion-referenced tests at the end of each of the three units has been favourably reached to. Among the three percent which did not find the tests very helpful as a learning sequence, not a single person completely denied the benefit of tests.

Table 5.9 : Showing Itemwise analysis of reactions of adults on Discussion of Unit Test Performance

	HVM	HSE	DHM	DHA	χ^2
1. Discussion on students' performance at the end of each test	70.0	20.0	10.0	0	39.60
2. Clarifying difficult points	70.0	30.0	0	0	39.60
3. Discussion of unit test performance as part of the learning sequence	67.0	20.0	10.0	3.3	31.06
Mean percentage	69.0	23.0	7.0	1.0	35.61

The feedback sessions were found to be very effective with 92% of the students opining that the sessions were helpful as a learning sequence and a negligible one percent dismissing them as not at all helpful.

The study undertook to investigate the relationship between achievement through the present course and three student-characteristics, namely their intelligence as measured by Raven's Progressive Matrices, academic qualification and socio-economic status. Based on these three factors null hypotheses were formulated and statistically tested.

Hypothesis 3 :

- (a) There is no significant relationship between achievement of students and their intelligence.

- (b) There is no significant difference between achievement of students belonging to the higher and lower intelligence levels.

Table 5.10 : Mean, SD of and 't' values between pre and post test scores of groups of different levels of intelligence

		Mean	SD	't'
Higher Intelligence	Pretest	32.75	10.47	28.92*
	Posttest	70.92	11.21	
Lower Intelligence	Pretest	33.67	6.35	24.83*
	Posttest	71.22	7.07	

*Significant at 0.01 level

From the table 5.10 it may be seen that both the higher and lower intelligence groups gained from instruction through the course significantly. A comparison of the gains between the groups however showed no significant difference. Both the groups gained equally and as such intelligence taken as an intervening variable did not significantly affect the learning process. The course then can be said to have catered to both the higher and lower level intelligence groups. Thus the null hypothesis stands accepted.

Hypothesis 4 :

- (a) There is no significant relationship between achievement of students and their previous academic qualification.
- (b) There is no significant difference between achievement of graduates and undergraduates.

Table 5.11 : Mean, SD of and 't' values between pre and post test scores of graduates and undergraduates

		Mean	SD	't'
Graduates	Pretest	35.46	8.34	19.79*
	Posttest	74.31	8.30	
Undergraduates	Pretest	31.65	7.70	34.06*
	Posttest	68.65	8.50	

*Significant at 0.01 level

Table 5.11 records a significant gain in the posttest performance of both graduates and undergraduates as compared with their pretest performance. However the mean difference between the two groups on the posttest showed a considerable difference in that a judgement as to which group had gained more necessitated statistical inference. The table that follows shows the difference computed between pretests and posttests separately.

Table 5.12 : Mean, SD and 't' values of pre and post tests

		Mean	SD	't'
PRETEST	Graduates	35.46	8.12	1.27**
	Undergraduates	31.65	7.63	
POSTTEST	Graduates	74.31	8.31	1.84*
	Undergraduates	68.65	7.17	

*Significant at 0.05 level

**Not Significant

Table 5.12 presents a picture where the entry behaviour of both the graduates and undergraduates were on the same level. The difference in their performance as the 't' value shows is not significant. On the other hand, the posttest scores show a statistically significant difference in the posttest performance of the groups; where the graduates have gained more than the undergraduates. The 't' value is significant at 0.05 level.

The hypotheses in question thus stand rejected because of the significant difference between the groups in the posttest performance where the graduates have gained more than the undergraduates, although both have significantly gained through the present course.

Hypothesis 5 :

- (a) There is no significant relationship between achievement of students and their socio-economic status.
- (b) There is no significant difference between the achievement of students belonging to the grade I and grade II levels of socio-economic status.

Table 5.13 : Mean, SD of and 't' values between pre and post test scores of groups belonging to the first and second grades on the socio-economic status scale

		Mean	SD	't'
SES grade I	Pretest	34.65	8.80	38.72*
	Posttest	74.18	7.90	
SES Grade II	Pretest	31.54	8.89	18.46*
	Posttest	67.08	8.56	

*Significant at 0.01 level

Table 5.13 presents a picture where both the groups, divided according to their socio-economic status level have gained significantly in the posttest. The 't' values are significant at 0.01 level. A comparison between the gains in the means, however calls for more computations. It may be seen from table 5.13 that while both the groups have

gained significantly by learning through the present course, the adults who are socio-economically placed higher recorded more gain in the mean than those who are placed on a lower level. The difference then had to be seen in terms of their entry behaviour and then compared with the terminal scores.

Table 5.14 : Mean, SD and 't' values of the pre and post tests of the higher and lower SES groups

		Mean	SD	't'
Pretest	Grade I	34.65	8.27	1.029**
	Grade II	31.54	7.45	
Posttest	Grade I	74.18	7.06	2.380*
	Grade II	67.08	8.66	

*Significant at 0.05 level

**Not Significant

Table 5.14 places both the groups on the same level at the point of entry. The pretest performances of the two groups do not show any statistically significant difference. But the terminal behaviour places them at different levels where the group which is socio-economically superior has gained more through the course, while the lower socio-economic group gained significantly less in comparison. Thus the

hypothesis related to the socio-economic status levels and achievement stands rejected.

5.4 FINDINGS

Based on the analysis of the data obtained from the experiment which was conducted to validate the course constructed as the result of the present study, the following are the findings:

- (1) The mean difference between the pretest and posttest scores of the experimental group has been found to be significant. The course has proved itself to be effective in terms of learners' achievement in the comprehensive test and each of the three criterion-referenced unit tests.
- (2) The course in general and all the particular techniques used therein have been found to be effective in terms of learners' reactions.
- (3) The third finding is based on the intelligence level of the individual adult learner and its relationship with achievement through the course. Intelligence, considered as an intervening variable did not significantly affect achievement. The highly intelligent as well as the less intelligent adults gained significantly from the course.
- (4) Both the graduates and undergraduates gained significantly from the course. A comparison between their gains revea-

led that graduates gained significantly more than the undergraduates.

- (5) Socio-economic status taken and treated as an intervening variable revealed that the gains were more on the part of the adults who belonged to the grade I socio-economic status level. Both the groups, grade I and grade II gained significantly, but the gains were relatively more on the part of grade I SES group.

5.5 DISCUSSION OF THE RESULTS

An overall consideration of the study and a quantitative analysis of the data obtained from the experiment have already been presented.

The progress made by the group that underwent the experimental treatment has been found significant in terms of their achievement in the unit and comprehensive tests and their reaction to the set of techniques utilised in developing language skills through the present course. While the means and percentiles show a definite trend towards a high level of achievement, mastery level where a hundred percent of the learners score hundred percent marks has not been possible. Carroll (1963) has suggested that one of the most important variables in the learning process is the total amount of time spent actively in the learning situation. It is probable that the same course given in a lingering manner for a longer duration would yield better results in terms of achievement.

Table 5.3 consists of a comparison made between pretest scores and unit test scores and unit test scores and posttest scores. The significance in 't' values at 0.01 level speaks of a potential formative development of the students from the beginning to the end. This sort of a periodical assessment offers a clear-cut picture of the trend that the development of the students pursued on the various skills. A comparison between the pretest and each of the unit tests brings to attention the fact that the gains have been significant. In the case of the first unit the mean difference may be seen as 27.90 (33.93 - 61.83). The second unit's comparison with the pretest shows a mean gain of 25.20 (31.23 - 56.43). The third unit again has a difference of 27.33 points (35.67 - 63.00) to show when a comparison is made between pretest and unit test means. As against these mean differences if a comparison is made between the unit test performance and the post test performance the differences being:

(Unit 1 -- Posttest) 14.67

(Unit 2 -- Posttest) 9.74

(Unit 3 -- Posttest) 7.53

it can be seen that the units in themselves have been quite effective in achieving the set objectives as far as skills are concerned. It may be repeated here that the skill-wise division into units was followed only for the sake of convenience; and the course in reality is an integrated approach towards better listening, speaking, reading and writing of English.

The next point for discussion concerns the reaction of the adult learners towards the course in general and the sequence of techniques used in particular. As may be seen from tables 4, 5, 6, 7, 8, 9 and 10 the whole set of techniques used in the instructional process, namely lecture PLM, tape recorder, discussion, practical work, feedback sessions and support materials were all found to be helpful to a great extent in achieving educational objectives. The sequence of the techniques following one after another was found to have been greatly appreciated. It may be pointed out however that when ever the teacher intervened, while reading the PLM or during the discussion or during the feedback sessions, the reactions have been highly favourable. Teacher's help whenever needed while reading the material has been favourably reacted to by the whole group. Self-paced instructional material while being a highly successful technique to bring about effective learning in the learners, proves insufficient in the absence of a human teacher. Reacting and being reacted to and clarifications as and when required perhaps are best possible through the human medium than through a machine or just by reacting with printed matter. Ever since the mid-1960s there has been a shift from pure auto-instructional material to a systems approach to education which accomodates various visual, tactile and auditory stimuli, practical work, group work, multi-media presentation, interaction with a live teacher and other students.

Apart from the written reactions as obtained from the Reaction scale, casual interviews with individual learners and small groups and the researcher's own observations revealed further the adults' reactions to the course. They are being listed below:

- (1) Lecture, although considered a 'traditional technique' generally in the educational circles today, as a means of introducing topics and demonstrating certain concepts, was found to have considerable value.
- (2) Mechanical or electrical gadgets however effective they may be, are yet to be widely used in our country for the general public to realise its efficacy in foreign language learning. A considerable amount of motivation was required to orient the adults regarding the use of tape-recorder during the reading of the PLM. Once, they got used to the idea of listening to model dialogues, there were learners who evinced desire to listen to the dialogues over and over again.
- (3) Tape-recorder was greatly helpful in developing the speech skills of the adults. Listening to model dialogues and comparing with their own pronunciations and particularly with patterns of intoning speech created an awareness among adults as to the need for a degree of accuracy in the pronunciation of words and intonation of sentences. Visuals in the form of film-strips could have greatly increased the efficacy of the course. In the absence of

films, cartoon-strips, pictures and posters were used for oral and written compositions.

- (4) Discussion in the group where interaction was possible between the teacher and the group and members within the group debating issues which are of contemporary relevance proved effective in the development of speech skills. Some among the adults who naturally were disinclined to speak in the group, made an attempt to answer queries specifically pointed at them.
- (5) Practical work in small groups perhaps was the best appreciated technique. The fact that by this stage everyone in the group had listened to the lecture, listened to the taped dialogues, worked through the PLM, taken part in the discussion (some of them passively ofcourse) and worked through the support material and thus had acquired basic knowledge contributed to the success of practical work. Each group selected a leader who monitored the practical work session when the work involved practice in group. Even those who did not take active part during 'Discussion', felt free in a small group. They were strictly instructed to keep all their speech activities restricted to the use of English only. Although the adults did not strictly adhere to this instruction, sincere and all out attempts were made by the majority of learners to speak in English.

(6) Feedback sessions were found to have been very useful too, with some staying back even after the session getting mistakes corrected and issues clarified.

The finding regarding the relationship between the intelligence level of the adult learner and the level of achievement is in line with the general tendency in the linguistic circles to treat language as a skill. A skill can be learnt and practised to perfection provided the time, exposure and consistency and deliberatedness with which the effort is sustained. The level of intelligence does not play a particularly significant role in the process.

Language acquisition is forming a habit and does not require a high level of intelligence. Carroll (1962) has empirically established that intelligence, motivation and general scholastic ability are independent of language-aptitude. According to him, any individual able to speak his native language, if given time, quality of instruction and motivation, can attain competence in a foreign language.

The last two findings pertaining to the academic qualification and the socio-economic status levels of the adults are absolutely logical. Graduates who have had more exposure to English at the college or university level, in terms of the time-duration as well as the quality of the language, naturally gained more than the undergraduates who were relatively at a disadvantage; some of them who were technicians and college-drop-outs in small business etc.

hardly had any exposure to the English language and demand for its use on them was comparatively negligible.

The finding that the adults who belonged to the higher socio-economic level gained more may be seen again as a result of greater opportunities that they have for exposure to English. Parents who send their children to English medium schools, house-wives who throw parties and entertain guests who speak English, office-goers who constantly get in touch with people who speak English and written communication in English, by reason of their familiarity with the language and the greater motivation with which they approach the course like the present one - all these factors contribute to the degree of success. Their inner compulsion to excel as against those who belong to the lower socio-economic level may be another factor. The sheer fact that a person is in a position to afford papers, journals and books which cost a great deal of money these days, in itself is an advantage that the socio-economic status level provides an adult with and deprives another of.

Loban (1967) using data collected on students in grade 10, 11 and 12 reported that high socio-economic groups developed language skills earlier with a greater degree of competence than the lower.

Positive relationship between achievement and SES has been reported by researchers like Coleman, (1940) Ames (1943),

Gough (1946), Holingshed (1949), Campbell (1952), Coster (1959), Knief and Stround (1959), Warriar (1968), Lynn (1973), Douglas (1964), Silver (1975), Wiseman (1964) and Ramaji Rao (1977).*

Thus the experiment statistically proved the effectiveness of the programme on all the subjects irrespective of their intelligence levels, prior academic qualification and socio-economic status level.

* Studies quoted by Raj, H. and Krishnan, K., Journal of the Institute of Educational Research, Vol.4, No.3, Sept.1980, P.2.

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