# SOME OBSERVATIONS ON STUDY TIME OF A SAMPLE OF OPEN/DISTANCE LEARNERS IN SRI LANKA

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## Abstract

*Study time is conceptualized as a measure of total time taken by a student/s for studying a given unit of content material within a study program. This measure covers time spent for all the different activities such as reading, listening, discussions, writing, answering questions, doing practical work, field work revisions and so on. Researchers have examined study time from different angles; (Lockwood 1997; Rekkedal 1995;Chambers 1994; White et al 1982). However, methods and criteria for estimating study time needs careful study because the student's time for studying varies from person to person depending on personal factors as well as on factors related to the content material.*

*The present study reports the findings of a preliminary study of the time spent on studying simple text, by students of the Open University at two different levels of study.*

*The results indicate individual differences in the time spent on reading to make sense of the content. A low but positive correlation is evident between the age of students and their study time. The characteristic features of the two groups of students and the study material used for the two groups are also observed. This preliminary study calls for further research into methods of determining study time of students learning from self instructional material, if study time is to be used as an index of work load or credit rating.*

# INTRODUCTION

An investigation into study time with special reference to open distance learning was considered important mainly because the weight assigned to a given course or courses leading to a final award is based on study time. This weight is often referred to as *workload* or *credit rating*.

Credit rating in turn plays a critical role in deciding academic matters in relation to the management of courses. As credit rating is a measure of students' *workload* (extent of learning activities), it decides the maximum or minimum number of courses that a student is allowed to register for during an academic year. The credit rating indicates to the student the amount of work or study time needed to complete the course. This awareness is important for the adult distance learner and more so to the employed learner who has to plan and manage available time for studies, household work and employment. In addition the requirement for the final award is also determined in terms of credit ratings of courses.

# BACKGROUND

Study time has become the subject of research/study mostly in the field of distance education. Lawless (2000) has investigated workload, a concept which was considered the same as the time taken to study course materials. The focus of this study was on learning activities in mathematics and computing. For the study five courses taught in the distance mode at the Open University United Kingdom (OUUK) were selected. It was found that the time taken to study depended on the student's approach to learning. Students who had a deep learning approach had taken more time for activities than others who had studied to pass exams. Study time was also found an important factor influencing the quality of learning.

Lockwood (1997) who briefly reviewed how study time is estimated, has questioned the validity of such measures and expressed caution about the implications of the study. The framework for estimating student workload suggested by Lockwood is included as Annexure 1.

Buddhi Weerasinghe et al. (1997) examined the credit rating assigned to courses offered at the Open University of Sri Lanka and found variation in workload based on one-credit courses in different programs of study. In this study the 'work load' estimate was based on the number of pages in study material and time spent for practical work. This count of workload was converted into *'credit rating'*. This research study too calls for further investigations into estimates of study time and credit rating.

Rekkedal (1995) has referred to workload in a study where the major focus was on assignments. Students' views regarding submission density too were examined in relation to an estimate of *'workload'*. Chambers (1994) has discussed certain ways by which workload could be estimated and further states that the amount of work a student is expected to do crucially affects their attitudes to open/distance learning.

White and Taylor (1982) carried out a comparative analysis of student achievement as a function of study time. The comparison was between students learning in a traditional system and those in a distance education system. Theoretical issues arising from different conceptions of the relationship between time and learning are also examined. These studies are indications of the importance of study time as a factor to be considered in designing self-instructional study material.

# DESIGN OF THE RESEARCH STUDY

## Definition of 'study time'

As evident from the above, study time refers to the time taken by students to learn or study whatever is assigned to them in a given program of study. In distance education, self-instructional material is provided for the students. Self-instructional material is often mostly in text form. With the introduction of more advanced technology, multimedia study programs are made available for students who can afford to use computers for their studies. Self instructional material in text form consists of not only plain text but also other features like illustrations, charts and tables, maps and diagrams. There are also activities and tests to be completed at the end of a section before proceeding to the next section. In some lesson units even audio and visual recorded material are built into the text. The time taken to attend to all these components make up study time. Moreover assignments, project work and practical work are also included in study components. When all or most of these features are built into the lesson unit, it is difficult to estimate study time of the stud.nt. Nevertheless, none of these features can be left out either. However, in any given course of study each lesson unit does not include all the above features. Individual lesson units differ from one another in their structure and textual features.

Even within plain text lesson units, significant differences may be observed as far as the depth and simplicity or complexity of content material are concerned. Therefore, the time taken to study a single lesson unit may not necessarily relate to the number of words or pages of print in it.

Study time may also depend on personal factors of the individual learners. For example the student's reading speed, comprehension level, reading difficulties if any, study habits and even personal factors that occur at the

time of reading. Circumstantial factors and factors related to the immediate physical environment may also interfere with student learning and affect their reading time.

The concept of study time therefore includes complex factors. It should also be noted that the time taken to read and the time taken to understand or make meaning cannot be treated separately. Sometimes a student may just read at a surface level without making an effort to make meaning at the first instance of reading. Or else a student may partly understand at the first reading, and go for a second reading for complete comprehension. Under such circumstances simple reading time may not necessarily be counted as study time.

Readability of the text is sometimes related to external textual features as font size, spacing, punctuation marks, quality of print and paper. Such factors too affect students reading time and reading speed. These factors were considered in selecting the text used for the experimental situation.

## OBJECTIVES OF THE STUDY

The present investigation is the preliminary step in a detailed study of *study time* in relation to student learning from self-instructional material in open-distance teaching systems.

The objectives of the study are as follows:

1. Obtain a count of study time based on studying self instructional text material by a sample of students.

2. Observe the nature of study activities that take place during that study time.

3. Observe individual differences in time taken to study the same lesson unit during a period of time, in the same place of study.

4. Find out whether there is a relationship between study time and the age of students.

5. Identify factors that are related to, or affect study time of students learning from self-instructional material.

6. Discuss the implications of determining study time in relation to credit rating.

## Methodology

Two groups of students following two different study programs at the Open University of Sri Lanka were selected for the study. Selection was on a random basis. In both programs of study, students are grouped for tutorial classes. They are mixed groups and there are no definite criteria of selection for grouping other than a broad area basis (area of residence or work). Of these groups, one from each study program was selected by lottery method.

Both groups were from the same discipline of Education, and they were following teacher education courses at two different levels.

Table 1 below gives details of programme level and gender composition of the sample.

| Group | Level of programme | No. of students | | |
| | | Male | Female | Total |
|---|---|---|---|---|
| Group A | Certificate Level | --- | 35 | 35 |
| Group B | Post graduate Level | 11 | 23 | 34 |

Table 1 - Details of sample

# CHARACTERISTIC FEATURES OF THE TWO GROUPS

## Group-A

All students were females which is a normal feature in this particular study program. They were a relatively younger group (age range 20- 45) in the context of the general student population of the Open University. Their minimum entry qualification was passes in six subjects including language at the G.C.E. Ordinary Level Examination.

## Group B

The students are a mixed group (gender wise) as seen in Table - 1. They are all graduates and employed as teachers or in other positions in the field of education. Their age range is 26-53, thus they are older than Group A.

The two groups were examined separately. The purpose of selecting two groups was not for comparison but to make observations at two different levels of study.

## TEXTS SELECTED FOR THE STUDY

Lesson units selected for this study consist mostly of plain text without the features such as charts, diagrams, audio/visual components etc. This selection was preferred in order to give more emphasis on 'study time' related to studying plain text material.

For both groups the lesson units selected were those that they had not studied at the time of conducting the study. Nor had they discussed the relevant topics the tutorial classes or other contact sessions.

This decision was taken to ensure that the groups were reading and studying these units for the first time at the time of the experiment.

Thus the criteria of selection of material were:

- Text that the students had not studied earlier,
- Simple text without illustrations, tables and media mix etc.

The students in the sample were informed that the exercise was not a test of their reading time or reading speed, or a test of their knowledge and comprehension for the purpose of evaluation. They were requested to assist in an exercise where the text material was to be evaluated for the purpose of revision. In addition they were told about the benefits of doing this exercise for their own studies, in order to make them participate actively in this study. The students too were interested in this activity as the area of learning was new.

## PROCEDURE

The students carried out this experimental situation in a normal classroom where they regularly attended tutorial sessions. However, they were not informed in advance about the experimental situation.

After studying the given text , they were asked to write down the answers to the questions given in the text and make statements about the objectives they have achieved. They were free to take sufficient time for reading and answering questions. The purpose of getting responses to text questions was to examine whether they studied the material. The time spent for writing answers was not counted as study time.

Before the students started the exercise, they were given instructions to:

- Read the lesson with the objective of studying the contents.

- Note down the time taken to complete reading and studying at the first attempt.

- Note down difficult words, phrases and sentences or even chunks, which they could not understand.

- Go through the objectives and note how many objectives they could achieve.

- While reading note down any pauses

  - for the purpose of understanding the vocabulary of the text,

  - to cite examples,

  - to relate to other relevant material previously learned,

  - to recall facts etc.,

  - due to lack of interest, tiredness or other disruptions.

Students were asked to report the outcomes of reading after the first reading in the above manner and repeat the same after the second reading of the text. Those who wanted a third reading were allowed to do so. The survey questions given to the students, to be answered after reading the text, are attached (Annexure 2).

After every reading the students were given a break if they wanted or else they could continue as they wished. This option was given considering the differences among students in their study patterns.

The comments they had written in response to the questions were further discussed with them for clarification, and noted by the researcher.

# DATA ANALYSIS

The mean and the standard deviation of the time taken by the respectiv students to read and understand the given material were obtained Correlation between age and study time of the respective students within th groups was calculated by the *Pearsons' r* method.

The responses of students in written form and the summary of discussion with the students are also discussed and reported.

# PRESENTATION OF DATA
## Age and Reading Time of Students in the Sample

**Age:**

|  | Range | Mean | Mode | Standard Deviation |
|---|---|---|---|---|
| **Group A** | 20-45 | 29.1 | 22.5 | 06.90 |
| **Group B** | 26-53 | 35.0 | 33.0 | 08.11 |

**Table 2 - Age in years of students in the sample**

**Study Time:**

|  | Range | Mean | Mode | Standard Deviation |
|---|---|---|---|---|
| **Group A** | 08-16 | 11.5 | 10.0 | 02.27 |
| **Group B** | 20-35 | 27.5 | 30.1 | 03.61 |

**Table 3 - Study time (in minutes - approximately)-First reading**

|          | Range | Mean | Mode | Standard Deviation |
|----------|-------|------|------|--------------------|
| Group A  | 08-18 | 11.6 | 10.0 | 02.29              |
| Group B  | 20-38 | 27.7 | 30.2 | 03.64              |

**Table 4 - Study time (in minutes - approximately)-Second reading**

|          | Range  | Mean    | Mode    | Standard Deviation |
|----------|--------|---------|---------|--------------------|
| Group A  | ------- | ------- | ------- | ------             |
| Group B  | 20-32  | 27.2    | 30.0    | 03.31              |

**Table 5 - Study time (in minutes - approximately)-Third reading**

|          | Range  | Mean |
|----------|--------|------|
| Group A  | 16-35  | 23.3 |
| Group B  | 60-105 | 82.5 |

**Table 6 - Study time (in minutes - approximately)-Total time spent for reading comprehension**

The two groups were not compared on the basis of study time because of the significant differences between the two lesson units and the respective levels of study. (See Table - 4. Comparison of the lesson units).

**Correlation** between students age and study time was calculated by applying the *Pearson's r* method

Correlation for group A = **+0.19.**   and

for group B = **+0.53.**

# STUDENT CHARACTERISTICS

As mentioned earlier students in group A were relatively younger in th context of the student population of the Open University where the olde limit is around 60 years. Only a few of them were employed. It wa observed during the discussions that these students were very keen o learning new material. They were, on average, a group less disturbed b personal / external factors which interfered in their studies. Most of the were single and unemployed. Those employed were pre-school teachers.

In group B, students were all employed full time and in spite of their intere in, and motivation for learning, their approach was more examinatio oriented.

Almost all in group B achieved the stated objectives in the cognitiv domain. However they had difficulty with more advanced cognitive skill such as application, synthesis and evaluation.

| Characteristic Features | Lesson Unit ... ( Group A) | Lesson Unit B. ( Group B) |
|---|---|---|
| New / difficult words including concept words as identified by students | Range = 02 - 04<br>Average = 03 | Range = 04 - 09<br>Average = 05 |
| Objectives stated in the text | 03 Objectives | 07 Objectives |
| Questions to be answered while reading | None | Two |
| Other | Two exercises to be done after completion of studying | One experimental activity and one exercise/question to be done later |

Table 7 - Characteristic Features of the Two Lesson Units

| Observation / Comments | First reading | | Second reading | | Third reading | |
|---|---|---|---|---|---|---|
| | Group A | Group B | Group A | Group B | Group A | Group B |
| Words read repeatedly to find meaning (frequency) | Range 1 - 2 M = 1.5 | Range 1 - 6 M = 4 | Range 1 M = 1 | Range 1-5 M = 4 | None 100% | Yes 82 % |
| Sentences / sections read repeatedly to find meaning (frequency) | Range 1-2 M = 1.5 | Range 1 - 8 M = 3 | Range 1-2 M = 1.5 | Range 1-6 M = 2.5 | None 100% | Yes 42 % |
| Paused to think of examples (frequency) | Range 2 - 3 M = 2.5 | Range 3 - 5 M = 4 | Range 1 - 2 M = 1.5 | Range 2 - 5 M = 3 | Yes 42 % | Yes 32 % |
| Attempted clarifying problem points | Range 0 - 1 | Range 3 - 4 | Range ------ | Range 2-3 | None 100% | Yes 36 % |
| Paused to think of previous Learning (frequency) | 100 % | 92 % | 100 % | 40 % | None 100% | Yes 30 % |
| Number of objectives (given in the lesson) achieved | All | Range 2 - 3 | All | Range 1 -2 | | |
| Need further reading or tutor help to understand | No | Yes | No | Yes | No | Yes |

**Table 8 - Students' comments / observations about the reading activity**

## Observations on above data

1. The time taken to study the same lesson, given the same surrounding conditions, by students following the same course, varies very much from person to person.

2. The reason for this variation could be due to one or more of the following factors, which need to be further investigated.

- Student's personal characteristics like reading speed, motivation to read, problems in continued concentration and attention on the reading material, mental strain, etc. would have interacted with the length of the lesson to bring about variations in study time.
- Difficulty of the content material as experienced by students. (new concepts etc.)
- Student's approach to study
- Student's study patterns

The difficulties expressed by the students imply that prior learning at graduate level has had not much effect on learning new material with respect to  many of the students, some of them are greatly dependent on tutors for help in studying textual material.  Such students as mentioned above need more time than normal students to complete a given course.

- Study time to determine credit rating of a course of study as used currently may not do justice to the entire student body taken as a whole.

- Students' age indicates a low correlation with study time:

  For group A,  Pearsons' $r = + 0.19$, a low but positive correlation. For group B,  Pearsons' $r = +0.50$, indicating a positive correlation higher than that of group A.

  When looking at raw figures a trend towards older students taking more  time than younger students in the group was frequently observable. It would be both interesting and useful to make further investigations on the relationship between student age and study time.

- If self learning students are compelled to read the same lesson many times for a complete understanding of the content, such lesson material needs to be tested and reviewed for necessary remedial measures.

These observations direct our attention towards further study on the subject of study time of open/ distance learners. How do we ascertain study time, what benefits can students gain from an estimate of study time are questions to be answered. As rightly pointed out by Lockwood (1997) how far a count of study time as obtained by *'rule of thumb'* measures help students is an issue to be sorted out.

## LIMITATIONS OF THE STUDY

The sample was not considered large enough for the purpose of generalization.

The selected study material was limited to text reading material. These texts did not have any special features as illustrations, diagrams, tables, charts etc. interspersed within the text. Such features would have added complexity to the material. These features need to be treated as variables that interfere with the time spent on study by way of reading comprehension.

The two groups were not compared on the basis of study time because of the significant differences between the two lesson units and the respective levels of study.

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# ANNEX 1

## A Framework Within Which To Estimate Student Workload

| Textual material | Method of calculation |
|---|---|
| Study guide, Set books, Articles, Extracts and Other textual materials | Simple 'rule of thumb' based on: 'easy' 100 words per minute 'moderate' 70 words per minute 'difficult' 40 words per minute |
| **Activities in texts** Self-assessment questions, Exercises, In-text questions, Experiments, Reflection & practice and Other activities | Estimate of study time during which the majority (three quarters to two thirds) of students could complete it satisfactorily. |
| **Non text and audio visual media** Photos, Maps, Charts, Diagrams and Other non text media, Audio and video tape, CD-ROMs | Depending on the purpose of Studying the image-estimate the likely study time |
| **Face to face** Tutorial(s), Field trips, Day schools, Residential schools and Other face to face sessions | Estimated study time- before, during and after the sessions |
| **Electronic media** Computer Mediated Communication, Email, Computer Based Training, Computer Assisted Learning, and Other electronic media | Estimates of essential Online time |
| **Assessment material** Tutor Marked Assignments, Computer Marked Assignment, Project work, Examination(s) and Other assessment activities | Estimates of time associated with these tasks |

**From Lockwood (1997)**

# Annexure 2

## Survey of study time

### Part 1

1. Name of student
2. Age
3. Study program
4. Time spent for first reading in minutes.
5. Nature of problems during reading for the first time
   - 5.1 no. of difficult words
   - 5.2 no. of long sentences
   - 5.3 sections where meaning is not clear
6. Need to go back on reading to find meaning
7. How many objectives achieved after first reading?
8. What are the objectives that could not be achieved?

### Part 2

1. Time spent for second reading in minutes
2. Changes after second reading
   - 2.1 could understand words not understood earlier
   - 2.2 could understand sentences not understood earlier
   - 2.3 could sort out problems not understood earlier
3. Do you feel that you need to read again for a complete and satisfactory understanding of the lesson