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University of San Carlos of Guatemala, 1963

An IIME Staff Report
1964

IIME

INSTITUTO DE INVESTIGACIONES Y MEJORAMIENTO EDUCATIVO
Interuniversity Program of the University of San Carlos of Guatemala and Michigan State University



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A Case Study

Academic Progress Of University Students

University of San Carlos of Guatemala, 1963

An IIME Staff Report

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Published by Michigan State University and

IIME

**CIUDAD UNIVERSITARIA
GUATEMALA, C.A.**

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The data employed in this report were derived from the student census that the University of San Carlos of Guatemala conducted during January and February, 1963. The Office of the Registrar of the University planned and managed this "Second Student Census." Except as may be noted in the text of this report, the census was complete for all students enrolled for 1963.

The Office of the Registrar has published two documents containing census data. These constitute the primary reference for this report, in which they are referred to as "Second Student Census." The documents are:

1. Universidad de San Carlos de Guatemala, *Segundo Censo Estudiantil Universitario Enero de 1963* (Guatemala: Oficina de Registro, 1963); mimeograph, 201 pp.
2. Universidad de San Carlos de Guatemala, *Boletín Estadístico Universitario 1963* (Guatemala: Oficina de Registro, 1963); mimeograph, 84 pp.

Both publications are available at the Office of the Registrar, Lic. Felipe Mendizábal y Mendizábal, Registrar, Ciudad Universitaria, Universidad de San Carlos de Guatemala, Guatemala, C.A.

A census of this type is extremely useful to a research program focused upon educational improvement. The Institute therefore is pleased to acknowledge the effort and the effectiveness of Lic. Mendizábal and the Office of the Registrar in the conduct of the census. IIME is gratified also that it was able to support the census with financial assistance and to make its machine facilities available for tabulation of data.

On the basis of the two census publications, and via further use of punched cards containing census data, IIME is performing a series of analyses of the student population of the University. Part of the Institute's studies of higher education in Central America, these analyses are the basis of the present report and of others to be released.

CONTENTS

INTRODUCTION	ix
SUMMARY OF THE REPORT	1
The "Average" Re-enrolled Student	1
UNIVERSITY ENROLLMENT: 1963	4
Enrollment by Campus and Faculty	5
Enrollment by <i>Carrera</i>	9
Career Choices	10
YEARS OF STUDY AND ACADEMIC PROGRESS	16
Years Elapsed Since First Enrollment	18
<i>Carrera</i> Requirements: Years of Study	21
<i>Carrera</i> Requirements: Number of Courses	24
Course Completions	26
Years of Course Work Completed	27
Years of Study and Academic Progress: Summary	31
THE RATE OF ACADEMIC PROGRESS	42
Measures of Rate	42
The "Completion Average"	42
The "Index of Academic Achievement"	42
Computations Made	43
Measures of Rate: Usefulness	43
Results of Analysis	45
Mean Rates per Student	45
Distribution of 5,036 Re-enrolled Students	46
Successful Full-time Students	47
Scores for <i>Carreras</i>	47
Scores for <i>Pasantes</i> and Other Groups	55
SUMMARY AND CONCLUSION	58

LIST OF TABLES

A.	Summary of Academic Requirements and Academic Progress in Each <i>Carrera</i> , Faculty and Campus	2
1.	Summary of Enrollment—Number of Students at Each Campus	5
2.	Summary of Enrollment—Number of Students in Each Faculty	6
3.	Summary of Enrollment—Percentage by Enrollment Category at Each Campus	6
4.	Summary of Enrollment—Percentage by Enrollment Category within Each Faculty	7
5.	Summary of Enrollment—Percentage: Distribution by Campus of Each Enrollment Category	8
6.	Summary of Enrollment—Percentage: Distribution by Faculty of Each Enrollment Category	8
7.	<i>Carreras</i> Distributed by Numbers of Students Enrolled	10
8.	Number of Students in Each <i>Carrera</i>	11
9.	Percentage by Enrollment Category in Each <i>carrera</i>	13
10.	Percentage: Distribution by <i>Carrera</i> of Each Enrollment Category	15
11.	Academic Years Required by <i>Carreras</i>	17
12.	Average Years Elapsed since First Enrollment, by Faculty and Campus	19
13.	Students Re-enrolled in Each <i>Carrera</i> Distributed by Years Elapsed since First Enrollment	22
14.	Re-enrolled Students Distributed by Length of <i>Carrera</i>	24
15.	Courses Required and Completed by <i>Carrera</i>	25
16.	Years of Study Required and Completed by <i>Carrera</i>	31
17.	Number of Students Re-enrolled in Each <i>Carrera</i> : Distribution by Academic Level of Study	33
18.	Students Re-enrolled in Each <i>Carrera</i> : Percentage: Distribution by Academic Level of Study	35
19.	Percentage: Distribution by <i>Carrera</i> of Re-enrolled Students at Each Academic Level of Study	38
20.	Year of First Enrollment of Re-enrolled Students at the First-year Level of Each <i>Carrera</i>	40
21.	Re-enrolled Students Distributed by Completion Average: Increments of Ten Per Cent	46
22.	Average Rates of Academic Progress of Students Re-enrolled in Each <i>Carrera</i>	48

23. Average Rates of Academic Progress of Students Re-enrolled in <i>Carreras</i> of Varying Length	50
24. <i>Carreras</i> in Rank Order by the Average Rates of Academic Progress of Students Re-enrolled	52
25. Categories of Re-enrolled Students Distributed by Completion Average: Increments of Ten Per Cent	56
26. Categories of Re-enrolled Students Distributed by Faculty and Campus	57

INTRODUCTION

The immediate subject under consideration in this report is the academic progress of students at the University of San Carlos of Guatemala. The deeper purpose, however, is to suggest a frame of reference that will help to gain increased knowledge and understanding of the academic progress of students enrolled in the several institutions of higher education in Central America. The research staff of the Institute regards this report as a case study. The specific data are drawn from the student population of a single university that shares—in varying degree—a number of characteristics with the region's other national universities; hence the study of the specific case is expected and intended to facilitate institutional planning at all the universities in Central America.

Measures of students' academic progress can be useful in at least two aspects of university planning; they provide a factual basis for determining institutional policy governing the retention of students, and they provide a factual basis for evaluating a university's ability to produce well-educated graduates in each field of vital national concern.

It seems to me, from personal experience in the study of Central American universities and as Registrar of the University of Costa Rica, that the novel analytic method being tested in this case study is a very thought-provoking approach, particularly because—although information is still insufficient for firm conclusions—it is likely that situations quite similar to the one described here will be found in each national university in Central America.

The factual basis for this case study is derived from data obtained in a student census conducted by the University of San Carlos in 1963. Basically, therefore, the source of most of the facts reported is the testimony of the more than six thousand students who enrolled in the University of San Carlos for the academic year 1963. Particular attention is focused upon the more than five thousand students who *re-enrolled* in 1963. Since they had attended the University previously, each of these students could furnish information regarding his prior history of academic per-

formance at the University. This report is based upon 5,036 such histories of academic progress.

Census data were examined in order to obtain answers to the following questions:

1. For how many years prior to 1963 had the re-enrolled students been in attendance at the University? In what years had they begun their University studies?
2. In what degree programs (*carreras*) were they enrolled? Since their first enrollment, how many courses had they completed in partial fulfillment of program requirements?
3. What proportion of their total course requirements had the re-enrolled students completed? How far had they progressed toward completion of their degrees?
4. Since the intent expressed by the program plan of each *carrera* is that the student should complete a specified number of courses each year (the completion of which constitutes an "academic year" of study), how many academic years of study had the re-enrolled students completed during the *calendar* years elapsed since their first enrollment?
5. Finally, at their present rates of course completions, for what total number of years would these students have to continue to re-enroll at the University in order to fulfill completely the course requirements of their degree or certificate programs?

The University may utilize these data, applying them in its consideration of significant questions of institutional—and indeed of national—policy regarding higher education. The facts regarding student progress are relevant to several such questions.

This report on student academic progress does not purport to *resolve* policy questions; however, it is intended to present—in an orderly and meaningful fashion—one part of the factual information that will permit such questions to be raised legitimately and considered seriously.

At the University of San Carlos—and at each national university in Central America—attention may be directed fruitfully to questions such as those enumerated below; the facts regarding students' academic progress are relevant to all of them.

1. The nation needs educated persons now. In view of that present need, are students investing excessive numbers of years in the pursuit of their University diplomas? If their progress is deemed to be too slow, what causes can be identified? Which of the causative factors can be modified by actions or decisions taken by the University? What agencies must act to remedy difficulties that are beyond the University's power?
2. The nation's need for university graduates may be expressed in terms of the number of professional persons required in each field of specialization. Does the University offer programs of study in the areas of greatest need? Do appropriate numbers of students enroll in each of these areas? If the present distribution of students among areas of study is not adequate, how might the University achieve better balance?
3. The University expends measurable amounts of time, effort, and money upon each student it registers. These expenses are incurred whether the student matriculates for one course or ten courses, and whether the student successfully completes all, *part* or *none* of the courses for which he enrolled. In order to be eligible to re-enroll, should students be required to meet certain standards of academic progress during each year of attendance? Is it economically feasible for a university (and the nation) to continue re-enrolling students who make *no* academic progress?
4. Every *carrera* or degree program represents a sizable investment by the University in planning, organization, and personnel expenditures. If enrollment in the program is scanty, the University may find that it is unduly expensive to continue to offer it. In order for a program to be introduced or to be continued, should the University establish a minimum limit of enrollment? That is, should the University decline to offer a program in which there are too few candidates?
5. Students' academic needs and possibilities are varied. Should the University offer abbreviated programs, non-degree programs, or non-credit programs to those students who—for various reasons—are unable or unwilling to pursue to completion any of the "standard" degree programs?

6. It is virtually impossible for any university to offer programs of high quality in every possible area of study. Hence, a university must select certain areas in which it will attempt to provide instruction. If Guatemala's national university decided to make such choices, and if it therefore declined to offer certain courses of study, how would suitable educational opportunity be offered to Guatemalan students who wish to study subjects not available at the University of San Carlos? What new needs for scholarships and for economic assistance might be anticipated? What are the implications for the plan of integration of the national universities of Central America?

The answers to these questions of policy are outside the scope of this report; it is intended, however, that the report will facilitate the deliberate and effective resolution of such questions. That is a principal purpose of the Institute's continuing program of research in the field of education in Central America.

Luis Torres Moreira
San José de Costa Rica, 1964

SUMMARY OF THE REPORT

In this report, attention is focused upon 5,036 students who re-enrolled at the University of San Carlos of Guatemala in 1963. These were all the students who had attended the University during one or more previous years and who re-enrolled for 1963 in a credit-bearing course of study (a *carrera*). Hence these were the students who could and did provide data regarding their academic progress to date: (a) in what *carrera* and in which faculty was each student enrolled? (b) in what year had he first enrolled in that program? and (c) how many courses had he completed satisfactorily in partial fulfillment of program requirements? Answers to these questions were received from each re-enrolled student as part of the Second Student Census.

The data provided by the students are described, summarized, and analyzed in this report. The report utilizes several measures of both the *amount* and the *rate* of academic progress achieved by the 5,036 students. Each measure is defined and discussed in the body of the report, and the several measures are applied to the information supplied by the 5,036 students.

The "Average" Re-enrolled Student

On the basis of analyses of data derived from the Second Student Census, one may draw the following description of a statistically "average" student who was re-enrolled in a recognized program of study at the University of San Carlos of Guatemala in 1963:

1. The average student had first enrolled in his program or *carrera* 5.30 years prior to 1963;
2. The *carrera's* plan of study contemplated that he would complete 43.34 courses during a period of 6.14 years;
3. The student—as of the start of the 1963 school year—had completed 17.14 courses, or the equivalent of 2.44 academic years;
4. In absolute terms, the student therefore had completed 39.57 per cent of the program in which he was enrolled;

TABLE A
SUMMARY OF ACADEMIC REQUIREMENTS AND ACADEMIC PROGRESS IN EACH *Carrera*, FACULTY AND CAMPUS
University of San Carlos of Guatemala, 1963

10

FACULTY AND <i>Carrera</i>	Re-enrolled Students	Years Elapsed Since First Enrollment	Requirements		Progress to Date		Rate of Progress		
			Courses	Years	Courses	Years	Completion Average	Index of Academic Projection:	
								Achieve- ment	Total Years Required
THE "AVERAGE" STUDENT	(5,036)	5.30	43.32	6.14	17.14	2.44	0.46	2.17	13.32
AGRONOMY:									
Agricultural Engineering	118	4.14	59	6	21.75	2.02	0.49	2.05	12.30
ARCHITECTURE:									
Architecture	200	3.09	48	6	15.36	1.84	0.60	1.67	10.02
ECONOMICS:									
Accounting & Auditing	751	5.41	M=30.13	M=5.95	9.72	1.94	0.36	2.79	16.60
Economics	404	5.65	30	6	10.32	2.06	0.37	2.74	16.44
Business Administration	306	5.41	31	6	9.59	1.90	0.35	2.84	17.04
LAW: Law	41	3.02	25	5	4.66	0.93	0.31	3.25	16.25
MEDICINE: Medicine	1207	5.74	39	6	15.06	2.31	0.40	2.49	14.94
CHEMISTRY & PHARMACY:									
Chemical Engineering	706	7.04	49	8	23.30	4.59	0.65	1.53	12.24
Biochemistry	293	3.37	M=35.75	M=5.68	10.54	1.68	0.50	2.00	11.36
Pharmacy	95	2.69	32	5	8.79	1.40	0.52	1.92	9.60
HUMANITIES:									
Library Science, General	90	3.08	37	6	8.02	1.30	0.42	2.37	14.22
Library Science, Advanced	108	4.20	38	6	14.18	2.26	0.54	1.86	11.16
Philosophy	298	5.68	M=40.92	M=4.60	23.21	2.42	0.43	2.35	10.81
History	2	5.50	28	3	19.00	2.00	0.36	2.75	8.25
Letters	2	9.00	40	4	12.00	1.20	0.13	7.50	30.00
Pedagogy	15	6.60	40	4	23.47	2.35	0.36	2.81	11.24
Psychology	22	4.73	50	5	26.77	2.68	0.57	1.77	8.85
Journalism	20	5.60	45	5	24.05	2.51	0.45	2.24	11.20
	72	5.53	45	5	24.83	2.60	0.47	2.13	10.65
	111	5.50	42	5	25.16	2.64	0.48	2.08	10.40
	20	6.05	38	4	22.00	2.29	0.38	2.64	10.56

TABLE A (Cont.)

FACULTY AND Carrera	Re-enrolled Students	Years Elapsed Since First Enrollment	Requirements		Progress to Date		Rate of Progress		
			Courses	Years	Courses	Years	Completion Average	Index of Academic Projection:	
								Achievement	Total Years Required
Secondary Education (Specialties)	(34)	(6.47)	(M=23.38)	(M=2.71)	(12.09)	(1.30)	(0.20)	(2.71)	(13.52)
Biology	5	4.60	16	2	6.80	0.76	0.17	6.05	12.10
Economics	3	12.00	17	2	17.00	2.00	0.17	6.00	12.00
Philosophy	3	8.33	24	3	16.67	1.87	0.22	4.46	13.38
History	7	3.14	27	3	11.43	1.14	0.36	2.75	8.25
Letters	2	16.00	26	3	20.00	2.07	0.13	7.75	23.25
Mathematics and Physics	1	4.00	16	2	10.00	1.00	0.25	4.00	8.00
Pedagogy	10	5.70	27	3	9.40	0.99	0.17	5.78	17.34
Psychology	2	4.50	25	3	16.50	1.85	0.41	2.43	7.29
Chemistry	1	12.00	15	2	15.00	2.00	0.17	6.00	12.00
ENGINEERING:									
Civil Engineering	894	4.72	58	6	17.07	1.72	0.36	2.74	16.44
DENTISTRY: Dentistry	169	5.53	48	6	22.91	2.77	0.50	1.99	11.94
VETERINARY MEDICINE:									
Veterinary Medicine	92	2.99	36	6	15.91	2.69	0.90	1.11	6.66
Sub-Total Guatemala City	4728	5.33	M=43.74	M=6.18	17.28	2.44	0.46	2.18	13.47
ECONOMICS:	73	5.97	30.14	M=6	11.73	2.35	0.39	2.55	15.30
Accounting & Auditing	63	6.21	30	6	12.62	2.52	0.41	2.46	14.76
Economics	10	4.50	31	6	6.10	1.22	0.27	3.69	22.14
LAW: Law	157	5.08	25	6	12.35	2.35	0.46	2.16	12.96
HUMANITIES:	37	3.84	M=43.05	M=4.78	22.41	2.35	0.61	1.63	7.79
Pedagogy	33	3.76	45	5	24.24	2.55	0.68	1.47	7.35
Secondary Education (Specialty: Pedagogy)	4	4.50	27	3	7.25	0.73	0.16	6.20	18.60
RURAL SOCIAL WORK:									
Rural Social Work	41	2.88	35	3	24.78	2.10	0.73	1.37	4.11
Sub-Total Quezaltenango	308	4.85	M=36.85	M=5.45	15.06	2.32	0.48	2.09	11.39
Total	5,036	5.30	M=43.32	M=6.14	17.14	2.44	0.46	2.17	13.32

Source: Computed from data in the second student census.

5. In relative terms, the student had been completing his courses at the rate of 46 per cent of an academic year's requirements during one calendar year; i.e., his "Completion Average" was 0.46;
6. Furthermore, the student had been spending his time at the rate of 2.17 years in attendance in order to complete the course requirements of a single year; i.e., his "Index of Academic Achievement" was 2.17; and
7. Finally, projecting the student's rate of academic progress into the future, and supposing that he will pursue his chosen program of study to its completion, the "average" student will spend a total of 13.32 calendar years—5.30 already invested and 8.02 yet to come—in the process of completing the courses scheduled for 6.14 years; hence,
8. Making due provision for meeting thesis and other additional degree requirements, at his present rate the "average" student will spend 14 years or more in the total process of earning his degree.

These data are shown for each *carrera* in Table A, which is a summary of the information and computations presented and developed in the text of this report.

UNIVERSITY ENROLLMENT: 1963

A total of 6,183 students enrolled in the University of San Carlos of Guatemala for the academic year 1963. The overwhelming majority ("auditors" excepted) were considered by the University to be "regular," i.e., full-time students enrolled for a full schedule of courses. Of these, 1,086 (17.56 per cent) were new students who enrolled for the first time. An additional 59 (0.95 per cent) enrolled only as "auditors" and not for credit. The remaining 5,038 students—81.48 per cent of the total—had been enrolled during one or more previous years; 5,036 re-enrolled students and their academic progress are the primary object of attention in this report.¹

¹Here and in many other cases, percentages do not total 100 due to rounding; however, totals are shown as 100 per cent. For reasons noted elsewhere, two cases were excluded from analyses; Table A and other tables therefore indicate a total of 5,038 rather than 5,036 re-enrolled students.

Included in the total were 467 *pasantes*, 7.55 per cent of the total student body. *Pasantes* correspond to the "all but thesis" student in U. S. institutions: they had previously completed all courses required by their respective degree programs and re-enrolled in 1963 in order to complete their theses and to satisfy related degree requirements. The *pasantes* are of special interest because they have demonstrated their academic proficiency; hence they constitute a control group against which to compare the academic progress of other re-enrolled students.

Enrollment by Campus and Faculty

Ten faculties of the University are located in the capital city of Guatemala; 5,806 students (93.90 per cent) enrolled in those faculties. The remaining 377 students (6.10 per cent) enrolled at the University's branch in Quezaltenango, a city in the western part of Guatemala, deemed the second city of the nation.

Tables 1-6 are summaries of the University enrollment in 1963 at each campus and in each faculty. It is noteworthy that 72.22 per cent of the students in Guatemala City enrolled in the faculties of law, civil engineering, economics, and medicine; these students comprise 67.81 per cent of the University's total enrollment. At Quezaltenango, 48.54 per cent of the students enrolled in the faculty of law. These four fields—law, civil engineering, economics, and medicine—accounted for 70.77 per cent of all students.

TABLE 1
SUMMARY OF ENROLLMENT
NUMBER OF STUDENTS AT EACH CAMPUS
University of San Carlos of Guatemala, 1963

CAMPUS	Regular Students				Auditors	Total
	New	<i>Pasantes</i>	Other Re-enrolled	Total		
Guatemala City	1,017	442	4,288	5,747	59	5,806
Quezaltenango	69	25	283	377	0	377
Total	1,086	467	4,571	6,124	59	6,183

Source: Derived from Second Student Census.

TABLE 2
SUMMARY OF ENROLLMENT
NUMBER OF STUDENTS IN EACH FACULTY
University of San Carlos of Guatemala, 1963

FACULTY	Regular Students			Total	Auditors	Total
	New	Pasantes	Other Re-enrolled			
Agronomy	62	14	104	180	1	181
Architecture	42	1	199	242	0	242
Economics	219	49	703	971	6	977
Law	234	69	1,138	1,441	7	1,448
Medicine	69	179	527	775	6	781
Chemistry & Pharmacy	40	23	270	333	10	343
Humanities	153	52	247	452	29	481
Engineering	93	40	854	987	0	987
Dentistry	75	15	154	244	0	244
Veterinary Medicine	30	0	92	122	0	122
Sub-Total Guatemala City	1,017	442	4,288	5,747	59	5,806
Economics	21	3	70	94	0	94
Law	26	12	145	183	0	183
Humanities	18	7	30	55	0	55
Rural Social Work	4	3	38	45	0	45
Sub-Total Quezaltenango	69	25	283	377	0	377
Total	1,086	467	4,571	6,124	59	6,183

Source: Derived from Second Student Census.

TABLE 3
SUMMARY OF ENROLLMENT
PERCENTAGE BY ENROLLMENT CATEGORY AT EACH CAMPUS
University of San Carlos of Guatemala, 1963

CAMPUS	Regular Students			Total	Auditors	Total
	New	Pasantes	Other Re-enrolled			
Guatemala City	17.52	7.61	73.85	98.98	1.02	100.00 (5,806)
Quezaltenango	18.30	6.63	75.07	100.00	0.00	100.00 (377)
Total	17.56 (1,086)	7.55 (467)	73.93 (4,571)	99.05 (6,124)	0.95 (59)	100.00 (6,183)

Source: Computed from data in the Second Student Census.

TABLE 4
SUMMARY OF ENROLLMENT
PERCENTAGE BY ENROLLMENT CATEGORY WITHIN EACH FACULTY
University of San Carlos of Guatemala, 1963

FACULTY	Regular Students			Total	Auditors	Total
	New	Pasantes	Other Re-enrolled			
Agronomy	34.25	7.61	57.46	99.45	0.55	100.00 (181)
Architecture	17.36	0.41	62.23	100.00	0.00	100.00 (242)
Economics	22.42	5.02	71.95	99.39	0.61	100.00 (977)
Law	16.16	4.77	78.59	99.52	0.48	100.00 (1,448)
Medicine	8.83	22.92	67.48	99.23	0.77	100.00 (781)
Chemistry & Pharmacy	11.66	6.71	78.72	97.08	2.92	100.00 (343)
Humanities	31.81	10.81	51.35	93.97	6.03	100.00 (481)
Engineering	9.42	4.05	86.52	100.00	0.00	100.00 (987)
Dentistry	30.74	6.15	63.11	100.00	0.00	100.00 (244)
Veterinary Medicine	24.59	0.00	75.41	100.00	0.00	100.00 (122)
Sub-Total Guatemala City	17.52	7.61	73.85	98.98	1.02	100.00 (5,803)
Economics	22.34	3.19	74.47	100.00	0.00	100.00 (94)
Law	14.21	6.56	79.23	100.00	0.00	100.00 (183)
Humanities	32.73	12.73	54.55	100.00	0.00	100.00 (55)
Rural Social Work	8.89	6.67	84.44	100.00	0.00	100.00 (45)
Sub-Total Quezaltenango	18.30	6.63	75.07	100.00	0.00	100.00 (377)
Total	17.56	7.55	73.93	99.05	0.95	100.00 (6,183)

Source: Computed from data in the Second Student Census.

TABLE 5
SUMMARY OF ENROLLMENT
PERCENTAGE: DISTRIBUTION BY CAMPUS OF EACH ENROLLMENT CATEGORY
University of San Carlos of Guatemala, 1963

CAMPUS	Regular Students				Auditors	Total
	New	Pasantes	Other Re-enrolled	Total		
Guatemala City	93.65	94.65	93.81	93.84	100.00	93.90
Quezaltenango	6.35	5.35	6.19	6.16	0.00	6.10
Total	100.00 (1,086)	100.00 (467)	100.00 (4,571)	100.00 (6,124)	100.00 (59)	100.00 (6,183)

Source: Computed from data in the Second Student Census.

TABLE 6
SUMMARY OF ENROLLMENT
PERCENTAGE: DISTRIBUTION BY FACULTY OF EACH ENROLLMENT CATEGORY
University of San Carlos of Guatemala, 1963

FACULTY	Regular Students				Auditors	Total
	New	Pasantes	Other Re-enrolled	Total		
Agronomy	5.71	3.00	2.28	2.94	1.69	2.93
Architecture	3.87	0.21	4.35	3.95	0.00	3.91
Economics	20.17	10.49	15.38	15.86	10.17	15.80
Law	21.55	14.78	24.90	23.53	11.86	23.42
Medicine	6.35	38.33	11.53	12.66	10.17	12.63
Chemistry & Pharmacy	3.68	4.93	5.91	5.44	16.95	5.55
Humanities	14.09	11.13	5.40	7.38	49.15	7.78
Engineering	8.56	8.57	18.68	16.12	0.00	15.96
Dentistry	6.91	3.21	3.37	3.98	0.00	3.95
Veterinary Medicine	2.76	0.00	2.01	1.99	0.00	1.97
Sub-Total Guatemala City	93.65	94.65	93.81	93.84	100.00	93.90
Economics	1.93	0.64	1.53	1.53	0.00	1.52
Law	2.39	2.57	3.17	2.99	0.00	2.96
Humanities	1.66	1.50	0.66	0.90	0.00	0.89
Rural Social Work	0.37	0.64	0.83	0.73	0.00	0.73
Sub-Total Quezaltenango	6.35	5.35	6.19	6.16	0.00	6.10
Total	100.00 (1,086)	100.00 (467)	100.00 (4,571)	100.00 (6,124)	100.00 (59)	100.00 (6,183)

Source: Computed from data in the Second Student Census.

Enrollment by *Carrera*

A "*carrera*" is a program of study that leads to a degree, diploma, or certificate. During 1963, a total of 31 different programs were in effect at the University of San Carlos: 24 *carreras* available only in Guatemala City, one available only in Quezaltenango, and six available at both campuses. For the purposes of this report, a *carrera* offered in Quezaltenango is deemed to be independent of the corresponding program in the capital; hence discussions in this report will treat of a total of 37 programs, 30 in Guatemala City and seven in Quezaltenango. Similarly, for the purposes of this report, a branch faculty at Quezaltenango is treated as though it were independent of the parent faculty in Guatemala City; hence discussions in this report will refer to a total of 14 schools or faculties, ten of which are in the capital.

In general, each faculty or school develops, manages, and is responsible for the *carreras* it offers. The members of the faculty design the course of study, which therefore expresses their judgment regarding the academic preparation that is appropriate for a given profession: courses, number of courses per year, number of years of study, etc. The course of study invariably includes a number of required courses and may provide for elective courses. In most cases, graduation requirements include a thesis and comprehensive examinations as well as academic courses; thus, as the number of *pasantes* (students who have completed all courses) indicates, completion of course work does not in itself assure graduation.

A faculty may offer one or more *carreras*. During 1963, nine of the University's faculties and schools offered only one *carrera* each; the other five faculties offered a total of 28 *carreras*, as follows:

	<i>Carreras</i>
Faculty of Economic Sciences	3
Faculty of Chemistry and Pharmacy	3
Faculty of Humanities	17
Faculty of Economic Sciences, in Quezaltenango	3
Faculty of Humanities, in Quezaltenango	2

Ninety-nine per cent of all students reported that they were enrolled in a *carrera*. The exceptions were the 59 auditors and nine students who reported as "undecided." Eight students reported that they were enrolled in a *carrera* which had been discontinued.

Tables 8-10 are a summary of enrollments by *carrera*. The two *carreras* in law account for 26.27 per cent of all students. The *carreras* in the faculties of economics account for 17.08 per cent of the total. Civil engineering and medicine account for 15.96 and 12.53 per cent, respectively. At the opposite extreme, eleven *carreras* attracted fewer than ten students each; in total, only 46 (0.74 per cent) students enrolled in these eleven programs—and 7 of them were *pasantes*. Table 7 is a frequency distribution of the 37 *carreras* in terms of the number of students that enrolled in each.

TABLE 7
Carreras Distributed By Numbers of Students Enrolled
University of San Carlos of Guatemala, 1963

Number of Carreras	Range of Enrollment
11	Fewer than 10 students
2	10 - 19
3	20 - 29
2	30 - 39
2	40 - 49
20	Fewer than 50 students
2	50 - 99
8	100 - 199
2	200 - 299
12	Fewer than 300 students
0	300 - 399
2	400 - 499
2	500 - 999
1	1,000 - 1,500
5	More than 400
37	Total

Source: Derived from Second Student Census.

Career Choices

As noted above, slightly more than 70 per cent of *all* students enrolled in the *carreras* of law, civil engineering, and medicine, and in the three economic specialties (accounting and auditing, economics, and business administration).

The obverse of the heavy concentration of students in these few areas, of course, is the scant enrollment in such important areas of study as agriculture and education (teacher training). Clearly, a proper subject for study by the University is the adequacy of the prevailing distribution of its students among the various fields of professional preparation.

In Tables 1-6 and 8-10, a distinction is drawn between new students and re-enrolled students. The career choices made by the new students of 1963 suggest that a change may be taking place in the distribution of students among the several career choices. The percentages of new students who enrolled in the fields of agriculture, dentistry, economics, and humanities in Guatemala City are larger than the percentages of re-enrolled students in those areas of study; the same is true of economics and the teacher education programs at Quezaltenango. The freshmen of 1963, in short, appear to have diversified their career choices rather more than previous students have done. However, additional data are needed in order to judge whether the increasing diversification is real or merely apparent.

TABLE 8
NUMBER OF STUDENTS IN EACH *Carrera*
University of San Carlos of Guatemala, 1963

Faculty	<i>Carrera</i>	New Students	<i>Pasantes</i>	Other Re-enrolled	Total
Agronomy	1 Agricultural Engineering	62	14	104	180
Architecture	2 Architecture	42	1	199	242
Economics	3 Accounting & Auditing	64	24	380	468
	4 Economics	138	25	281	444
	5 Business Administration	16	0	41	57
Law	6 Law	234	69	1,138	1,441
Medicine	7 Medicine	69	179	527	775
Chemistry & Pharmacy	8 Chemical Engineering	20	4	91	115
	9 Biochemistry	12	5	85	102
	10 Pharmacy	8	14	94	116
Humanities	13 Library Science, General	0	1	1	2
	16 Library Science, Advanced	2	0	2	4
	17 Philosophy	6	4	11	21
	18 History	10	3	19	32
	19 Letters	18	4	16	38
	20 Pedagogy	30	14	58	102
	21 Psychology	44	14	97	155
	22 Journalism	6	6	14	26

TABLE 8 (Cont.)
 NUMBER OF STUDENTS IN EACH Carrera
 University of San Carlos of Guatemala, 1963

Faculty	Carrera	New Students	Pasantes	Other Re-enrolled	Total
	Secondary Education: (Specialties)	(37)	(6)	(29)	(72)
	25 Biology	2	1	4	7
	26 Economics	0	3	0	3
	28 Philosophy	1	1	2	4
	29 History	6	0	7	13
	30 Letters	2	0	2	4
	31 Mathematics and Physics	4	0	1	5
	32 Pedagogy	9	0	10	19
	33 Psychology	5	0	2	7
	34 Chemistry	1	1	0	2
Engineering	37 Civil Engineering	93	40	854	987
Dentistry	38 Dentistry	75	15	154	244
Veterinary Medicine	39 Veterinary Medicine	30	0	92	122
Sub-Total Carreras in Guatemala City		1,009	442	4,286	5,737
Economics (Q)	3 Accounting & Auditing	2	3	60	65
	4 Economics	11	0	10	21
	5 Business Administration	1	0	0	1
Law (Q)	6 Law	26	12	145	183
Humanities (Q)	20 Pedagogy Secondary Education Specialty:	15	7	26	48
	32 Pedagogy	3	0	4	7
Rural Social Work (Q)	40 Rural Social Work	4	3	38	45
Sub-Total Carreras in Quezaltenango		62	25	283	370
Sub-Total All Carreras		1,071	467	4,569	6,107
Various Faculties	Auditors	0	0	0	59
Economics	"Undecided":	(8)	(0)	(1)	(9)
	In Guatemala City	1	0	1	2
	In Quezaltenango	7	0	0	7
Humanities	Erroneously Coded	7	0	1	8
Total	All Students	1,086	467	4,571	6,183

Source: Derived from Second Student Census.

TABLE 9
 PERCENTAGE BY ENROLLMENT CATEGORY IN EACH *Carrera*
 University of San Carlos of Guatemala, 1963

Faculty	<i>Carrera</i>	New Students	<i>Pasantes</i>	Other Re-enrolled	Total
Agronomy	1 Agricultural Engineering	34.44	7.78	57.78	100.00 (180)
Architecture	2 Architecture	17.36	0.41	82.23	100.00 (242)
Economics	3 Accounting & Auditing	13.68	5.13	81.20	100.00 (468)
	4 Economics	31.08	5.63	63.29	100.00 (444)
	5 Business Administration	28.07	0.00	71.93	100.00 (57)
Law	6 Law	16.24	4.79	78.97	100.00 (1441)
Medicine	7 Medicine	8.90	23.10	68.00	100.00 (775)
Chemistry & Pharmacy	8 Chemical Engineering	17.39	3.48	79.13	100.00 (115)
	9 Biochemistry	11.76	4.90	83.33	100.00 (102)
	10 Pharmacy	6.90	12.07	81.03	100.00 (116)
Humanities	13 Library Science, General	0.00	50.00	50.00	100.00 (2)
	16 Library Science, Advanced	50.00	0.00	50.00	100.00 (4)
	17 Philosophy	28.57	19.05	52.38	100.00 (21)
	18 History	31.25	9.38	59.38	100.00 (32)
	19 Letters	47.37	10.53	42.10	100.00 (38)
	20 Pedagogy	29.41	13.72	56.86	100.00 (102)
	21 Psychology	28.39	9.03	62.58	100.00 (155)
	22 Journalism	23.08	23.08	53.85	100.00 (26)
	Secondary Education (Specialties)	(51.39)	(8.33)	(40.28)	100.00 (72)
	25 Biology	28.57	14.28	57.14	100.00 (7)
	26 Economics	0.00	100.00	0.00	100.00 (3)
	28 Philosophy	25.00	25.00	50.00	100.00 (4)
	29 History	46.15	0.00	53.85	100.00 (13)
	30 Letters	50.00	0.00	50.00	100.00 (4)
	31 Mathematics and Physics	80.00	0.00	20.00	100.00 (5)

TABLE 9 (Cont.)
 PERCENTAGE BY ENROLLMENT CATEGORY IN EACH Carrera
 University of San Carlos of Guatemala, 1963

Faculty	Carrera	New Students	Pasantcs	Other Re-enrolled	Total
	32 Pedagogy	47.37	0.00	52.63	100.00 (19)
	33 Psychology	71.43	0.00	28.57	100.00 (7)
	34 Chemistry	50.00	50.00	0.00	100.00 (2)
Engineering	37 Civil Engineering	9.42	4.05	86.52	100.00 (987)
Dentistry	38 Dentistry	30.74	6.15	63.11	100.00 (244)
Veterinary Medicine	39 Veterinary Medicine	24.59	0.00	75.41	100.00 (122)
Sub-Total Carreras in Guatemala		17.59	7.70	74.71	100.00 (5737)
Economics (Q)	3 Accounting & Auditing	3.08	4.62	92.31	100.00 (65)
	4 Economics	52.38	0.00	47.62	100.00 (21)
	5 Business Administration	100.00	0.00	0.00	100.00 (1)
Law (Q)	6 Law	14.21	6.56	79.23	100.00 (183)
Humanities (Q)	20 Pedagogy	31.25	14.58	54.17	100.00 (48)
	Secondary Education: Specialty:				
	32 Pedagogy	42.86	0.00	57.14	100.00 (7)
Rural Social Work (Q)	40 Rural Social Work	8.89	6.67	84.44	100.00 (45)
Sub-Total Carreras in Quezaltenango		16.76	6.76	76.49	100.00 (370)
Sub-Total All Carreras		17.54	7.65	74.82	100.00 (6107)
Various Faculties	Auditors	0.00	0.00	0.00	100.00 (59)
Economics	"Undecided"	88.89	0.00	11.11	100.00 (9)
Humanities	Erroneously Coded	87.50	0.00	12.50	100.00 (8)
Total	All Students	17.56	7.55	73.93	100.00 (6183)

Source: Derived from Second Student Census.

TABLE 10
PERCENTAGE: DISTRIBUTION BY Carrera of EACH ENROLLMENT CATEGORY
University of San Carlos of Guatemala, 1963

FACULTY	Carrera	New Students	Pasantes	Other Re- enrolled	Total
Agronomy	1 Agricultural Engineering	5.71	3.00	2.28	2.91
Architecture	2 Architecture	3.87	0.21	4.35	3.91
Economics	3 Accounting & Auditing	5.89	5.14	8.31	7.57
	4 Economics	12.71	5.35	6.15	7.18
	5 Business Administration	1.47	0.00	0.90	0.92
Law	6 Law	21.55	14.78	24.90	23.31
Medicine	7 Medicine	6.35	38.33	11.53	12.53
Chemistry & Pharmacy	8 Chemical Engineering	1.84	0.86	1.99	1.86
	9 Biochemistry	1.10	1.07	1.86	1.65
	10 Pharmacy	0.74	3.00	2.06	1.88
Humanities	13 Library Science, General	0.00	0.21	0.02	0.03
	16 Library Science, Advanced	0.18	0.00	0.04	0.06
	17 Philosophy	0.55	0.86	0.24	0.34
	18 History	0.92	0.64	0.42	0.52
	19 Letters	1.66	0.86	0.35	0.61
	20 Pedagogy	2.76	3.00	1.27	1.65
	21 Psychology	4.05	3.00	2.12	2.51
	22 Journalism Secondary Education:	0.55	1.28	0.31	0.42
	25 (Specialties)	(3.41)	(1.28)	(0.63)	(1.16)
	Biology	0.18	0.21	0.09	0.11
	26 Economics	0.00	0.64	0.00	0.05
	28 Philosophy	0.09	0.21	0.04	0.06
	29 History	0.55	0.00	0.15	0.21
	30 Letters	0.18	0.00	0.04	0.06
	31 Mathematics and Physics	0.37	0.00	0.02	0.08
	32 Pedagogy	0.83	0.00	0.22	0.31
	33 Psychology	0.46	0.00	0.04	0.11
	34 Chemistry	0.09	0.21	0.00	0.03
Engineering	37 Civil Engineering	8.56	8.57	18.68	15.96
Dentistry	38 Dentistry	6.91	3.21	3.37	3.95
Veterinary Medicine	39 Veterinary Medicine	2.76	0.00	2.01	1.97
Sub-Total Carreras in Guatemala City		92.91	94.65	93.62	92.79

TABLE 10 (Cont.)
 PERCENTAGE: DISTRIBUTION BY *Carrera* OF EACH ENROLLMENT CATEGORY
 University of San Carlos of Guatemala, 1963

FACULTY	<i>Carrera</i>	New Students	<i>Pasantes</i>	Other Re-enrolled	Total
Economics (Q)	3 Accounting & Auditing	0.18	0.64	1.31	1.05
	4 Economics	1.01	0.00	0.22	0.34
	5 Business Administration	0.09	0.00	0.00	0.02
Law (Q)	6 Law	2.39	2.57	3.17	2.98
Humanities (Q)	20 Pedagogy Secondary Education:	1.38	1.50	0.57	0.78
	32 Specialty: Pedagogy	0.28	0.00	0.09	0.11
Rural Social Work (Q)	40 Rural Social Work	0.37	0.64	0.83	0.73
Sub-Total <i>Carreras</i> in Quezaltenango		5.71	5.35	6.19	5.98
Sub-Total	All <i>Carreras</i>	98.62	100.00	99.96	98.77
Various Faculties	Auditors	0.00	0.00	0.00	0.95
Economics	"Undecided"	0.73	0.00	0.02	0.15
Humanities	Other programs in Guatemala	0.64	0.00	0.02	0.13
Total	All Students	100.00	100.00	100.00	100.00

Source: Derived from Second Student Census.

YEARS OF STUDY AND ACADEMIC PROGRESS

The 37 *carreras* at the University of San Carlos vary with respect to the number of academic years of study required for their completion. The largest number of *carreras* require six years of study (plus thesis and examinations) for the degree *licenciatura*, which is variously equated to both the B.A. and M.A. levels of academic degrees in the United States. The great majority of students in 1963 enrolled in six-year programs. However, not all *carreras* lead to the *licenciatura*; a *licenciatura* program does not invariably require six years; and *carreras* in fact require from two to eight years of study, as specified in the University catalog.²

²Universidad de San Carlos de Guatemala, *Catálogo de Estudios* (Guatemala: Universidad de San Carlos, 1963), 368 pp.

TABLE 11
ACADEMIC YEARS REQUIRED BY *Carreras*
University of San Carlos of Guatemala, 1963

Years of Required Study	Number of <i>Carreras</i>
2	4
3	8
4	3
5	8
6	13
8	1
	37

Source: Derived from University of San Carlos Catalog.

A regular full-time student enrolled in a six-year program, for example, normally would be expected to complete the courses required of him within six years. A successful full-time student who began such a *carrera* in 1957 should have completed all course requirements in 1962; if he re-enrolled in 1963, he should have re-enrolled as a *pasante*, having completed all *degree* work except for his thesis or related requirements. A successful full-time student who began a *carrera* in 1962 should have completed first-year course requirements prior to his enrollment in 1963.

Each student who re-enrolled in 1963 provided the information necessary to determine the extent to which he was maintaining the rate of progress appropriate to a successful, regular "full-time" student. That information comprises (a) the *carrera* he pursues, (b) the year in which he first enrolled in the *carrera*, and (c) the number of courses he had completed prior to 1963. New students and auditors, naturally, are excluded from consideration, because they have as yet no academic history as University students. Therefore the analyses that follow are limited to the 5,038 re-enrolled students and, more particularly, to 5,036 students who reported that they were re-enrolled in officially recognized *carreras*.

In this report, the academic progress of University students is assessed in terms of the following bases of measurement:

1. Years elapsed since first enrollment in the *carrera*;
2. *Carrera* requirements—years of study;
3. *Carrera* requirements—number of courses;
4. Courses completed in partial fulfillment of requirements;

5. Years of study completed in partial fulfillment of the course-years required by the *carrera*;
6. "Completion Average," a ratio between calendar years enrolled and years of academic study completed; and
7. "Index of Academic Achievement," a second ratio between years enrolled and years of study completed.

Years Elapsed Since First Enrollment

Each student reported the year in which he initiated his present course of study. A simple subtraction—1963 minus the year of first enrollment—indicates the number of years that had elapsed since his first enrollment. For example: 1963 minus 1958 equals 5. This computation was made and recorded in the punched card record of census data for each student.

The number of years elapsed since first enrollment is also the maximum number of years during which the student could have been in attendance at the University. It may be inferred that it is also the number of years of attendance prior to 1963. However, the fact that a student first enrolled in 1958 does not guarantee that he enrolled in each subsequent year; in fact, 1963 might be only his second year—rather than his sixth—of University attendance.

Whether a student did or did not enroll for each of the years, however, is only partly germane to the purposes of this report. If he first enrolled in 1958, and if he had completed two academic years of course work by the date of his re-enrollment in 1963, the relevant facts are that (1) five years had elapsed since he began his University studies, and (2) during that time he had completed the equivalent of two full years of course work. Whether he completed the courses during only two years of full-time effort or did so during five years in part-time attendance, the facts relevant to the question of academic progress remain: two years completed during five years of time.

It is a matter of some interest, nevertheless, whether students interrupt their studies. It is almost certain that some indeterminate number of the re-enrolled students did, at one point or another in their academic careers, leave the University temporarily. Detailed information on this point is not available either from the census or from University records. Informed judgment holds that virtually all students do in fact re-enroll each year until (a) they complete

their *carreras* or (b) they definitively become "drop-outs." Those few who do interrupt and then resume their studies, it is believed, do so only after four, five, or more years of continued attendance. If this judgment is correct, one may accept the inference that the number of years elapsed since first enrollment is, for all practical purposes, also the number of years in attendance at the University.

Table 12 is a summary of re-enrolled students, distributed by faculty and campus, indicating the mean number of years elapsed between students' first enrollment in their present *carreras* and their re-enrollment in 1963. Of the 5,038 re-enrolled students, a total of 5,036 enrolled in *carreras* that were officially available in 1963.³ Of these, 1,887 (37.47 per cent of 5,036) had first enrolled

TABLE 12
AVERAGE YEARS ELAPSED SINCE FIRST ENROLLMENT
BY FACULTY AND CAMPUS
University of San Carlos of Guatemala, 1963

FACULTY	Pasantcs		OTHER RE-ENROLLED		TOTAL OF STUDENTS RE-ENROLLED	
	No. Students	Years	No. Students	Years	No. Students	Years
Agronomy	14	8.57	104	3.55	118	4.14
Architecture	1	5.00	199	3.08	200	3.09
Economics	49	12.65	703	4.90	752	5.41
Law	69	11.35	1,138	5.41	1,207	5.74
Medicine	179	10.19	527	5.97	706	7.04
Chemistry & Pharmacy	23	7.13	270	3.05	293	3.37
Humanities	52	9.25	247	4.94	299	5.69
Engineering	40	9.98	854	4.48	894	4.72
Dentistry	15	9.73	154	5.12	169	5.53
Veterinary Medicine	0	0.00	92	2.99	92	2.99
Sub-Total Guatemala City	442	10.28	4,288	4.82	4,730	5.33
Economics	3	8.33	70	5.87	73	5.97
Law	12	13.08	145	4.41	157	5.08
Humanities	7	6.00	30	3.33	37	3.84
Rural Social Work	3	4.00	38	2.79	41	2.88
Sub-Total Quezaltenango	25	9.44	283	4.44	308	4.85
Total	467	10.23	4,571	4.79	5,038	5.30

Source: Computed from data in the Second Student Census.

³Tables that follow utilize the total 5,036. Two re-enrolled students are therefore eliminated: one reported himself as "undecided" with respect to a *carrera*; the other indicated an obsolete, unavailable *carrera*.

in 1957 or previously; 534 (10.60 per cent of 5,036) had first enrolled in 1951 or previously. The "average" student had been enrolled for 5.30 years prior to 1963; i.e., he had first enrolled in 1957.

Inasmuch as the "average" *carrera* is six years in length, if the "average" student were both successful and in full-time attendance during those 5.30 years, he *should* have been completing his last year of course work during 1963 and he *could* have completed it during 1962. In fact, as will be seen, the "average" student had completed not quite 40 per cent of his six-year *carrera* when he re-enrolled for 1963.

To chose one illustrative case: *Carrera* No. 37—civil engineering—is a six-year *carrera*. Students who first enrolled in 1957—if they were full-time and successful students—would have completed their course work in 1962 and would have re-enrolled in 1963 only as *pasantes*; those who first enrolled in any year prior to 1957 should also have completed their course work prior to 1963. A total of 894 students re-enrolled in 1963; 296 of these (33.11 per cent) had first enrolled in 1957 or earlier, as follows:

Year	Students	Year	Students	Year	Students
1957	77	1952	31	1947	2
1956	64	1951	12	1946	1
1955	37	1950	7	1945	0
1954	32	1949	9	1944	2
1953	20	1948	1	1943	1

Forty of these 296 students really were *pasantes*; 256 were simply behind schedule for completion of this *carrera*, by as much as fifteen years. Depending upon the number of courses they had completed, students who began this program in 1958, or thereafter, could also be well behind schedule (many *were* behind schedule, as will be indicated below). Without exploring the question of course completions, however, it may be observed that *not less than* 28.64 per cent of students re-enrolled in this *carrera* (256 among 894) were completing their studies at a lower rate than would be required of full-time successful students.

The following distribution indicates the number of years elapsed between the first enrollment of all 5,036 students and their re-enrollment in 1963:

Year First Enrolled	Years Elapsed	Number of Students	Per Cent of Total
1962	1	808	16.04
1961	2	644	12.79
1960	3	645	12.81
1959	4	552	10.96
1958	5	500	9.93
1957	6	387	7.68
1956	7	325	6.45
1955	8	241	4.79
1954	9	200	3.97
1953	10	160	3.18
1948-52	11-15	449	8.92
1943-47	16-20	98	1.95
1921-42	21-42	27	0.54
		5,036	100.00

This information is drawn from Table 13, which is a distribution of the 5,036 students in terms of years elapsed since initial enrollment, arranged by *carrera*. The most remote year indicated in the distribution is 1921; one student who re-enrolled in 1963 had initiated his *carrera* in that year. The University might well consider the question whether course completions earned 10 to 40 years ago should be recognized as valid preparation for a degree to be granted today. Of the 5,036 re-enrolled students, 574 (11.41 per cent) had first enrolled in their *carreras* more than 10 years prior to 1963.

***Carrera* Requirements: Years of Study**

As indicated in Table 11, *carreras* vary from two to eight years in length. In 1963, a total of 5,036 students re-enrolled in the 37 valid *carreras*. Table 14 is a distribution of the 5,036 students in terms of the number of years required by their programs. The "average" *carrera* (mean years required per student) for this group was 6.14 years in length (30,907 total years required, divided by 5,036).

TABLE 13 (Cont.)

<i>Carrera</i>	Students Re-enrolled	Years Elapsed Since Year of First Enrollment												
		'62	'61	'60	'59	'58	'57	'56	'55	'54	'53	11-15 '48-'52	16-20 '43-'47	21-42 '21-'42
29 History	7	4	...	1	1	...	...	...	...	...	...	1	...	...
30 Letters	2	...	...	...	...	...	1	...	...	...	...	...	...	1
31 Mathematics and Physics	1	...	...	...	1	...	...	...	...	...	...	...	...	...
32 Pedagogy	10	3	2	2	...	...	...	...	...	...	...	2	1	...
33 Psychology	2	...	...	1	...	...	1	...	...	...	...	...	...	...
34 Chemistry	1	...	...	...	...	...	...	...	...	...	...	1	...	...
37 Civil Engineering	894	150	122	100	121	105	77	64	37	32	20	60	6	...
38 Dentistry	169	22	9	31	22	10	9	21	12	11	7	12	3	...
39 Veterinary Medicine	92	18	19	28	7	13	7	...	...	...	...	...	...	...
Sub-Total <i>Carreras</i> in Guatemala City	4,728	754	604	595	514	476	359	312	228	193	152	419	96	26
3 Accounting & Auditing	63	8	5	11	3	3	8	3	2	3	2	14	1	...
4 Economics	10	2	1	2	1	1	1	...	1	...	...	1	...	...
5 Business Administration	...	...	...	...	...	...	...	...	...	...	...	...	...	...
6 Law	157	28	24	21	17	14	6	10	10	4	6	15	1	1
20 Pedagogy	33	10	2	2	2	6	11	...	...	...	...	...	...	...
Secondary Education:														
32 Specialty: Pedagogy	4	...	1	...	1	...	2	...	...	...	...	...	...	...
40 Rural Social Work	41	6	7	14	14	...	...	...	...	...	...	...	...	...
Sub-Total <i>Carreras</i> in Quezaltenango	308	54	40	50	38	24	28	13	13	7	8	30	2	1
Total All <i>Carreras</i>	5,036	808	644	645	552	500	387	325	241	200	160	449	98	27
Percentage	100.00	16.04	12.79	12.81	10.96	9.93	7.68	6.45	4.79	3.97	3.18	8.92	1.95	0.54

Source: Computed from data in the Second Student Census.

TABLE 14
RE-ENROLLED STUDENTS DISTRIBUTED BY LENGTH OF *Carrera*
University of San Carlos of Guatemala, 1963

Length of <i>Carrera</i> Years	Number of Students	Total Requirements Years
2	10	20
3	71	213
4	37	148
5	394	1,970
6	3,818	22,908
8	706	5,648
	<hr style="width: 50%; margin: 0 auto;"/> 5,036	<hr style="width: 50%; margin: 0 auto;"/> 30,907

Source: Table 16.

***Carrera* Requirements: Number of Courses**

The number of courses required for each *carrera* is indicated in Table 15. It will be noted that requirements vary markedly among the 37 programs of study. The details are not presented, but it is also true that, within a single *carrera*, varying numbers of courses may be required at the different levels of study, e.g., 12 during the first year, 8 in the second year, etc. The variations among *carreras* stem from two facts: first, *carreras* vary from two to eight years in length; second, the University offers both semester- and year-long courses.

However, the number of courses required for completion each year in each *carrera* is a known quantity, readily compared against the course completions reported by each student, and readily projected to determine the total of course completions that will be required of a group of students during their academic careers. Table 15 is a summary of such projections: (a) the number of courses required in a *carrera* multiplied by (b) the number of students re-enrolled in the *carrera* equals (c) the total of course completions to be required of that group of students, assuming that all of them will pursue the *carrera* to completion.

TABLE 15
COURSES REQUIRED AND COMPLETED BY *Carrera*
University of San Carlos of Guatemala, 1963

<i>Carrera</i>	Students Re-enrolled	Courses Required		Courses Completed		Per cent Com- plete
		Per Student	Aggregate	Mean per Student	Aggregate	
1 Agricultural Engineering	118	59	6,962	21.75	2,567	36.87
2 Architecture	200	48	9,600	15.36	3,072	32.00
3 Accounting & Auditing	404	30	12,120	10.32	4,171	34.41
4 Economics	306	31	9,486	9.59	2,936	30.95
5 Business Administration	41	25	1,025	4.66	191	18.63
6 Law	1,207	39	47,073	15.06	18,177	38.61
7 Medicine	706	49	34,594	28.30	19,978	57.75
8 Chemical Engineering	95	32	3,040	8.79	835	27.47
9 Biochemistry	90	37	3,330	8.02	722	21.68
10 Pharmacy	108	38	4,104	14.18	1,531	37.31
13 Library Science, General	2	28	56	19.00	38	67.86
16 Library Science, Advanced	2	40	80	12.00	24	30.00
17 Philosophy	15	40	600	23.47	352	58.67
18 History	22	50	1,100	26.77	589	53.55
19 Letters	20	45	900	24.05	481	53.44
20 Pedagogy	72	45	3,240	24.83	1,788	55.19
21 Psychology	111	42	4,662	25.16	2,793	59.91
22 Journalism	20	38	760	22.00	440	57.89
Secondary Education: (Specialties)	(34)	(M=23.38)	(795)	(12.09)	(411)	(51.70)
25 Biology	5	16	80	6.80	34	42.50
26 Economics	3	17	51	17.00	51	100.00
28 Philosophy	3	24	72	16.67	50	69.44
29 History	7	27	189	11.43	80	42.33
30 Letters	2	26	52	20.00	40	76.92
31 Mathematics and Physics	1	16	16	10.00	10	62.50
32 Pedagogy	10	27	270	9.40	94	34.81
33 Psychology	2	25	50	16.50	37	74.00
34 Chemistry	1	15	15	15.00	15	100.00
37 Civil Engineering	894	58	51,852	17.07	15,261	29.43
38 Dentistry	169	48	8,112	22.91	3,872	47.73
39 Veterinary Medicine	92	36	3,312	15.91	1,464	44.20
Sub-Total <i>Carreras</i> in Guatemala	4,728	M=43.74	206,803	17.28	81,693	39.50

TABLE 15 (Cont.)
COURSES REQUIRED AND COMPLETED BY *Carrera*
University of San Carlos of Guatemala, 1963

<i>Carrera</i>	Students Re-enrolled	Courses Required		Courses Completed		Per cent Com- plete
		Per Student	Aggregate	Mean per Student	Aggregate	
3 Accounting & Auditing	63	30	1,890	12.62	795	42.06
4 Economics	10	31	310	6.10	61	19.68
5 Business Administration	0	25	.....	.....	.....	.....
6 Law	157	39	6,123	12.35	1,939	31.67
20 Pedagogy Secondary Education: Specialty: 32 Pedagogy	33	45	1,485	24.24	800	53.87
40 Rural Social Work	4	27	108	7.25	29	26.85
	41	35	1,435	24.78	1,016	70.80
Sub-Total <i>Carreras</i> in Quezaltenango	308	M=36.85	11,351	15.06	4,640	40.88
Total All <i>Carreras</i>	5,036	M=43.32	218,154	17.14	86,333	39.57

Source: Computed from data in the Second Student Census.

The "average" number of courses (mean number per student) required of the 5,036 students who re-enrolled in valid *carreras* was 43.32. As noted, the "average" student was enrolled in a program which required all courses to be completed in 6.14 years. Hence, the "average" student is ostensibly expected to complete 43.32 courses in 6.14 years, a schedule that requires him to progress at the rate of 7.06 courses per year.

Course Completions

In the census, each student indicated the number of courses that he had completed prior to 1963 in partial fulfillment of *carrera* requirements. Course completions, as well as course requirements, are summarized for each *carrera* in Table 15.

Because course requirements vary so widely, a "course" represents varying fractions of a full-time student's annual quota of courses. Except within a single *carrera*, therefore, the course *per se* does not constitute a consistent or reliable standard unit of measure-

ment. This fact minimizes the usefulness of any distribution of the students in terms of courses completed by them. For this reason, distributions by course completions are not presented in this report.

The group of courses required during each year of a given *carrera*, on the other hand, *does* comprise a usable standard unit of measurement: an academic year. Use of this measurement permits comparisons both within and among *carreras*. Therefore, the purpose that might be served by distributions based upon course completions is met in this report by analyses of academic years of course work completed.

Nevertheless, in terms of the data presented in Table 15, it may be noted that the "average" student had completed 17.14 of the 43.32 courses required; he therefore had progressed 39.57 per cent of the way toward satisfying the course requirements of his *carrera*.

Years of Course Work Completed

The number of years of course work completed is an absolute measure of academic progress, derived from the number of courses completed which, as noted, is a relative measure. The number of years of course work completed was computed for each student, on the basis of *carrera* requirements as stated in the University catalog and on the basis of completed courses as reported by the student. To illustrate: The first several years of study toward one degree require the completion of ten courses per year; a student who has completed 14 courses, for example, may be considered to have completed 1.40 years of this program. A given number of courses in any program of study is similarly convertible into a number of whole or fractional "academic" years.

In thus computing the number of years completed, it is not certain that a student with 1.00 year completed had, in fact, passed each course specified for the first year of his *carrera*. According to the student's report, however, he *had* passed the required *number* of courses.

This conversion—from courses completed into academic years completed—was made for the combination of *carrera* and course completions reported by each student. The appropriate number of academic years of course work completed was added to the punched card record for each student.

Table 16 is a summary of the academic years completed by the re-enrolled students in each *carrera*. In this table, years of study required and academic years completed are compared in order to indicate the percentage of requirements that the "average" student in each *carrera* had completed prior to 1963.

In terms of the mean progress per student, the "average" re-enrolled student had completed 2.44 years of course work; this represented slightly less than 40 per cent of the 6.14 years required in the "average" program.

Table 17 is a distribution of the 5,036 students who re-enrolled in 1963, arranged by *carrera* and in terms of the number of academic years of course work they had completed; Tables 18 and 19 are similar, but are expressed in terms of percentages rather than numbers of students.

In Table 17, a student who had completed less than one full year of course requirements is included at the first year level; a student who had completed one year but less than two years is shown at the second year level, and so forth. A *pasante*—a student who had completed all required courses—is included in the year next beyond the last year of course requirements of his *carrera*, e.g., a *pasante* in a three-year *carrera* is counted at the fourth year level. Similarly, several students reported completion of courses in a quantity that equals or exceeds *carrera* requirements, although they had not passed each of the courses specifically required; these students also are counted at a level beyond the last year required by their *carreras*.

Level of Studies	Number of Students	Per Cent of Total	Mean: Years Elapsed Since First Enrolled
1st Year	1,571	31.20	2.64
2nd Year	1,028	20.41	3.92
3rd Year	742	14.73	5.49
4th Year	552	10.96	7.06
5th Year	357	7.09	8.56
6th Year	319	6.33	8.68
7th Year	288	5.72	9.98
8th Year	179	3.55	10.19
	<u>5,036</u>	<u>100.00</u>	<u>5.30</u>

The University's total enrollment for 1963 was 6,183. The total included 5,036 students who re-enrolled in valid *carreras*.

It also included 1,086 new students, who were enrolling for the first time. Together, these two groups comprised 6,122 (99.01 per cent) of the 6,183 grand total.

The 1,086 new students were about to *begin* to study at the level of first-year courses. When they are added to the 1,571 re-enrolled students *still* at that level, they raise to a total of 2,657 the number of students who were to begin 1963 as University students at the first-year level. The 2,657 comprised 43.40 per cent of 6,122; i.e., excluding from consideration course auditors, etc., it may be said that 43.40 per cent of all students regularly enrolled in the University in 1963 would start the year at the freshman level. The previous summary may therefore be modified, as follows:

Level of Studies	Number of Students	Per Cent of Total
1st Year	2,657	43.40
2nd Year	1,028	16.79
3rd Year	742	12.12
4th Year	552	9.02
5th Year	357	5.83
6th Year	319	5.21
7th Year	288	4.70
8th Year	179	2.92
	<hr/> 6,122	<hr/> 100.00

The disproportionate number of students who re-enrolled at the first-year level is of special interest. Clearly, the simple fact that 1,571 students remained at that level after at least one year in attendance makes this group a proper subject for study by the University. The University's system of examinations is a partial explanation for the phenomenon, but it does not fully account for it.

The examination system grants a student up to three opportunities to pass a course without repeating the course: an end-of-term final examination, a second final examination just prior to, or just after, the start of the next term, and a third final examination several months later. Thus students who first enrolled in 1962 might well have had one or more first-year courses pending when they enrolled for 1963; their inclusion in the group of students at the first-year level might therefore be interpreted as an accidental outcome of the examination system rather than as evidence of academic deficiencies. However, this would not be a valid explanation of the presence of other students in this group.

An analysis was made of the 1,571 re-enrolled students at the first-year level in order to determine the year in which each of them first enrolled in his *carrera*, hence to determine the extent to which the examination system might be responsible. As anticipated, a significant number—674 (42.90 per cent of 1,571)—had first enrolled in 1962. However, 897 of them had been enrolled during previous years; in fact, 42 had first enrolled 10 or more years prior to 1962. The arithmetic mean of years elapsed since first enrollment of these 1,571 students was 2.64. Table 20 is a distribution of this group by *carrera*; the year of first enrollment in the *carrera* is indicated.

The obverse of the heavy concentration of students at the freshman level, of course, is the light enrollment at more advanced levels of study. When enrollment is so distributed, the annual graduating class is necessarily small in relation to the total enrolled. Clearly, a proper subject for study by the University is this abnormal distribution and the causes that produce it. That study would involve the consideration of such questions as these:⁴

1. In terms of their intellectual capacity, are the students who enter the University sufficiently *able* to pursue university-level studies with success?
2. In terms of their prior academic preparation, do the students reach the University with *knowledge* sufficient to permit them to pursue university-level studies with success?
3. Do the students have adequate study habits? Do they study too little and do they therefore achieve less progress than they are capable of achieving?
4. Does the outside employment of students interfere excessively with their study?
5. Are the first-year University courses set at too high an academic level? Do professors demand too much of the students?

Clearly, the corollary to this line of inquiry would be an exploration of means by which to change the present situation. For example: If secondary school preparation is deemed to be inadequate, how can it be improved? If employment impedes study, how can students be relieved of the need to accept regular em-

⁴Forthcoming IIME Staff Reports will offer data pertinent to questions 1, 2 and 4.

ployment? If the University's academic standards are set too high, how can they be modified? If students' study habits are poor, how can they be improved?

Years of Study and Academic Progress: Summary

This section of the report has been a summary of census data regarding the academic progress of 5,036 students who re-enrolled in *carreras* at the University of San Carlos in 1963.

As described by the census data, the "average" student first enrolled 5.30 years prior to 1963; he re-enrolled in a *carrera* that required the completion of 43.32 courses in a program 6.14 years in length. As of the close of 1962, he had completed 17.14 courses or the equivalent of 2.44 academic years of course requirements: slightly less than 40 per cent of the course requirements of his six-year *carrera*, in more than five years.

TABLE 16
YEARS OF STUDY REQUIRED AND COMPLETED BY *Carrera*
University of San Carlos of Guatemala, 1963

<i>Carrera</i>	Students Re-enrolled	Years Required		Years Completed		Per Cent Complete
		Per Student	Aggregate	Mean Per Student	Aggregate	
1 Agricultural						
Engineering	118	6	708	2.02	238.84	33.73
2 Architecture	200	6	1,200	1.84	368.59	30.72
3 Accounting & Auditing	404	6	2,424	2.06	834.20	34.41
4 Economics	306	6	1,836	1.90	582.20	31.71
5 Business Administration	41	5	205	0.93	38.20	18.63
6 Law	1,207	6	7,242	2.31	2,784.06	38.44
7 Medicine	706	8	5,648	4.59	3,241.69	57.40
8 Chemical Engineering	95	5	475	1.40	133.23	28.05
9 Biochemistry	90	6	540	1.30	116.70	21.61
10 Pharmacy	108	6	648	2.26	243.54	37.58
13 Library Science, General	2	3	6	2.00	4.00	66.67
16 Library Science, Advanced	2	4	8	1.20	2.40	30.00
17 Philosophy	15	4	60	2.35	35.20	58.67
18 History	22	5	110	2.68	58.90	53.55
19 Letters	20	5	100	2.51	50.10	50.10
20 Pedagogy	72	5	360	2.60	187.20	52.00
21 Psychology	111	5	555	2.64	293.30	52.85
22 Journalism	20	4	80	2.29	45.78	57.23

TABLE 16 (Cont.)
 YEARS OF STUDY REQUIRED AND COMPLETED BY Carrera
 University of San Carlos of Guatemala, 1963

Carrera	Students Re-enrolled	Years Required		Years Completed		Per Cent Com- plete
		Per Student	Aggregate	Mean Per Student	Aggregate	
Secondary Education: (Specialties):	(34)	(M=2.71)	(92)	(1.30)	(44.10)	47.93
25 Biology	5	2	10	0.76	3.80	38.00
26 Economics	3	2	6	2.00	6.00	100.00
28 Philosophy	3	3	9	1.87	5.60	62.22
29 History	7	3	21	1.14	8.00	38.10
30 Letters	2	3	6	2.07	4.13	68.83
31 Mathematics and Physics	1	2	2	1.00	1.00	50.00
32 Pedagogy	10	3	30	0.99	9.87	32.90
33 Psychology	2	3	6	1.85	3.70	61.67
34 Chemistry	1	2	2	2.00	2.00	100.00
37 Civil Engineering	894	6	5,364	1.72	1,539.72	28.70
38 Dentistry	169	6	1,014	2.77	468.33	46.19
39 Veterinary Medicine	92	6	552	2.69	247.45	44.83
Sub-Total Carreras in Guatemala City	4,728	M=6.18	29,227	2.44	11,557.73	39.55
3 Accounting & Auditing	63	6	378	2.52	159.00	42.06
4 Economics	10	6	60	1.22	12.20	20.33
5 Business Administration	0	5	.....	.....	.....	.....
6 Law	157	6	942	2.35	368.96	39.17
20 Pedagogy	33	5	165	2.55	84.10	50.97
Secondary Education: Specialty:						
32 Pedagogy	4	3	12	0.73	2.90	24.17
40 Rural Social Work	41	3	123	2.10	85.90	69.84
Sub-Total Carreras in Quezaltenango	308	M=5.45	1,680	2.32	713.06	42.44
Total All Carreras	5,036	M=6.14	30,907	2.44	12,270.79	39.71

Source: Computed from data in the Second Student Census.

TABLE 17
 NUMBER OF STUDENTS RE-ENROLLED IN EACH *Carrera*
 DISTRIBUTION BY ACADEMIC LEVEL OF STUDY
 University of San Carlos of Guatemala, 1963

<i>Carrera</i>	ACADEMIC LEVEL OF STUDY								Total	<i>Pasantes</i>
	1	2	3	4	5	6	7	8		
1 Agricultural Engineering	57	15	16	5	7	4	14	...	118	14
2 Architecture	70	59	28	23	10	9	1	...	200	1
3 Accounting & Auditing	134	98	66	42	40	...	24	...	404	24
4 Economics	139	57	25	34	25	1	25	...	306	25
5 Business Administration	29	6	6	...	...	...	...	...	41	...
6 Law	304	307	213	144	113	57	69	...	1,207	69
7 Medicine	46	105	89	91	18	115	65	179	706	179
8 Chemical Engineering	48	17	12	7	6	5	...	...	95	4
9 Biochemistry	59	13	5	3	1	4	5	...	90	5
10 Pharmacy	52	10	8	3	9	12	14	...	108	14
13 Library Science, General	...	1	...	1	...	...	...	...	2	1
16 Library Science, Advanced	1	...	1	...	...	...	...	...	2	...
17 Philosophy	4	2	2	3	4	...	...	...	15	4
18 History	6	2	3	3	5	3	...	...	22	3
19 Letters	4	5	4	2	1	4	...	...	20	4
20 Pedagogy	18	11	14	9	5	15	...	...	72	14
21 Psychology	19	22	17	30	4	19	...	...	111	14
22 Journalism	5	4	3	2	6	...	...	...	20	6
Secondary Education:	(15)	(9)	(9)	(1)	...	...	...	...	(34)	(6)
25 (Specialties) Biology	4	...	1	...	...	...	...	...	5	1
26 Economics	...	...	3	...	...	...	...	...	3	3
28 Philosophy	1	1	...	1	...	...	...	...	3	...
29 History	4	3	...	...	...	...	...	...	7	1
30 Letters	...	1	1	...	...	...	...	...	2	...

TABLE 17 (Cont.)
 NUMBER OF STUDENTS RE-ENROLLED IN EACH *Carrera*
 DISTRIBUTION BY ACADEMIC LEVEL OF STUDY
 University of San Carlos of Guatemala, 1963

<i>Carrera</i>	ACADEMIC LEVEL OF STUDY								Total	<i>Pasantes</i>
	1	2	3	4	5	6	7	8		
31 Mathematics and Physics	...	1	...	...	...	...	...	...	1	...
32 Pedagogy	6	1	3	...	...	...	...	...	10	...
33 Psychology	...	2	...	...	...	...	...	...	2	...
34 Chemistry	...	...	1	...	...	...	...	...	1	1
37 Civil Engineering	443	153	114	77	37	29	41	...	894	40
38 Dentistry	42	30	19	24	18	21	15	...	169	15
39 Veterinary Medicine	6	25	21	17	13	10	...	...	92	...
Sub-Total <i>Carreras</i> in Guatemala City	1,501	951	675	521	320	308	273	179	4,728	442
3 Accounting & Auditing	12	14	13	4	17	...	3	...	63	3
4 Economics	3	5	2	...	...	...	...	...	10	...
5 Business Administration	...	...	...	...	...	...	...	...	...	...
6 Law	33	46	29	17	16	4	12	...	157	12
20 Pedagogy	11	4	2	5	4	7	...	...	33	7
Secondary Education:										
32 Specialty Pedagogy	2	2	...	...	...	...	...	...	4	...
40 Rural Social Work	9	6	21	5	...	...	...	...	41	3
Sub-Total <i>Carreras</i> in Quezaltenango	70	77	67	31	37	11	15	...	308	25
Total All <i>Carreras</i>	1,571	1,028	742	552	357	319	288	179	5,036	467

Source: Computed from data in the Second Student Census.

TABLE 18
STUDENTS RE-ENROLLED IN EACH *Carrera*:
PERCENTAGE: DISTRIBUTION BY ACADEMIC LEVEL OF STUDY
University of San Carlos of Guatemala, 1963

<i>Carrera</i>	ACADEMIC LEVEL OF STUDY								Total	<i>Pasantes</i>
	1	2	3	4	5	6	7	8		
1 Agricultural Engineering	48.31	12.71	13.56	4.24	5.93	3.39	11.86	....	100.00	11.86
2 Architecture	35.00	29.50	14.00	11.50	5.00	4.50	0.50	....	100.00 (118)	0.50
3 Accounting & Auditing	33.17	24.26	16.34	10.40	9.90	....	5.94	....	100.00 (200)	5.94
4 Economics	45.42	18.63	8.17	11.11	8.17	0.33	8.17	....	100.00 (404)	8.17
5 Business Administration	70.73	14.63	14.63	....	....	....	....	....	100.00 (306)	....
6 Law	25.19	25.43	17.65	11.93	9.36	4.72	5.72	....	100.00 (41)	5.72
7 Medicine	6.52	14.87	12.61	12.89	2.27	16.29	9.21	25.35	100.00 (1,207)	25.35
8 Chemical Engineering	50.53	17.89	12.63	7.39	6.32	5.26	....	....	100.00 (706)	4.21
9 Biochemistry	65.56	14.44	5.56	3.33	1.11	4.44	5.56	....	100.00 (95)	5.56
10 Pharmacy	48.15	9.26	7.41	2.78	8.33	11.11	12.96	....	100.00 (90)	12.96
13 Library Science, General	....	50.00	....	50.00	....	....	....	....	100.00 (108)	50.00
16 Library Science, Advanced	50.00	....	50.00	....	....	....	....	....	100.00 (2)	....
17 Philosophy	26.67	13.33	13.33	20.00	26.67	....	....	....	100.00 (2)	26.67
									100.00 (15)	

TABLE 18 (Cont.)
 STUDENTS RE-ENROLLED IN EACH *Carrera*:
 PERCENTAGE: DISTRIBUTION BY ACADEMIC LEVEL OF STUDY
 University of San Carlos of Guatemala, 1963

<i>Carrera</i>	ACADEMIC LEVEL OF STUDY								Total	<i>Pasantes</i>
	1	2	3	4	5	6	7	8		
18 History	27.27	9.09	13.64	13.64	22.73	13.64	....	....	100.00 (22)	13.64
19 Letters	20.00	25.00	20.00	10.00	5.00	20.00	....	....	100.00 (20)	20.00
20 Pedagogy	25.00	15.28	19.44	12.50	6.94	20.83	....	....	100.00 (72)	19.44
21 Psychology	17.12	19.82	15.32	27.03	3.60	17.12	....	....	100.00 (111)	12.61
22 Journalism	25.00	20.00	15.00	10.00	30.00	....	....	....	100.00 (20)	30.00
Secondary Education:	(44.12)	(26.47)	(26.47)	(2.94)	....	....	....	....	100.00 (34)	(17.65)
25 (Specialties): Biology	80.00	....	20.00	....	....	....	....	....	100.00 (5)	20.00
26 Economics	....	....	100.00	....	....	....	....	....	100.00 (3)	100.00
28 Philosophy	33.33	33.33	....	33.33	....	....	....	....	100.00 (3)	....
29 History	57.14	42.86	....	....	....	....	....	....	100.00 (7)	14.29
30 Letters	....	50.00	50.00	....	....	....	....	....	100.00 (2)	....
31 Mathematics and Physics	....	100.00	....	....	....	....	....	....	100.00 (1)	....
32 Pedagogy	60.00	10.00	30.00	....	....	....	....	....	100.00 (10)	....

TABLE 18 (Cont.)

33	Psychology	....	100.00	....	....	....	....	....	....	100.00	....
										(2)	
34	Chemistry	....	....	100.00	....	....	....	....	....	100.00	100.00
										(1)	
37	Civil Engineering	49.55	17.11	12.75	8.61	4.14	3.24	4.59	....	100.00	4.47
										(894)	
38	Dentistry	24.85	17.75	11.24	14.20	10.65	12.43	8.88	....	100.00	8.88
										(189)	
39	Veterinary Medicine	6.52	27.17	22.82	18.48	14.13	10.87	....	....	100.00	....
										(92)	
Sub-Total Carreras in Guatemala City		31.75	20.11	14.28	11.02	6.77	6.51	5.77	3.79	100.00	9.35
										(4,728)	
3	Accounting & Auditing	19.05	22.22	20.63	6.35	26.98	....	4.76	....	100.00	4.76
										(63)	
4	Economics	30.00	50.00	20.00	....	....	....	....	....	100.00	....
										(10)	
5	Business Administration	....	....	....	....	....	....	....	....	....	....
6	Law	21.02	29.30	18.47	10.83	10.19	2.55	7.64	....	100.00	7.64
										(157)	
20	Pedagogy	33.33	12.12	6.06	15.15	12.12	21.21	....	....	100.00	21.21
										(33)	
Secondary Education: Specialty: Pedagogy		50.00	50.00	....	....	....	....	....	....	100.00	....
										(4)	
40	Rural Social Work	21.95	14.63	51.22	12.20	....	....	....	....	100.00	7.32
										(41)	
Sub-Total Carreras in Quezaltenango		22.73	25.00	21.75	10.06	12.01	3.57	4.87	....	100.00	8.12
										(308)	
Total All Carreras		31.20	20.41	14.73	10.96	7.09	6.33	5.72	3.55	100.00	9.27
										(5,036)	

Source: Computed from data in the Second Student Census.

TABLE 19
 PERCENTAGE: DISTRIBUTION BY *Carrera* OF
 RE-ENROLLED STUDENTS AT EACH ACADEMIC LEVEL OF STUDY
 University of San Carlos of Guatemala, 1963

<i>Carrera</i>	ACADEMIC LEVEL OF STUDY								Total	<i>Pasantes</i>
	1	2	3	4	5	6	7	8		
1 Agricultural Engineering	3.63	1.46	2.16	0.91	1.96	1.25	4.86	.....	2.34	3.00
2 Architecture	4.46	5.74	3.77	4.17	2.77	2.82	0.35	.....	3.97	0.21
3 Accounting & Auditing	8.53	9.53	8.89	7.61	11.20	.....	8.33	.....	8.02	5.14
4 Economics	8.85	5.54	3.37	6.16	7.00	0.31	8.68	.....	6.08	5.35
5 Business Administration	1.85	0.58	0.81	.....	.....	.....	.....	.....	0.81	.....
6 Law	19.35	29.86	28.71	26.09	31.65	17.87	23.96	.....	23.98	14.78
7 Medicine	2.93	10.21	11.99	16.49	4.48	36.05	22.57	100.00	14.02	38.33
8 Chemical Engineering	3.06	1.65	1.62	1.27	1.68	1.57	.....	.....	1.89	0.86
9 Biochemistry	3.76	1.26	0.67	0.54	0.28	1.25	1.74	.....	1.79	1.07
10 Pharmacy	3.31	0.97	1.08	0.54	2.52	3.76	4.86	.....	2.14	3.00
13 Library Science, General	.....	0.10	.....	0.18	.....	.....	.....	.....	0.04	0.21
16 Library Science, Advanced	0.06	.....	0.13	.....	.....	.....	.....	.....	0.04	.....
17 Philosophy	0.25	0.19	0.27	0.54	1.12	.....	.....	.....	0.30	0.86
18 History	0.38	0.19	0.40	0.54	1.40	0.94	.....	.....	0.47	0.64
19 Letters	0.25	0.49	0.54	0.36	0.28	1.25	.....	.....	0.40	0.86
20 Pedagogy	1.15	1.07	1.89	1.63	1.40	4.70	.....	.....	1.43	3.00
21 Psychology	1.21	2.14	2.29	5.43	1.12	5.96	.....	.....	2.20	3.00
22 Journalism	0.32	0.39	0.40	0.36	1.68	.....	.....	.....	0.40	1.28
Secondary Education:	(0.95)	(0.88)	(1.21)	(0.18)	.....	.....	.....	.....	(0.68)	(1.28)
25 (Specialties): Biology	0.25	.....	0.13	.....	.....	.....	.....	.....	0.10	0.21
26 Economics	.....	.....	0.40	.....	.....	.....	.....	.....	0.06	0.64

TABLE 19 (Cont.)

<i>Carrera</i>	ACADEMIC LEVEL OF STUDY								Total	<i>Pasantes</i>
	1	2	3	4	5	6	7	8		
28 Philosophy	0.06	0.10	.....	0.18	.....	.....	.....	.....	0.06	.....
29 History	0.25	0.29	.....	.....	.....	.....	.....	.....	0.14	0.21
30 Letters	.....	0.10	0.13	.....	.....	.....	.....	.....	0.04	.....
31 Mathematics and Physics	.....	0.10	.....	.....	.....	.....	.....	.....	0.02	.....
32 Pedagogy	0.38	0.10	0.40	.....	.....	.....	.....	.....	0.20	.....
33 Psychology	.....	0.19	.....	.....	.....	.....	.....	.....	0.04	.....
34 Chemistry	.....	.....	0.13	.....	.....	.....	.....	.....	0.02	0.21
37 Civil Engineering	28.20	14.88	15.36	13.95	10.36	9.09	14.24	.....	17.75	8.57
38 Dentistry	2.67	2.92	2.56	4.35	5.04	6.58	5.21	.....	3.36	3.21
39 Veterinary Medicine	0.38	2.43	2.83	3.08	3.64	3.13	.....	.....	1.83	.....
Sub-Total <i>Carreras</i> in Guatemala City	95.54	92.51	90.97	94.38	89.63	96.55	94.79	100.00	93.88	94.65
3 Accounting & Auditing	0.76	1.36	1.75	0.72	4.76	.....	1.04	.....	1.25	0.64
4 Economics	0.19	0.49	0.27	.....	.....	.....	.....	.....	0.20	.....
5 Business Administration	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
6 Law	2.10	4.47	3.91	3.08	4.48	1.25	4.17	.....	3.12	2.57
20 Pedagogy	0.70	0.39	0.27	0.91	1.12	2.19	.....	.....	0.66	1.50
Secondary Education:										
32 Specialty: Pedagogy	0.13	0.19	.....	.....	.....	.....	.....	.....	0.08	.....
40 Rural Social Work	0.57	0.58	2.82	0.91	.....	.....	.....	.....	0.81	0.64
Sub-Total <i>Carreras</i> in Quezaltenango	4.46	7.41	9.03	5.62	10.36	3.45	5.21	.....	6.12	5.35
Total All <i>Carreras</i>	100.00 (1,571)	100.00 (1,028)	100.00 (742)	100.00 (552)	100.00 (357)	100.00 (319)	100.00 (288)	100.00 (179)	100.00 (5,036)	100.00 (467)

Source: Computed from data in the Second Student Census.

TABLE 20 (Cont.)

<i>Carrera</i>	Total	YEARS ELAPSED SINCE YEAR OF FIRST ENROLLMENT									
		1 '62	2 '61	3 '60	4 '59	5 '58	6 '57	7 '56	8 '55	9 '54	10-16 '47-'53
28 Philosophy	1	...	1	...	...	...	...	...	...	...	...
29 History	4	3	...	1	...	...	...	...	...	...	...
30 Letters	...	...	...	...	...	...	...	...	...	...	...
31 Mathematics and Physics	...	...	...	...	...	...	...	...	...	...	...
32 Pedagogy	6	3	1	...	...	...	...	...	...	...	2
33 Psychology	...	...	...	...	...	...	...	...	...	...	...
34 Chemistry	...	...	...	...	...	...	...	...	...	...	...
37 Civil Engineering	443	148	98	62	60	34	15	11	5	4	6
38 Dentistry	42	16	5	11	6	...	1	2	1	...	...
39 Veterinary Medicine	6	5	1	...	...	...	...	...	...	...	...
Sub-Total <i>Carreras</i> in Guatemala City	1,501	636	310	196	136	75	45	32	18	13	40
3 Accounting & Auditing	12	5	1	4	...	...	...	...	...	...	2
4 Economics	3	1	...	...	1	1	...	...	...	...	...
5 Business Administration	...	...	...	...	...	...	...	...	...	...	...
6 Law	33	17	9	4	1	2	...	...	...	...	...
20 Pedagogy Secondary Education:	11	9	1	...	1	...	...	...	...	...	...
32 Specialty: Pedagogy	2	...	...	...	...	...	2	...	...	...	...
40 Rural Social Work	9	6	2	1	...	...	...	...	...	...	...
Sub-Total <i>Carreras</i> in Quezaltenango	70	38	13	9	3	3	2	...	...	...	2
Total All <i>Carreras</i>	1,571	674	323	205	139	78	47	32	18	13	42

Source: Computed from data in the Second Student Census.

THE RATE OF ACADEMIC PROGRESS

In the previous section, emphasis is placed upon the *amount* of academic progress achieved by 5,036 students who re-enrolled at the University of San Carlos in 1963. The purpose in this section is to determine the *rate* at which the students had been achieving that progress.

Two measures of the rate of academic progress were devised: the "Completion Average" and the "Index of Academic Achievement." Each measure was computed for every student. The factors involved in the computations were:

- a) the number of years elapsed since a student's first enrollment in his *carrera*; and
- b) the number of academic years of course work that he had completed during that time.

The need to determine the rate of academic progress is clear: if a student attends the University on a full-time basis and is "successful" (in the sense that he passes his courses regularly), he presumably will spend one year—and only one—in the process of completing the courses that comprise one year of his academic program. The successful full-time student, consequently, will progress at the rate of one year's course work *completed* per year of attendance *invested*. The *unsuccessful* full-time student—as well as the part-time student—will progress at a lower rate.

Measures of Rate

The Completion Average. The Completion Average is a percentage: the per cent of a year's required courses that a student completes per year enrolled in his *carrera*. Thus: 1.50 academic years completed, divided by 3 calendar years elapsed since first enrollment, is scored as 0.50. A Completion Average of 0.50 signifies that the student has been completing his courses at the rate of 50 per cent of a year's requirement during a year of attendance, i.e., that he is progressing only half as rapidly as is a successful full-time student.

The Index of Academic Achievement. The Index of Academic Achievement is an expression of the number of calendar years

spent by a student in order to complete one year of course work. Thus: 3 calendar years elapsed since first enrollment divided by 1.50 academic years of course work completed, is scored as 2.0. An Index of Academic Achievement of 2.0 signifies that the student has been spending his time at the rate of two years in attendance in order to complete the course requirements of a single year, i.e., that he is spending twice as much time on his *carrera* as is a successful full-time student.

Computations Made. As noted previously, a punched card record was prepared for each student included in the census. The record contained (a) years of course work completed and (b) years elapsed since first enrollment. Two computations provided the two measures of rate: (a) divided by (b) is the Completion Average; (b) divided by (a) is the Index of Academic Achievement. Both measures were recorded in the punched card for each student. The measures were also computed for groups. It will be noted that the Completion Average and the Index of Academic Achievement are reciprocal amounts: i.e., the quantity "1" divided by either measure equals the other.

Measures of Rate: Usefulness. The two measures of the rate of academic progress are intended to raise and to facilitate consideration of such questions as these:

1. During a year of attendance at the University, what portion of the year's academic requirements are being met by students?
2. How many students are progressing at the rate that is appropriate—i.e., the rate prescribed by *carrera* requirements—for successful full-time students?
3. How many are progressing at a rate that is *appropriate* only for *part-time* students? How many of these really are part-time students? How many are unsuccessful students, although they are in regular full-time attendance?
4. The student body of the University is comprised, in fact, of a combination of full- and part-time students; that combination of students completes courses at a measurable rate. To what number of full-time students are they equivalent? That is, if the University enrolled only full-time stu-

- dents, what total enrollment would be required in order for courses to be completed at the same rate?
5. At their present rate of progress, for what total number of years will students have to continue to re-enroll at the University in order to complete all course requirements of their *carreras*? At their present rate of progress, what portion of the total of time and effort invested by the student and by the University is being expended fruitfully?

For example, if the Completion Average of a group of students is 0.45, it may be said that 45 per cent of the student-years invested by those individuals have proved to be fruitful, and that 45 per cent of the effort invested in them by the University also has been fruitful. The remainder of the time and effort has not been productive.

The Index of Academic Achievement may be utilized differently: the Index is useful—in conjunction with the number of years required by a *carrera*—to project the number of years that a student (or group of students) will have to continue to enroll in the University in order to complete the courses required in the *carrera*. Thus: if a student's Index is 2.5, and if his *carrera* prescribes a six-year program of study, it may be said that—at his present rate of academic progress—he will require 15 years (2.5 times 6) to satisfy all the course requirements.

The particular advantage of the Index is its usefulness in making such projections; the Completion Average cannot conveniently be used in this manner. On the other hand, the Index also has one disadvantage as compared to the Completion Average: whereas Completion Averages range from 0.00 to little more than 1.00, the Index ranges from slightly below 1.0 to infinity (any number of calendar years elapsed divided by 0.00 years of course work completed equals infinity). Infinity, as expressed by the computer and recorded in punched cards, was scored as 99.9; hence an Index of 99.9 was recorded for each re-enrolled student who had completed *no* courses during his attendance prior to 1963 (there were 211 such cases among the 5,036 students re-enrolled in *carreras*, as will be shown below). Other extreme scores were produced for students who had completed small fractions of a year of course work during their one or more years of prior attendance. The extreme scores appear in all faculties, as will be

seen. They tend to distort computations that require the summation of *individual* scores; however, this difficulty does not appear when the Index for a *group*—e.g., the students enrolled in a *carrera*—is computed on the basis of aggregates of years.

Results of Analysis

Mean Rates per Student. There were 5,036 students re-enrolled in *carreras* in 1963. As shown in Table 16, they had completed an aggregate of 12,270.79 years of course work, a mean of 2.44 years of course work per student. In the aggregate, 26,676 calendar years had elapsed since their initial registration, a mean of 5.30 calendar years per student.

Therefore, the “average” re-enrolled student had been completing his courses at the rate of 46 per cent of a year’s requirements during a year of attendance—i.e., his Completion Average was 0.46.

Computation:

$$\frac{12,270.79 \text{ years (aggregate)}}{26,676 \text{ years (aggregate)}} = \frac{2.44 \text{ years (mean)}}{5.30 \text{ years (mean)}} = 0.46$$

Similarly, the “average” re-enrolled student had been spending his time at the rate of 2.17 calendar years in attendance in order to complete the course requirements of a single academic year—i.e., his Index of Academic Achievement was 2.17.

Computation:

$$\frac{26,676}{12,270.79} = \frac{5.30}{2.44} = 2.17$$

It has been shown previously that the “average” student was enrolled in a *carrera* scheduled for 6.14 years of study. His Index of Academic Achievement was 2.17. At his present rate of progress—and assuming that he will pursue the *carrera* to completion of all course requirements—the “average” student therefore can expect to spend 2.17 times 6.14, or 13.32 calendar years in attendance at the University. In order to graduate, as noted, he can expect to spend additional time on his thesis and other added requirements. Hence, it may be said that the re-enrolled student would spend approximately 14 years or more in the process of graduating from his six-year program.

Distribution of 5,036 Re-enrolled Students. In Table 21, the 5,036 students are distributed in accordance with their Completion Averages, in brackets of ten percentage points each. The Index of Academic Achievement that corresponds to the upper limit of each group is also shown.

TABLE 21
RE-ENROLLED STUDENTS DISTRIBUTED BY COMPLETION AVERAGE:
INCREMENTS OF TEN PER CENT
University of San Carlos of Guatemala, 1963

Completion Average	Index of Academic Achievement	Number of Students	Per Cent of Total
1.00 or higher	1.00 or lower	466	9.25
0.90 - 0.99	greater than 1.00	165	3.28
0.80 - 0.89	greater than 1.11	432	8.58
0.70 - 0.79	greater than 1.25	335	6.65
0.60 - 0.69	greater than 1.43	519	10.31
0.50 - 0.59	greater than 1.67	558	11.08
0.40 - 0.49	greater than 2.00	532	10.56
0.30 - 0.39	greater than 2.50	618	12.27
0.20 - 0.29	greater than 3.33	575	11.42
0.10 - 0.19	greater than 5.00	462	9.17
0.00 - 0.09	greater than 10.00	374	7.43
		<u>5,036</u>	<u>100.00</u>

Source: Computed from data in the Second Student Census.

It will be noted that 466 students (9.25 per cent of 5,036) at the top of the scale had been completing courses at the rate appropriate to a successful full-time student: one year of courses completed per year of attendance. The Completion Average of each such student is 1.00 or higher, and the corresponding Index of Academic Achievement is 1.00 or lower.

At the lower half of the scale, 50.85 per cent of the 5,036 students had been completing courses at less than half that rate: their Completion Averages are below 0.50 and their Indexes of Academic Achievement exceed 2.00. The 2,561 students in this group were spending not less than two years in attendance in order to complete a single year's courses.

At the higher end of the scale, 27.76 per cent (1,398 of the 5,036) had Completion Averages of 0.70 and above: these students were completing not less than 70 per cent of a year's work during

a year of attendance; stated the other way, they were spending not more than 1.43 calendar years to complete a year's work.

Successful Full-time Students. If one adopts the definition that the only "successful" full-time student is the student who completes his courses in no more than the number of years scheduled in his *carrera*, there were only 466 successful full-time students among the 5,036 who re-enrolled in 1963: 9.25 per cent of the total.

By reference to Table 21, if one relaxes the definition in order to include those who completed 90 per cent of their courses per year, the number of successful full-time students increases by 165, to a total of 631 or 12.53 per cent. Placing the cut-off point at the rate of 80 per cent complete, the group increases by 432, to a total of 1,063 or 21.11 per cent of all re-enrolled students. If the limit is a 70 per cent rate of course completions, the group of successful full-time students—thus defined—increases to 1,398 or 27.76 per cent of the 5,036.

There would seem to be little point in arguing whether the definition should specify one rate of progress rather than another: rates of 70, 75, and 80 per cent or more, all might be defended. At best, however, unless the definition is pushed below the 70 per cent mark, only one-fourth of the students who re-enrolled at the University in 1963 might reasonably be held to be "successful full-time University students."

Scores for Carreras. Table 22 is a summary of the 5,036 re-enrolled students, arrayed by *carrera*. For each *carrera*, the number of students enrolled is indicated; also shown are the aggregates of (a) years elapsed since first enrollment of those students and (b) years of course work completed by them. The Completion Average and the corresponding Index of Academic Achievement were computed for the group of students enrolled in each *carrera*, these scores are shown in the table.

TABLE 22
AVERAGE RATES OF ACADEMIC PROGRESS OF STUDENTS RE-ENROLLED IN EACH Carrera
University of San Carlos of Guatemala, 1963

48

<i>Carrera</i>	Students Re-enrolled	Aggregate			Completion Average	Index of Academic Achievement	Length of Program	Projection: Total Years Required
		Years Completed	Years Elapsed Since First Enrollment					
1 Agricultural Engineering	118	238.84	489	0.49	2.05	6	12.30	
2 Architecture	200	368.59	617	0.60	1.67	6	10.02	
3 Accounting & Auditing	404	834.20	2,284	0.37	2.74	6	16.44	
4 Economics	306	582.20	1,655	0.35	2.84	6	17.04	
5 Business Administration	41	38.20	124	0.31	3.25	5	16.25	
6 Law	1,207	2,784.06	6,934	0.40	2.49	6	14.94	
7 Medicine	706	3,241.69	4,969	0.65	1.53	8	12.24	
8 Chemical Engineering	95	133.23	256	0.52	1.92	5	9.60	
9 Biochemistry	90	116.70	277	0.42	2.37	6	14.22	
10 Pharmacy	108	243.54	454	0.54	1.86	6	11.16	
13 Library Science, General	2	4.00	11	0.36	2.75	3	8.25	
16 Library Science, Advanced	2	2.40	18	0.13	7.50	4	30.00	
17 Philosophy	15	35.20	99	0.36	2.81	4	11.24	
18 History	22	58.90	104	0.57	1.77	5	8.85	
19 Letters	20	50.10	112	0.45	2.24	5	11.20	
20 Pedagogy	72	187.20	398	0.47	2.13	5	10.65	
21 Psychology	111	293.30	611	0.48	2.08	5	10.40	
22 Journalism	20	45.78	121	0.38	2.64	4	10.56	
Secondary Education:	(34)	(44.10)	(220)	(0.20)	(4.99)	(2.71)	(13.52)	
25 (Specialties): Biology	5	3.80	23	0.17	6.05	2	12.10	
26 Economics	3	6.00	36	0.17	6.00	2	12.00	

TABLE 22 (Cont.)

<i>Carrera</i>	Students Re-enrolled	Aggregate			Completion Average	Index of Academic Achievement	Length of Program	Projection: Total Years Required
		Years Completed	Years Elapsed Since First Enrollment					
28 Philosophy	3	5.60	25	0.22	4.46	3	13.38	
29 History	7	8.00	22	0.36	2.75	3	8.25	
30 Letters	2	4.13	32	0.13	7.75	3	23.25	
31 Mathematics and Physics	1	1.00	4	0.25	4.00	2	8.00	
32 Pedagogy	10	9.87	57	0.17	5.78	3	17.34	
33 Psychology	2	3.70	9	0.41	2.43	3	7.29	
34 Chemistry	1	2.00	12	0.17	6.00	2	12.00	
37 Civil Engineering	894	1,539.72	4,221	0.36	2.74	6	16.94	
38 Dentistry	169	468.33	934	0.50	1.99	6	11.94	
39 Veterinary Medicine	92	247.45	275	0.90	1.11	6	6.66	
Sub-Total Guatemala City	4,728	11,557.73	25,183	0.46	2.18	6.18	13.47	
3 Accounting & Auditing	63	159.00	391	0.41	2.46	6	14.76	
4 Economics	10	12.20	45	0.27	3.69	6	22.14	
6 Law	157	368.96	797	0.46	2.16	6	12.96	
20 Pedagogy	33	84.10	124	0.68	1.47	5	7.35	
Secondary Education:								
32 Specialty: Pedagogy	4	2.90	18	0.16	6.20	3	18.60	
40 Rural Social Work	41	85.90	118	0.73	1.37	3	4.11	
Sub-Total Quezaltenango	308	713.06	1,493	0.48	2.09	5.45	11.39	
Total	5,036	12,270.79	26,676	0.46	2.17	6.14	13.32	

Source: Computed from data in the Second Student Census.

TABLE 23
 AVERAGE RATES OF ACADEMIC PROGRESS OF
 STUDENTS RE-ENROLLED IN *Carreras* OF VARYING LENGTH
 University of San Carlos of Guatemala, 1963

80

<i>Carrera</i>	Aggregate						
	Students Re-enrolled	Years Completed	Years Elapsed Since First Enrollment	Completion Average	Index of Academic Achievement	Length of Program	Projection: Total Years Required
31 Mathematics and Physics*	1	1.00	4	0.25	4.00	2	8.00
26 Economics	3	6.00	36	0.17	6.00	2	12.00
34 Chemistry	1	2.00	12	0.17	6.00	2	12.00
25 Biology	5	3.80	23	0.17	6.05	2	12.10
40 Rural Social Work (Q)	41	85.90	118	0.73	1.37	3	4.11
33 Psychology	2	3.70	9	0.41	2.43	3	7.29
13 Library Science, General	2	4.00	11	0.36	2.75	3	8.25
29 History	7	8.00	22	0.36	2.75	3	8.25
28 Philosophy	3	5.60	25	0.22	4.46	3	13.38
32 Pedagogy	10	9.87	57	0.17	5.78	3	17.34
32 Pedagogy (Q)	4	2.90	18	0.16	6.20	3	18.60
30 Letters	2	4.13	32	0.13	7.75	3	23.25
22 Journalism	20	45.78	121	0.38	2.64	4	10.56
17 Philosophy	15	35.20	99	0.36	2.81	4	11.24
16 Library Science, Advanced	2	2.40	18	0.13	7.50	4	30.00
20 Pedagogy (Q)	33	84.10	124	0.68	1.47	5	7.35
18 History	22	58.90	104	0.57	1.77	5	8.85
8 Chemical Engineering	95	133.23	256	0.52	1.92	5	9.60

TABLE 23 (Cont.)

<i>Carrera</i>	Aggregate						
	Students Re-enrolled	Years Completed	Years Elapsed Since First Enrollment	Completion Average	Index of Academic Achievement	Length of Program	Projection: Total Years Required
21 Psychology	111	293.30	611	0.48	2.08	5	10.40
20 Pedagogy	72	187.20	398	0.47	2.13	5	10.65
19 Letters	20	50.10	112	0.45	2.24	5	11.20
5 Business Administration	41	38.20	124	0.31	3.25	5	16.25
39 Veterinary Medicine	92	247.45	275	0.90	1.11	6	6.66
2 Architecture	200	368.59	617	0.60	1.67	6	10.02
10 Pharmacy	108	243.54	454	0.54	1.86	6	11.16
38 Dentistry	169	468.33	934	0.50	1.99	6	11.94
1 Agricultural Engineering	118	238.84	489	0.49	2.05	6	12.30
6 Law (Q)	157	368.96	797	0.46	2.16	6	12.96
9 Biochemistry	90	116.70	277	0.42	2.37	6	14.22
3 Accounting & Auditing (Q)	63	159.00	391	0.41	2.46	6	14.76
6 Law	1,207	2,784.06	6,934	0.40	2.49	6	14.94
3 Accounting & Auditing	404	834.20	2,284	0.37	2.74	6	16.44
37 Civil Engineering	894	1,539.72	4,221	0.36	2.74	6	16.44
4 Economics	306	582.20	1,655	0.35	2.84	6	17.04
4 Economics (Q)	10	12.20	45	0.27	3.69	6	22.14
7 Medicine	706	3,241.69	4,969	0.65	1.53	8	12.24
Total	5,036	12,270.79	26,676	0.46	2.17	6.14	13.32

Source: Computed from data in the Second Student Census.

*All *carreras* which are indented are specialties of secondary education.

TABLE 24
Carreras IN RANK ORDER BY THE AVERAGE RATES OF ACADEMIC PROGRESS OF STUDENTS RE-ENROLLED
 University of San Carlos of Guatemala, 1963

<i>Carrera</i>	Aggregate			Completion Average	Index of Academic Achievement	Length of Program	Projection: Total Years Required
	Students Re-enrolled	Years Completed	Years Elapsed Since First Enrollment				
39 Veterinary Medicine	92	247.45	275	0.90	1.11	6	6.66
40 Rural Social Work	41	85.90	118	0.73	1.37	3	4.11
20 Pedagogy (Q)	33	84.10	124	0.68	1.47	5	7.35
7 Medicine	706	3,241.69	4,969	0.65	1.53	8	12.24
2 Architecture	200	368.59	617	0.60	1.67	6	10.02
18 History	22	58.90	104	0.57	1.77	5	8.85
10 Pharmacy	108	243.54	454	0.54	1.86	6	11.16
8 Chemical Engineering	95	133.23	256	0.52	1.92	5	9.60
38 Dentistry	169	468.33	934	0.50	1.99	6	11.94
1 Agricultural Engineering	118	238.84	489	0.49	2.05	6	12.10
21 Psychology	111	293.30	611	0.48	2.08	5	10.40
20 Pedagogy	72	187.20	398	0.47	2.13	5	10.65
6 Law (Q)	157	368.96	797	0.46	2.16	6	12.96
19 Letters	20	50.10	112	0.45	2.24	5	11.20
9 Biochemistry	90	116.70	277	0.42	2.37	6	14.22
33 Psychology*	2	3.70	9	0.41	2.43	3	7.29
3 Accounting & Auditing (Q)	63	159.00	391	0.41	2.46	6	14.76
6 Law	1,207	2,784.06	6,934	0.40	2.49	6	14.94
22 Journalism	20	45.78	121	0.38	2.64	4	10.56
3 Accounting & Auditing	404	834.20	2,284	0.37	2.74	6	16.44

TABLE 24 (Cont.)

Carrera	Students Re-enrolled	Aggregate			Completion Average	Index of Academic Achievement	Length of Program	Projection: Total Years Required
		Years Completed	Years Elapsed Since First Enrollment					
37 Civil Engineering	894	1,539.72	4,221	0.36	2.74	6	16.44	
13 Library Science, General	2	4.00	11	0.36	2.75	3	8.25	
29 History	7	8.00	22	0.36	2.75	3	8.25	
17 Philosophy	15	35.20	99	0.36	2.81	4	11.24	
4 Economics	308	532.20	1,655	0.35	2.84	6	17.04	
5 Business Administration	41	38.20	124	0.31	3.25	5	16.25	
4 Economics (Q)	10	12.20	45	0.27	3.69	6	22.14	
31 Mathematics and Physics	1	1.00	4	0.25	4.00	2	8.00	
28 Philosophy	3	5.60	25	0.22	4.46	3	13.38	
Secondary Education:	(34)	(44.10)	(220)	(0.20)	(4.99)	(2.71)	13.52	
32 Pedagogy	10	9.87	57	0.17	5.78	3	17.34	
26 Economics	3	6.00	36	0.17	6.00	2	12.00	
34 Chemistry	1	2.00	12	0.17	6.00	2	12.00	
25 Biology	5	3.80	23	0.17	6.05	2	12.10	
32 Pedagogy (Q)	4	2.90	18	0.16	6.20	3	18.60	
16 Library Science, Advanced	2	2.40	18	0.13	7.50	4	30.00	
30 Letters	2	4.13	32	0.13	7.75	3	23.25	
Total	5,036	12,270.79	26,676	0.46	2.17	6.14	13.32	

Source: Computed from data in the Second Student Census.

*All carreras which are indented are specialties of secondary education.

Two additional columns appear in Table 22. As noted previously, the Index of Academic Achievement multiplied by the number of years required in a *carrera* provides a projection of the number of calendar years that students must expect to spend in study if they maintain their present rates of academic progress. This projection was made for each *carrera*; the number of years prescribed by each program and the projection of calendar years to be spent are shown.

In Table 22, the *carreras* appear in the sequence established in previous tables, i.e., in numerical order and by faculty. They are shown also in Table 23, arrayed in accordance with the numbers of years prescribed and years projected for completion, and in Table 24, arrayed in rank order according to the Index of Academic Achievement.

It will be noted that *carrera* No. 39—veterinary medicine—compares very favorably with all other programs, in terms of the rate of academic progress of the students enrolled. As shown in Tables 22 to 24, students enrolled in that *carrera* were completing their course work at the rate of 90 per cent of a year's requirements per year of attendance; stated another way, they were spending 1.11 years in attendance in order to complete a year's requirements. Projecting that rate against the six years required, these students—if they maintain their present rate of course completions—would fulfill all course requirements of their six-year program in 6.66 years.

Among six-year *carreras*, the next best mark is that of *carrera* No. 2—architecture—for which the projection of time required for completion of the six-year program is 10.02 calendar years, half again as much time as would be spent by the students of veterinary medicine, and four years longer than are contemplated in the program plan. Among the 13 six-year *carreras*, it will be noted, only these two plus dentistry are projected to take not more than 12 years to completion.

Among all *carreras*, the following (in rank order) had the most favorable Indexes of Academic Achievement:

Veterinary Medicine	1.11	History	1.77
Rural Social Work (Quez.)	1.37	Pharmacy	1.86
Pedagogy (Quez.)	1.47	Chemical Engineering	1.92
Medicine	1.53	Dentistry	1.99
Architecture	1.67		

As shown in the above list, only in three of these nine *carreras* were students investing less than 1.5 calendar years per academic year completed.

The remaining 28 *carreras* had Indexes in excess of 2.00; i.e., students in them were investing more than two calendar years in order to complete one academic year. In the extreme cases, scores for the 31 students re-enrolled in the last nine *carreras* on the scale produced Indexes of 4.00 or more. All these extremely high Indexes are among the virtually "unpopulated" *carreras*, and are produced by extreme scores within small populations.

Scores for "Pasantes" and Other Groups. The 5,036 re-enrolled students included 467 *pasantes*, students who had completed all course requirements for their *carreras* prior to their enrollment in 1963. A *pasante* is not a graduate, as has been noted, because he has not yet fulfilled such other graduation requirements as a thesis, an internship, or examinations; thus, although there were 467 *pasantes* enrolled in 1963, only 236 (50.5 per cent) graduated in that academic year. However, a *pasante* is an advanced student who clearly has demonstrated his academic proficiency during his years of University attendance. For this reason, the *pasantes* are of special interest: their rate of academic progress is one useful standard against which to compare the academic progress of other re-enrolled students.

At the opposite extreme on the scale of academic progress, 211 students among the 5,036 re-enrolled in 1963 reported that they had not completed *any* courses during 1962 or—in a substantial number of cases—during several years prior to 1963. On the average (arithmetic mean), 2.21 years had elapsed since the first enrollment of these 211 individuals prior to their re-enrollment in 1963. There is no officially accepted or generally recognized term (such as *pasante*) in Central American usage by which to label students in this category, nor does a suitable term appear in university usage in the United States. They are referred to below as "Zeroes," for the number of courses they completed.

Between the two extremes of progress denoted by the *pasantes* and the Zeroes, there were 4,358 re-enrolled students who had completed one or more courses but who had not yet satisfied the course requirements established for their *carreras*.

Earlier in this report, a distribution was presented of the 5,036 students arrayed in terms of 10 per cent increments of Comple-

tion Average; Table 21 is that distribution. Table 25 is a re-statement of the distribution, arranged to facilitate comparison among the *pasantes*, Zeroes, and other re-enrolled students.

The *pasantes* as a group had achieved markedly greater and more rapid academic progress than had the other re-enrolled students. To some extent, as a matter of fact, the Completion Averages computed for *pasantes* tend to *understate* their true rates of academic progress; hence the difference between the groups is even greater than is evident by inspection of the table. The rate of academic progress is based, it will be remembered, on the relationship between academic years of course work completed and calendar years elapsed since first enrollment. In the case of a *pasante*, one year or more may have elapsed after he completed his final course; that is, he may be spending considerable time in fulfilling thesis and similar requirements, but may have completed his courses more quickly than the Completion Average would suggest.

TABLE 25
CATEGORIES OF RE-ENROLLED STUDENTS DISTRIBUTED BY COMPLETION AVERAGE:
INCREMENTS OF 10 PER CENT
University of San Carlos of Guatemala, 1963

Completion Average	Total		<i>Pasantes</i>		Others		"Zeroes"	
	Number	%	Number	%	Number	%	Number	%
1.00 or higher	466	9.25	93	19.91	373	8.56		
0.90 - 0.99	165	3.28	0	0.00	165	3.79		
0.80 - 0.89	432	8.58	101	21.63	331	7.60		
0.70 - 0.79	335	6.65	43	9.21	292	6.70		
0.60 - 0.69	519	10.31	79	16.92	440	10.10		
0.50 - 0.59	558	11.08	74	15.85	484	11.11		
0.40 - 0.49	532	10.56	33	7.07	499	11.45		
0.30 - 0.39	618	12.27	30	6.42	588	13.49		
0.20 - 0.29	575	11.42	7	1.50	568	13.03		
0.10 - 0.19	462	9.17	7	1.50	455	10.44		
0.00 - 0.09	374	7.43	0	0.00	163	3.74	211	100.00
Totals	5,036	100.00	467	100.00	4,358	100.00	211	100.00

Source: Computed from data in the Second Student Census.

Even so, as indicated in Table 25, the superior record achieved by the *pasantes* is clear. Bearing in mind that a high Completion Average indicates a rapid rate of academic progress, it will be noted that there were no *pasantes* in the 0-10 per cent bracket. Only 16.49 per cent of the *pasantes* had low Completion Averages below

TABLE 26
CATEGORIES OF RE-ENROLLED STUDENTS DISTRIBUTED BY FACULTY AND CAMPUS
University of San Carlos of Guatemala, 1963

FACULTY	Total		Pasajes		Others		"Zeros"	
	Number of Students	Completion Average	Number of Students	Completion Average	Number of Students	Completion Average	Number of Students	Completion Average
1 Agronomy	118	0.49	14	0.70	94	0.44	10	0.00
2 Architecture	200	0.60	1	1.20	193	0.60	6	0.00
3 Economics	751	0.36	49	0.47	661	0.35	41	0.00
4 Law	1,207	0.40	69	0.53	1,090	0.39	48	0.00
5 Medicine	706	0.65	179	0.79	526	0.58	1	0.00
6 Chemistry & Pharmacy	293	0.50	23	0.82	226	0.47	44	0.00
7 Humanities	298	0.43	52	0.48	239	0.41	7	0.00
8 Engineering	894	0.36	40	0.60	824	0.34	30	0.00
9 Dentistry	169	0.50	15	0.62	148	0.49	6	0.00
10 Veterinary Medicine	92	0.90	...	...	91	0.90	1	0.00
Sub-Total Guatemala City	4,728	0.46	442	0.64	4,092	0.45	194	0.00
11 Economics	73	0.39	3	0.72	64	0.39	6	0.00
12 Law	157	0.46	12	0.46	142	0.47	3	0.00
13 Humanities	37	0.61	7	0.83	23	0.65	7	0.00
14 Rural Social Work	41	0.74	3	0.75	37	0.74	1	0.00
Sub-Total Quezaltenango	308	0.48	25	0.57	266	0.48	17	0.00
Total	5,036	0.46	467	0.64	4,358	0.43	211	0.00

Source: Computed from data in the Second Student Census.

0.50, whereas 52.15 per cent of "others" and, of course, all of the Zeroes were below that level. Among the *pasantes*, 50.75 per cent had high Completion Averages of 0.70 or above; the same was true of only 26.65 per cent of the "others." The *pasantes* comprised less than one-tenth of the 5,036 re-enrolled students, but among them were one-fifth of the 466 students with very high Completion Averages of 1.00 or above.

Table 26 is a summary by faculty of the mean Completion Averages of the three groups of re-enrolled students. It is noteworthy that the "Zeroes" appear in each faculty.

SUMMARY AND CONCLUSION

One basic fact emerges from the foregoing data and analyses: If he continues to progress at his present rate, and if he perseveres in his studies, the "average" student who re-enrolled at the University of San Carlos of Guatemala in 1963 can expect to spend a total of 14 years in pursuit of his University degree.

That rate of progress is less than half the rate appropriate to a successful full-time University student. Because academic progress is so slow, an inordinate number of students in 1963 were studying at the level of first-year courses. It may be inferred that large numbers of students do not persevere indefinitely in their studies, and that they instead become "drop-outs." Accordingly, the annual group of graduates is quite small as compared to total enrollment; the 236 who graduated in 1963 comprised the largest group ever graduated in a single year, yet they constituted only 3.82 per cent of the total enrollment.

Nevertheless, up to one-fourth of the re-enrolled students in 1963 reasonably may be deemed to be successful and full-time University students. The *pasantes*, most notably, demonstrate that academic progress can be achieved far more rapidly within the University of San Carlos than is now usual within the institution. Thus there is some reason for optimism when one raises the questions, Why are there not more successful full-time students in the University? How can their number be increased?

It is not the purpose of this report to offer answers to questions, or to formulate proposals for University policy. However, the report does contain a reliable set of facts that the University may

bring to bear upon the consideration of major institutional policy matters. The report also contains a series of questions that are pertinent to those policy matters.

This report on the amount and rate of academic progress does not purport to exhaust the wealth of data made available by the Second Student Census. Indeed, only four items of the census provided the basis for this study. In future reports, IIME will explore further in the census data to determine whether significant relationships exist between students' academic progress and other characteristics among those reported in the census. For example, it will be useful to ascertain whether young and unemployed students progress more rapidly than do older, regularly employed students; whether family obligations appear to have an effect upon academic progress; whether a variety of educational, family, financial, and other characteristics may be influential in determining the degree of academic progress that a student achieves in the University.



IIME



INSTITUTO DE INVESTIGACIONES Y MEJORAMIENTO EDUCATIVO

The Institute for Educational Research and Improvement (IIME) is an administrative unit of the University of San Carlos of Guatemala.

Presently, IIME's principal activity is the PROGRAMA INTERUNIVERSITARIO, a program of educational studies conceived and conducted jointly by the University of San Carlos and Michigan State University.

The Institute's programs are conducted in the five Central American republics: Costa Rica, El Salvador, Guatemala, Honduras, and Nicaragua.

The Inter-university Program has been incorporated into the plan of regional integration developed by the Central American University Superior Council (CSUCA: *Consejo Superior Universitario Centroamericano*). The Program includes regional studies in secondary education, higher education, technical education, teacher education, and special education and rehabilitation. The first two years of Program activities were financed by a contract between Michigan State University and the Agency for International Development.