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GOVERNMENT OF KERALA

"INDEPTH STUDY ON STUDENT WASTAGE IN ENGINEERING COLLEGES AND POLYTECHNICS IN KERALA"

MANPOWER STUDY SERIES
No. 41

MANPOWER DIVISION
DEPARTMENT OF ECONOMICS
AND STATISTICS, KERALA
FEBRUARY, 1984

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K E R A L A

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PREFACE

'Manpower study series' provides useful informations on manpower problems and situations and also makes realistic estimates of manpower determinants. This 'indepth study on students wastage in engineering colleges and polytechnics' conducted by Sri. N.SIVADASAN, Manpower Officer of Technical Education Department, makes a deep analysis of the problem of student wastage in technical education. It is hoped that findings of this study will be of extreme use in the context of educational planning in the state.

Trivandrum
24.2.'84

K.RAMAVARMA
DIRECTOR OF ECONOMICS & STATISTICS

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CHAPTER - 1

GENERAL ASPECTS OF THE SURVEY

1.1 Introduction:

Kerala state spends 42% of its total expenditure, every year, on education. Expenditure on education during 80-81 was Rs. 21099 lakhs of which Rs.891 lakhs (4%) was spent on technical education. Great importance is given for technical education to ensure adequate availability of technical manpower in the state. The per capita expenditure on an engineering graduate in 1979-80 stood at Rs.13000/- and that of an engineering diploma holder at Rs.6000/- x student wastage in technical education. 'The expert committee on wastage' constituted by the chairman of 'Southern Regional Committee on Education' brought out several suggestions on tentative assessment of wastage based on intake and out-t turn data. It was pointed out that the out-turn of a particular year indicate only the number of persons who came out successful during the year. The details of persons subsequently passed are not known. It was also pointed out that out-turn data did not tell the story of dropouts and causes of wastage. So the committee suggested an indepth study on student wastage in technical education. As per the suggestions of the committee the department of technical education of kerala has taken up this indepth study on "student wastage in Engineering colleges and Polytechnics" with the following objectives.

X* student wastage results in financial wastage also. It is essential to minimise.

1.2 Objectives:

1) to assess the magnitude and extent of student wastage in Engineering colleges and Polytechnics.

2) to estimate the rate of dropouts.

3) to examine the extent of priliminary and final wastages in the field.

4) to assess wastage with attributes of students such as financial status, community, reservation etc.

5) to identify the causes of wastage

and

6) to explore the possible remedial measures for reducing wastage.

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1.3 Methodology and coverage:

A set of proforma common to degree and diploma courses designed according to the objectives of the study, were sent to the selected institutions. One of the teaching staff of the concerned institutions was entrusted with the task of collection of data relating to that institution. Consolidation of data and drafting of report was done by the manpower officer of the department of technical education. The analysis in the following pages in based on wastage data of a cohort of students admitted during 1975 in some purposively selected engineering institutions in the state. A cohort of 581 students admitted for first year BSc engineering during 1975 in T.I.M. College of Engineering-Quilon, Government Engineering College Trichur, N.S.S. College of Engineering Palghat, and Regional Engineering College Kozhikode and a cohort of 1030 students admitted for diploma courses during the same period in central polytechnic, Trivandrum Government Polytechnic Kalamassery, Government Polytechnic Kozhikode, N.S.S. Polytechnic Pandalam and S.S.M Polytechnic Trichur, have been followed up fill 1980-81 for purposes of this study. The coverage of students for this study is about 65% of degree students and about 47% of diploma students admitted during 1975.

1.4 Period of Survey:

The study was started in April 1980 with a view to complete the same in six months time. But it was extended due to poor field response.

1.5 Limitations:

1) This study is mainly concerned with students admitted in some purposively selected engineering institutions.

2) Engineering college Trivandrum, having degree courses in Telecommunications and Architecture is excluded due to nonavailability of data and hence wastage of students in the above mentioned courses could not be assessed.

3) Even in some selected institutions data on income, community etc of students admitted during 1975 was not available and hence correlation of these aspects to student wastage made out in this report is based on insufficient data.

CHAPTER - 2

RESULTS OF THE SURVEY

2.1 Drop-out of students:

Dropout means discontinuance of students permanently during their course of study. In the case of degree students it generally occur due to non-academic reasons such as financial difficulties, domestic and personal inconveniences, obtaining job, ill-health etc. In certain cases academic reasons like repeated failures in examinations and the resultant loss of self-confidence force the students to leave the course permanently. The chance of dropout is comparatively less in degree courses, compared to deploma courses. Table 2.1 shows that dropout in Engineering, degree courses is 2.75%. Dropout is comparatively high in electrical branch (3.93%) and low in Mechanical branch (1.44%) and nil in chemical branch Dropout of students in engineering diploma courses is found higher than that in degree courses. One of the main reasons of dropout in polytechnics is that many of them get admission to courses having better prospects. Dropout in engineering diploma course is seen 12% and is highest among students admitted in Textile technology branch (27.3%) and nil in Automobile branch. Among traditional subjects, dropout is high in civil branch (12.8%).

Table : 2.1

Dropout in Engineering degree and diploma courses

Branch	No. admitted		Drop out			
	Degree	Diploma	Degree		Diploma	
			No.	%	No.	%
1	2	3	4	5	6	7
Civil	154	289	6	3.90	37	12.8
Mechanical	208	254	3	1.44	30	11.8
Electrical	178	293	7	3.93	33	11.3
Chemical	40	48	-	-	6	12.5
Electronics	x	80	x	x	9	11.3
Textile technology	x	33	x	x	9	27.3
Automobile	x	33	x	x	-	-
Total	581	1030	16	2.75	124	12.0

2.2 Yearly dropouts:

Table 2.2 reveals that in respect of engineering degree course dropout is comparatively high during the first and second year of the course and negligibly small in the latter two years. As regards engineering diploma course dropout is high(7.1%) in the first year of the course and nil in the last years of the course. The number of students detained each year is not discussed here.

Table : 2.2

Yearly dropouts in Engineering degree and diploma courses

Year of the course	Number admitted		Dropout			
	Degree	Diploma	Degree		Dploma	
			No.	%	No.	%
1	2	3	4	5	6	7
First year	581	1030	8	1.38	73	7.1
Second year	551	765	6	1.09	40	5.2
Third year	541	599	1	0.18	11	1.8
Fourth year	539	x	1	0.19	x	x

2.3 Dropout and management of institutions:

Table 2.3 points out that no dropout occured in government engineering colleges and the maximum dropout occured in the quasi-government engineering college ie Regional Engineering college Kozhikode(6.4%). As regards polytechnics dropout is less in private polytechnics(6.2%) and comparatively more in government polytechnics(14.7%).

Table: 2.3

Dropout and management of engineering colleges and politechnics.

Management	Number admitted		Dropout			
	Degree	Diploma	Degree		Diploma	
			No.	%	No.	%
1	2	3	4	5	6	7
Private	239	323	3	1.26	20	6.2
Government	139	707	-	-	104	14.7
Quasi-Government	203		13	6.40	-	-
Total	581	1030	16	2.75	124	12.0

2.4 Preliminary student wastage:

Preliminary student wastage is defined as the precentage of number of students of a batch who do not complete the course and pass the examination in the normal expected time to total number of students admitted to the first year of the course in that batch. If 'X' is the number of students admitted to the first year in a batch and 'Y' the number that complete the course and pass the examination in the prescribed time then preliminary wastage is given by - $\frac{X-Y}{X}$. Preliminary wastage can occur on account of dropout and failure. As is seen in table 2.4 priliminary wastage in engineering degree course is 45.8%. In otherwords only 54.2% completed the course and passed the final examination in the normal course of four years. Preliminary wastage in engineering degree course is seen high in Electrical branch(49.4%) and least in chemical (40%) branch. Preliminary wastage in engineering diploma course is 65.2% It is seen that wastage is highest in Automobile branch(81.8%) and lowest in Electronics branch(36.3%). In traditional branches chemical branch shows less preliminary wastage.

Table : 2.4

Preliminary wastage in engineering degree and diploma courses

Branch	Number admitted		Preliminary wastage			
	Degree	Diploma	Degree		Diploma	
			No.	%	No.	%
1	2	3	4	5	6	7
Civil	154	289	64	41.5	203	70.2
Mechanical	209	254	98	46.9	179	70.5
Electrical	178	293	88	49.4	187	63.8
Chemical	40	48	16	40.0	27	56.8
Electronics	-	80	-	-	29	36.3
Textile technology	-	33	-	-	19	57.6
Automobile	-	33	-	-	27	81.8
Total	581	1030	266	48.8	671	65.2

2.5 Preliminary wastage and management of institutions:

Table 2.5 shows that preliminary wastage is maximum in Regional engineering college, Kozhikode(69.95%) which is under quasi-government management and minimum in private engineering colleges(29.29%). Preliminary wastage of engineering diploma holders is less in private polytechnics

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(57.6%) and high in government polytechnics (68.6%).

Table : 2.5

Preliminary wastage and management of Engineering colleges and Polytechnics

Management	Number admitted		Preliminary wastage			
	Degree	Diploma	Degree		Diploma	
			No.	%	No.	%
1	2	3	4	5	6	7
Private	239	323	70	29.29	186	57.6
Government	139	707	54	38.85	485	68.6
Quasi-Government	203	-	142	69.95	-	-
total	581	1030	266	45.78	671	65.2

2.6 Final wastage of students:

Final wastage is defined as the percentage of students of a batch who do not complete and pass the examinations irrespective of time taken to total number of students admitted to the batch in the first year of the course. Final wastage also occur on account of dropout and never pass in the final examination. But final wastage discussed in this report is only "partially refined final wastage" as the result of subsequent attempts of failed students during the period of two years after the final examination alone are watched and made use of in this analysis. Some of them might have passed in this future attempts and that could not be followed up. But it is presumed that this "partially refined final wastage" is a close approximation to the final wastage. It is admitted that actual final wastage will be less than that estimated in this study. Table 2.6 shows that final wastage in engineering degree course is 15.83% and the percentage is highest in Electrical branch (17.98) and lowest in Chemical branch (7.5). Final wastage of students in engineering diploma courses is high at 46.4%. Among different branches of study of engineering diploma course final wastage is seen highest in Automobile branch (54.5%) and lowest in Electronics branch (27.5%). Among traditional branches final wastage is seen less in Electrical branch (42.7%) and more in Mechanical branch (52.8%).

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Table : 2.6

Final wastage in engineering degree and diploma courses

Branch	No. admitted		Final wastage			
	Degree	Diploma	Degree		Diploma	
			No.	%	No.	%
1	2	3	4	5	6	7
Civil	154	289	20	12.99	146	50.5
Mechanical	209	254	37	17.70	134	52.8
Electrical	178	293	32	17.98	125	42.7
Chemical	40	48	3	7.50	19	39.6
Electronics	-	80	-	-	22	27.5
textile technology	-	33	-	-	14	42.4
Automobile	-	33	-	-	18	54.5
Total	581	1030	92	15.83	478	46.4

2.7 Final wastage and management of institutions:

Table 2.7 shows that final wastage also is highest (32%) in quasi-government managed Regional Engineering college, Kozhikode and lowest(6.7%) in private engineering colleges. As regards engineering diploma courses, final wastage of students is comparatively higher in government polytechnics (54.5%).

Table : 2.7

Final wastage and management of engineering colleges and Polytechnics

Mangaement	Number admitted		Final wastage			
	Degree	Diploma	Degree		Diploma	
			No.	%	No.	%
1	2	3	4	5	6	7
Private	239	323	16	6.69	93	28.8
Government	139	707	11	7.91	385	54.5
Quasi-government	203	-	65	32.02	-	-
Total	581	1030	92	15.83	478	46.4

2.8 Student wastage and economic status:

Family income is taken as the basis of economic status of students to examine the correlation of wastage and economic status. Engineering degree students are grouped into those belonging to families having annual income of below Rs.10,000/-

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Table : 2.8

Student wastage in engineering colleges and polytechnics and economic status of students

Branch	Number admitted			percentage of preliminary wastage				percentage of final wastage			
	Degree		Diploma	Degree		Diploma		Degree		Diploma	
	Income below Rs 10000	Income above Rs10000	Income below Rs 5000	Income above Rs 5000	Income below Rs10000	Income above Rs10000	Income below Rs 5000	Income above Rs 5000	Income below Rs10000	Income above Rs10000	Income below Rs 5000	Income above Rs 5000
1	2	3	5	5	6	7	8	9	10	12	13	13
Civil	49	54	107	121	46.9	48.2	62.6	71.1	12.3	24.1	37.4	52.1
Mechanical	82	79	80	134	52.4	56.9	65.0	74.6	18.3	25.3	35.0	60.4
Electrical	73	59	121	120	58.9	50.9	59.5	73.3	23.3	23.7	32.2	54.2
Chemical	4	36	4	24	-	44.4	50.0	41.7	-	8.3	50.0	41.7
Electronics	-	-	50	30	-	-	38.0	33.3	-	-	26.0	30.0
Textile technology	-	-	17	16	-	-	58.8	56.3	-	-	52.9	31.3
Autobobile	-	-	NA	NA	-	-	NA	NA	-	-	NA	NA
Total	208	228	379	445	52.4	51.3	58.6	68.1	18.8	21.9	34.6	52.4

and those above Rs.10,000/-. Engineering diploma holders are grouped into those belonging to families having annual income of below Rs.5000 and those above Rs.5000/-. Details of 436 engineering degree students and 824 engineering diploma holders are utilised in the following analysis. /Table 2.8 shows that as regards engineering degree courses income of the family or economic status of students did not affect very much the preliminary wastage where as in case of final wastage the percentage in annual income group of above Rs.10.000 is found more than those with income below that limit. In the case of different branches of engineering degree course preliminary wastage of students with income above Rs.10,000 is found higher in all branches except Electrical. In the field of engineering diploma course preliminary and final wastages of students of comparatively poor families are lesser than that of rich families. In case of students of chemical and textile technology branches wastages are higher for students of poor income families.

2.9 Student wastage in engineering colleges and social conditions:

Impact of social condition on student wastage is examined by classifying the population into three social groups viz forward communities, backward communities and scheduled caste scheduled tribe communities. Community details of 436 engineering graduates are discussed inthe following lines. Table 2.9 shows that preliminary and final wastages of students belonging to forward communities have been less than that of backward and Sc/St communities in engineering degree./ In engineering degree /Course course preliminary wastage is seee cent percent in respect of Sc/St students which shows that no students in the sample belonging to Sc/St communities completed the course and pass the examination in the normal course of 4 years. Preliminary wastage of backward class students in chemical and civil engineering branches of engineering degree course is found very much higher than that of forward community students. The same trend is also found true in respect of final wastage of engineering degree holders.

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Table : 2.9

Student wastage in engineering degree course and social conditions of students

Branch	Number admitted			Percentage of prilimary wastage			percentage of final wastage		
	Forward community	backward community	Sc/st	Forwared community	backward community	Sc/St	Forward community	back ward community	Sc/St
1	2	3	4	5	6	7	8	9	10
Civil	73	28	2	36.5	75.0	100.0	16.4	21.4	100.0
Mechanical	128	28	5	47.7	78.6	100.0	12.5	32.0	0.0
Electrical	100	31	1	52.0	64.5	100.0	22.0	25.8	100.0
chemical	28	12	Nil	17.9	91.7	Nil	0.0	25.0	Nil
Total	329	99	8	43.8	74.4	100.0	15.2	26.3	37.5

2.10 Student wastage in polytechnics and social conditions:

As regards engineering diploma course preliminary wastage and final wastage of sc/st students stood very high at 73.5 and 55.4 percentages respectively. The corresponding wastages among students of other communities had been 64.4 and 45.6 percentages respectively. Preliminary wastage of sc/st students of civil and Mechanical branches is however seen comparatively less compare to students of other communities. Table 2.10 gives details of wastage according to community of students.

Table : 2.10

Student wastage in engineering diploma course and social conditions of students

Branch	Number admitted		percentage of preliminary wastage		percentage of final wastage	
	Sc/st	Others	Sc/st	others	Sc/st	others
1	2	3	4	5	6	7
Civil	21	268	61.9	70.9	52.4	50.4
Mechanical	22	232	68.2	70.7	36.4	54.3
Electrical	22	271	77.3	62.7	63.6	41.0
Chemical	3	44	100.0	54.5	66.7	38.6
Electronics	7	73	85.7	31.5	85.7	21.9
Textile technology	4	30	75.0	53.3	50.0	40.0
Automobile	4	29	100.0	79.3	75.0	51.7
Total	83	947	73.5	64.4	55.4	45.6

Table : 2.11

Student wastage in engineering colleges and polytechnics under selection quota

Branch	Number admitted				Percentage of preliminary wastage				Percentage of final wastage			
	Degree		Diploma		Degree		Diploma		Degree		Diploma	
	Merit	Reservation	Merit	Reservation	Merit	Reservation	Merit	Reservation	Merit	Reservation	Merit	Reservation
1	2	3	4	5	6	7	8	9	10	11	12	13
Civil	43	30	45	53	44.8	76.7	48.9	60.4	23.3	26.7	22.2	30.2
Mechanical	94	33	51	45	51.1	91.8	52.9	63.7	20.2	27.3	11.7	33.3
Electrical	70	32	57	46	57.1	65.6	68.4	56.5	25.7	28.1	14.0	41.3
Chemical	28	12	NA	NA	17.9	91.7	NA	NA	-	20.0	NA	NA
Electronics	-	-	25	16	-	- -	24.0	25-0	-	-	16.0	25.0
Textile technology	-	-	NA	NA	-	- -	NA	NA	-	-	NA	NA
Automobile	-	-	NA	NA	-	- -	NA	NA	-	-	NA	NA
Total	235	107	178	160	48.5	76.6	52.8	57.5	20.0	27.1	15.7	24.3

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2.11 Student wastage according to selection quota:

Details of selection quota obtained in respect of 342 engineering graduates and 338 engineering diploma holders are analysed to examine the influence of selection of students under merit and reservation quotas on student wastage. Table 2.11 shows that percentage of preliminary and final wastages have been highest among students selected under reservation quota compared to students selected on merit in both engineering degree and diploma course. In all branches of study high wastage is seen in cases of reservation quota.

2.12 Reasons of wastage according to failed students:

Opinion on reasons of failure and consequent wastage obtained from 40 failed students of engineering degree course and 20 failed students of engineering diploma course have been analysed in Table 2.12. 58% of failed students among engineering degree course reported that the syllabus was vast and difficult and 42% held that the classes were not interesting. Examining their respense to causes of failure it is seen that vastness and toughness of syllabus of engineering degree course have been the main causes of failure and wastage. Almost 75% of failed students of engineering diploma course held that the question asked at the examination were difficult and 60% attributed the cause of their failure to lack of proper laboratory facilities inthe institutions. Lack of facilities at home, uninteresting classes and lack of interest in subject etc were some of other causes of failure of engineering diploma holders.

Table : 2.12

Reasons of failure (wastage) according to failed students

Reasons	Degree		Diploma	
	No. Answered	% to total 40 students	No. answered	% to total 20 students
1	2	3	4	5
1 Vast and difficult syllabus	23	58	17	85
2 Uninteresting classes	17	43	11	55
3 Syllabus not covered	16	40	9	45
4 Questions asked in the examinations were difficult	15	38	15	75
5 Absence from classes	7	18	5	25
6 Lack of facilities at home	9	23	12	60

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1	2	3	4	5
7 Lack of laboratary facilities	8	20	12	60
8 Lack of interest in studies	6	15	11	55
9 Lack of aptitude for subject	3	8	6	30
10 Ill-health	11	28	5	25
11 Financial problems	6	15	10	50
12 General negligence of study	11	28	2	10

2.13 Esisting academic system according to final year students:

Opinions of 50 final year engineering degree students and 20 final year engineering diploma students on the existing educational system were obtained in an attempt to ascertain the influence of the academic system on student wastage in engineering colleges and polytechnics. In table 2.13 it is seen that 30% each of informants desired for a change of branch of studies after the final year of the respective courses. 68% of engineering degree students 15% of engineering diploma students resided in hostels.

For clearing doubts in their subjects of study 70% of engineering degree students and 45% of engineering diploma students adopted the method of discussion with classmates while 70% of engineering diploma students considered the present carricul as voluminous only 26% of the engineering degree students held this view 65 and 56 percentages respectively preferred the system of external valuation in examinations. Fairly high percentage of both groups preferred study during study leave and 56% of the and 95% of the diploma holders were satisfied with the present system of engineering education.

Table : 2.13

Existing system of engineering education according to final year students.

System/ facilities	Degree		Diploma	
	No. answered	% to total 50 students	No. answered	% to total 20 students
1	2	3	4	5
1 Desired for change of branch after first year	15	30	6	30
2 Residing with parents	11	22	9	45
3 Residing in college hostels	34	68	3	15

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1	2	3	4	5
4. Residing in college hostels	5	10	4	20
5 Cleared doubts with teachers	17	34	4	20
6 Cleared doubts with classmates	35	70	9	45
7 Cleared doubts in library	19	38	10	50
8 Felt that carriculum is too large	14	26	14	70
9 Involved in extra-caricular activities	11	22	3	15
10 Preferred internal valuation	18	36	7	35
11 Preferred external valuation	28	56	13	65
12 Felt Co-education adversely	6	12	2	10
13 Followed systematic study	1	2	3	15
14 Followed study during study leave	39	78	15	75
15 Depend on text-books	41	82	13	65
16 Depend on class notes	12	24	7	35
17 Depend on library facilities	16	32	2	10
18 Participate in engineering associations	29	58	19	95
19 satisfied with the present system	28	56	19	95

2.14 Existing facilities of engineering education according to teachers:

50 teachers of engineering colleges and 25 teachers of polytechnics were contacted to obtain their views on existing facilities in engineering education in the state and to know its impact on student wastage. As is evident from table 2.14 all engineering college teachers and 92% of polytechnic teachers claimed themselves to be qualified enough to handle classes. According to teahers large student strength in classes, wide difference in learning standard of students, lack of proper library facilities, decreasing trend of student's standard, lack of training of techhers in teaching techniques etc are some of they lapses in the existing facilities, and these deficiencies contribute to students wastage in engineering education.

Table : 2.14

Existing facilities of engineering education according to teachers

System/Facilities	Degree		Diploma	
	No. answerd	% to total 150 teachers	No. answerd	% to total 50 teachers
1	2	3	4	5
1 Teachers qualified enough to handle classes	50	100	23	92
2 Large student strength affect teaching	27	54	13	52
3 Lack of facilities affect teach teaching	40	80	19	76
4 Lack of library facilities affect students	26	52	11	44
5 Carriculum too hard for students	8	16	8	32
6 Syllabus should be reduced and modified	8	16	7	28
7 Teachers to be trained in teaching techniques	32	64	21	84
8 Dictate notes in class	24	48	20	80
9 Ask questions in class	45	90	25	100
10 Prepare notes every year	43	86	19	76
11 Vast difference in learning standard of students	34	68	17	68
12 Favour internal evaluation	30	60	17	68
13 Standard of students declining every year	22	44	13	52
14 Heavng industrial experience	20	40	8	32

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CHAPTER - 3

SUMMARY AND CONCLUSION

3.1 Summary of findings:-

1 Indepth study on student wastage in engineering education was suggested by"the expert committee on wastage" constituted by the chairman of 'Southern regional committee on education' with a view to make realistic esimates of wastage in technical education and to examine the real causes of wastage.

2 A cohort of 581 engineering degree students and 1030 engineering diploma students admitted in 1975 in four engineering colleges and five polytechnics have been followed up till 80-81 in this study.

3 Purposive selection of sample institutions, non inclusion of engineering college, Trivandrum in sample institutions and unrepresentative data on income and community of students are the main limitations of this study.

4 Dropout in engineering degree courses has been 2.75% and that of diploma courses 12%. Dropout has been high(3.93%) in electrical branch of degree course and in Textile tec technology branch(27.3%) of diploma course.

5 Dropout is seen high in the early years of engineering degree(1.38%) and diploma.(7.1%)courses.

6 High dropout is seen in quasi-government engineering colleges(6.4%) and government owned polytechnics(14.7%)

7 Preliminary student wastage has been(45.8%) in engineering degree courses and 65.2% in engineering diploma courses. Preliminary wastage is found high(49.5%) in Electrical branch of degree courses and Automobile branch(81.8%) of diploma course.

8 Less preliminary wastage is seen in private engineering colleges and polytechnics.

9 Final wastage in engineering degree courses stood at 15.83% and that of engineering diploma course at 46.4%. Electrical branch (17.98%) of degree course and Automobile branch(54.5%) of diploma course showed high percentages of final wastage.

10 Final wastage also is less in private institutions.

11 Comparatively higher final wastage is seen among affluent students of engineering degree(21.9% and diploma courses(52.4%).

12 High percentage of wastage is seen among students of St/St communities and those selected under reservation quota.

13 Vast and tough syelabus, tough questions set for examinations, lack of laboratory and library facilities in institutions, uninteresting classes and lack of interest in subjects, lack of academic atmosphere in hostels, practice of serious study during study leave and lack of systematic approach to study, system internal valuation in examinations, large student strength in classes, wide difference and declining trend of learning standards of students, lack of training of teachers in teaching techniques, etc are some of the real courss of student wastage in engineering colleges and polytechnics in the state.

3.2 Conclusion:

The survey revealed the existence of considerable student wastage in engineering colleges and polytechnics in the state which requires immediate attention of authorities. All possible efforts should be made by the department concerned and the government to solve the problem of student wastage in technical education in the light of real causes of wastage identified in this survey.

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