

An Analysis of the Learners Background and Learning Behaviours in Improving Learning Outcomes

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ABSTRACT

The Outcome Based Education (OBE) and Outcome Based Accreditation (OBA) introduced by National Board of Accreditation (NBA) have added a new dimension to the quality perspectives in technical education in India. The technical education system which was hitherto used to traditional input system of education is adapting to this OBE system and evolving its own methodologies. The learner more specifically and other stakeholders in general are vital to this system.

An understanding of the learner to plan an effective teaching and learning processes towards attainment of the learning outcomes has arisen. The paper presents a summary of the results of a massive survey that was undertaken across four institutes involving around four thousand students. The survey assessments were evaluated and reports in graphic form generated to render it self explanatory, also allowing for own interpretation. The institutes chosen were; one in rural and three in metropolitan area of which one of minority group.

The survey covered three distinct aspects like, Students Background Analysis (SBA), Students Learning Behaviours (SLB) the Students Vocational Pursuits (SVP). Student's comments were elicited as a part of the survey and a few presented. Some significant aspects have emerged that needs to be considered in improving quality.

Keywords: Analysis, Students-Background, Learning-Behaviour, Vocational-Pursuits.

INTRODUCTION

National Board of Accreditation (NBA) is pioneering Outcome Based Education and Accreditation in engineering and technology in India, in tune with the global practices. The main focus shifting on to the learner specifically and other stakeholders' in general. Both the teacher and learner are gradually adapting to this change. With the result the curricular components like; course objectives, course contents, learning experiences and measurement of attainments / performances gaining significance. In this changing scenario to know; what impact the environment the students have grown and their study habits are going to have on attainment of learning outcomes is of interest. That is, the Students Background and Learning Behaviours respectively.

With this in purview a massive survey of both Background Analysis and Learning Behaviours, involving almost 4000 students of 6 programmes (Civil, CSE, EEE, ECE, ISE & ME) semester wise and across 4 institutions was undertaken. The processing and reports generation; branch and

semester wise were programmed. It was done to compare the Background and Learning Behaviours of students' joining different programmes and the Institutes.

Finding it impracticable to present all details a combined overview of the survey out comes of an abridged version is presented in this paper, highlighting essential aspects only. Graphic / charts used to make the contents self explanatory.

OBJECTIVES OF THE SURVEY

1. Understanding the environmental factors influencing the learners growth,
2. Knowing the study habits or practices of the learner,
3. Listing the vocational pursuits of graduating students.
4. Documenting the comments of the students.

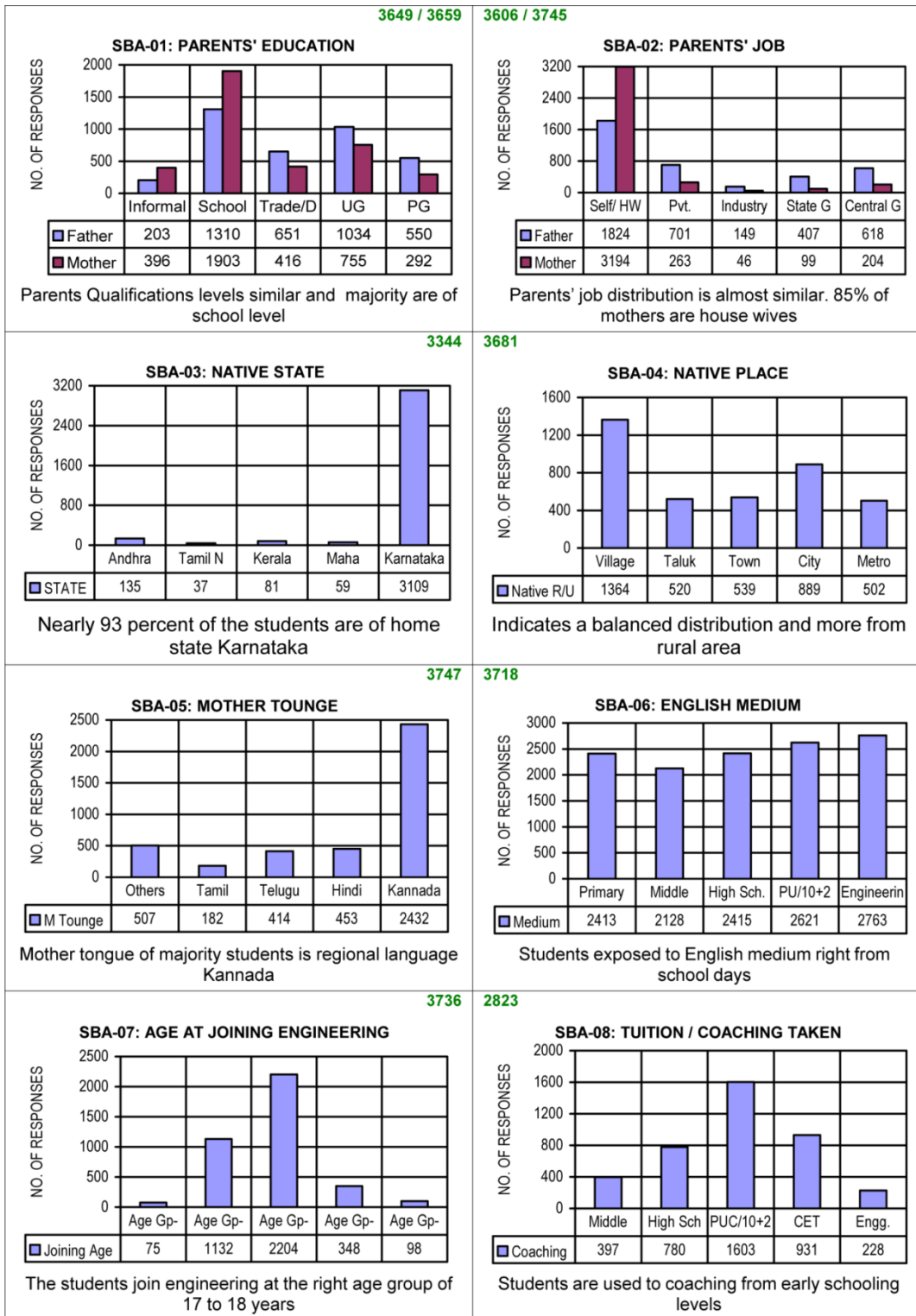
STUDENTS BACKGROUND ANALYSIS

Students with varied ethnic, family, socio-economic and intellectual backgrounds join an institute in pursuit of education, a common goal. A unique questionnaire was designed using the student data base form, to elicit data and information of relevance to the academic practices in vogue and also essential for assessing the outcome of this survey. It comprises of 36 main queries leaving apart the general items and each with 5 distinct items/descriptors in place of levels. Some of the queries have provision for selecting one or more of 1 to 5 items:

1. General items
2. Age Group (3)
3. Place & Studies Group (9)
4. Mother Tongue and Medium Group (2)
5. Admission Group (4)
6. Parents Particulars (6)
7. Fee Group (5)
8. Co & Extracurricular Group (7).

Abridged version for both Students Background Analysis and Students Learning Behaviours study used in this paper for charts generation,

Table 1.227: Students Background Charts SBA-01 to SBA-08



Parents Qualifications levels similar and majority are of school level

Parents' job distribution is almost similar. 85% of mothers are house wives

Nearly 93 percent of the students are of home state Karnataka

Indicates a balanced distribution and more from rural area

Mother tongue of majority students is regional language Kannada

Students exposed to English medium right from school days

The students join engineering at the right age group of 17 to 18 years

Students are used to coaching from early schooling levels

Table 1.228: Students Background Charts SBA-09 to SBA-16

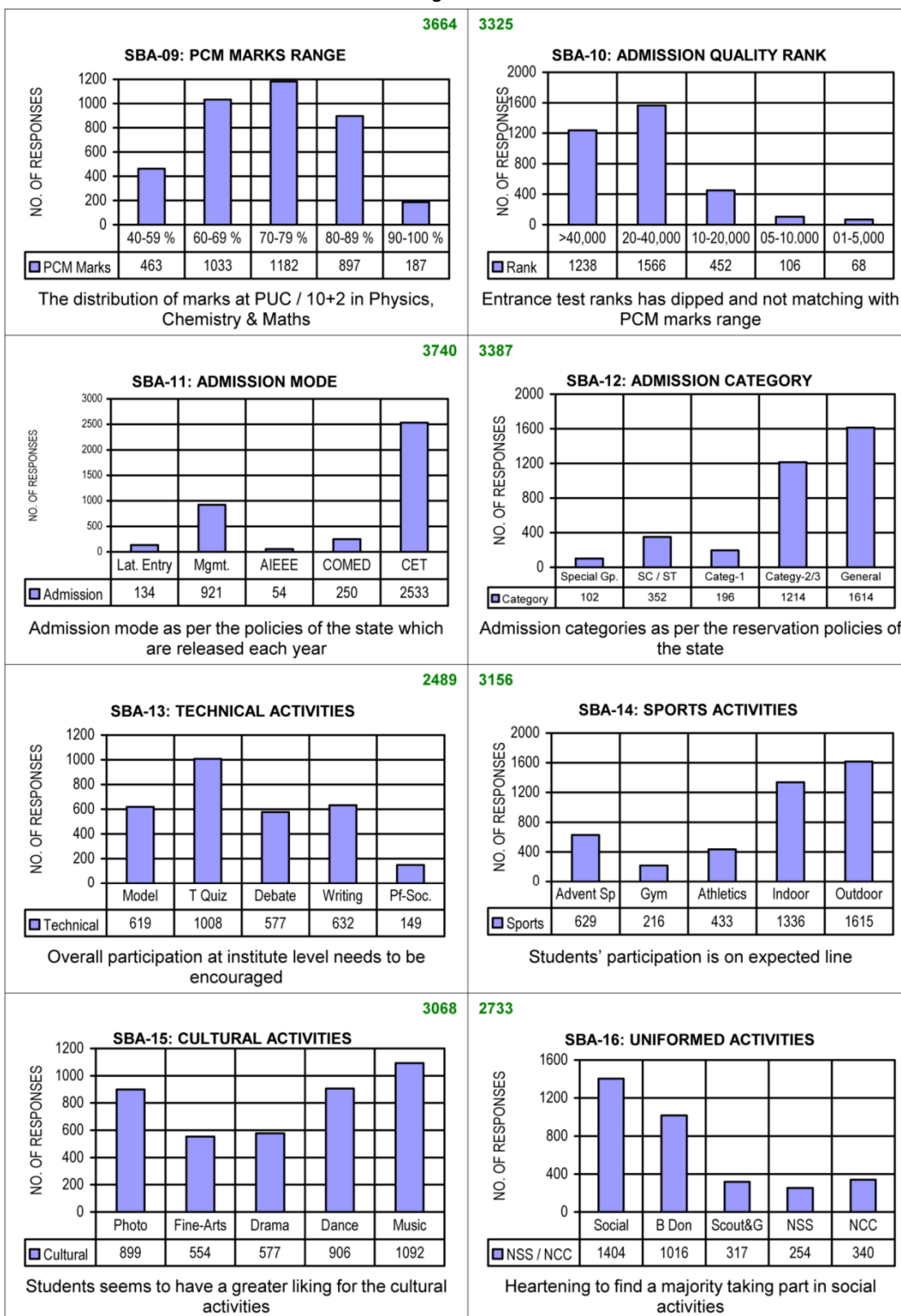
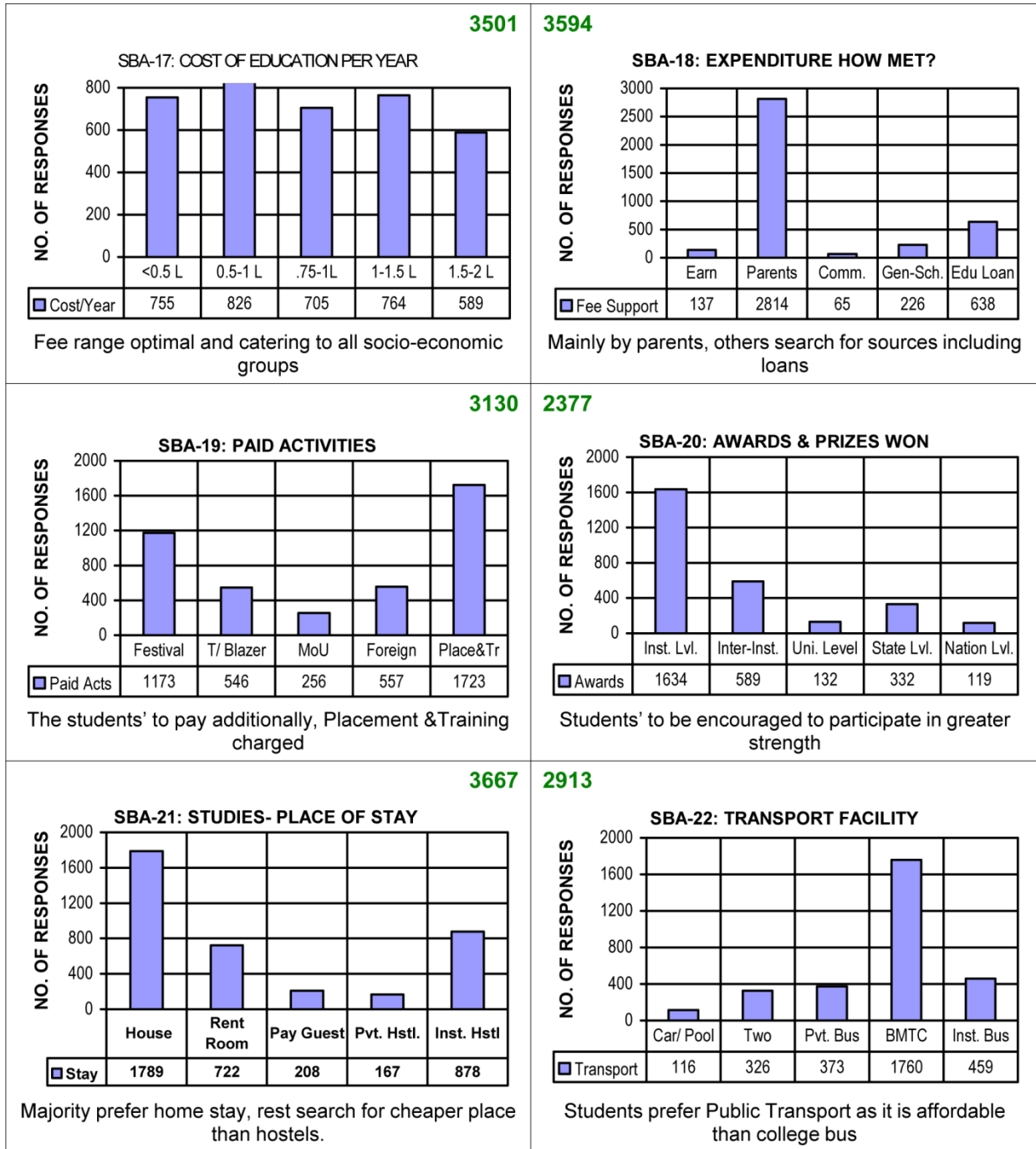


Table 1.3: Students Background Charts SBA-17 to SBA-22



About the Charts: The bars indicate the number of students responding to each item of the queries, the total responses for each query is mentioned above the individual charts. It helps in finding the percentage responses. Charts are self-explanatory, only a brief description added under each.

STUDENTS SELF-REGULATED LEARNING BEHAVIOUR

“A Manual for the Use of Motivated Strategies for Learning Questionnaire (MSLQ)” [3] prompted this survey. Became interested to know how well our students respond to it. A set of 61 questions were selected, statements modified/simplified to vernacular/familiar form. Further, marginal changes were effected based on a sample survey and feedback.

Table 2.1: Students Learning Behaviour Charts SLB-01 to SLB-03

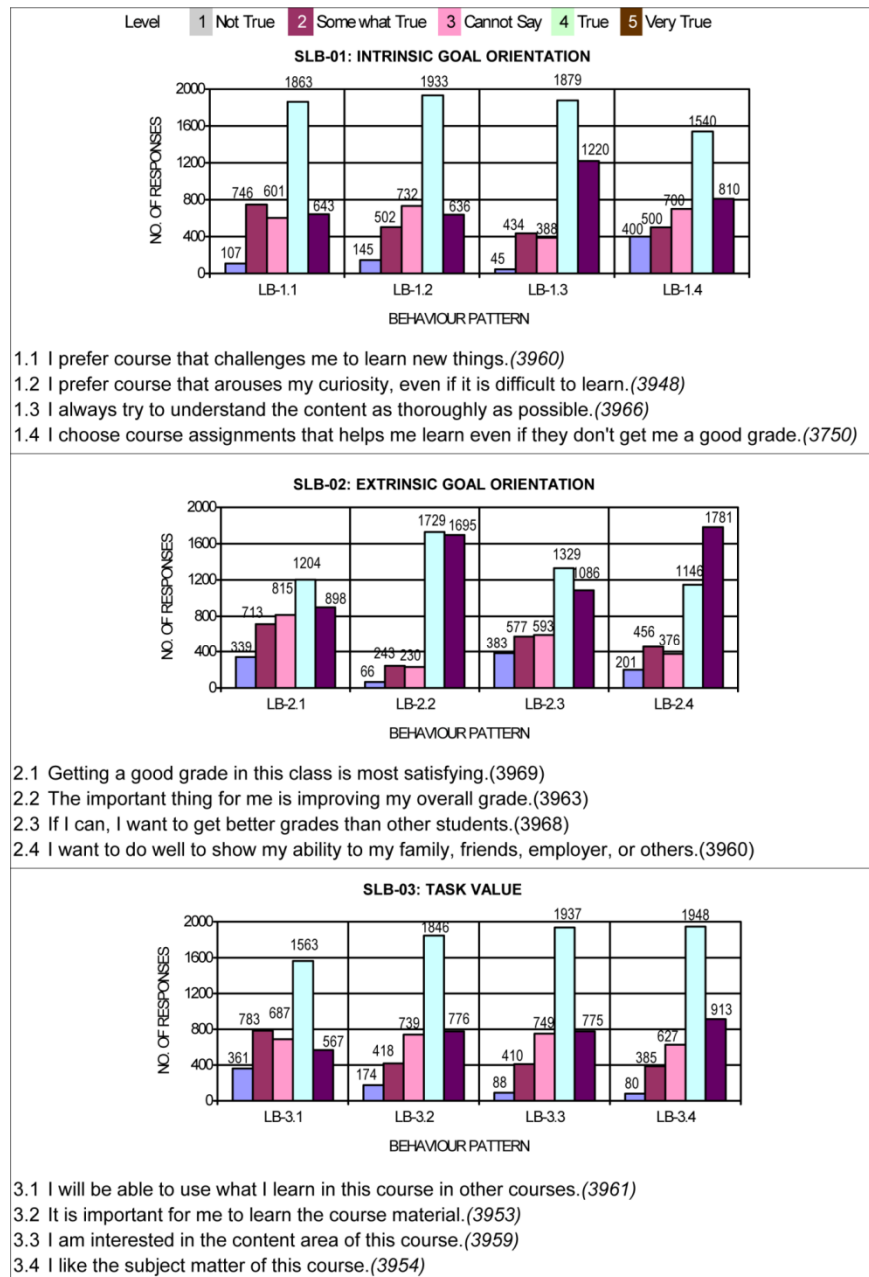


Table 2.2: Students Learning Behaviour Charts SLB-04 to SLB-06

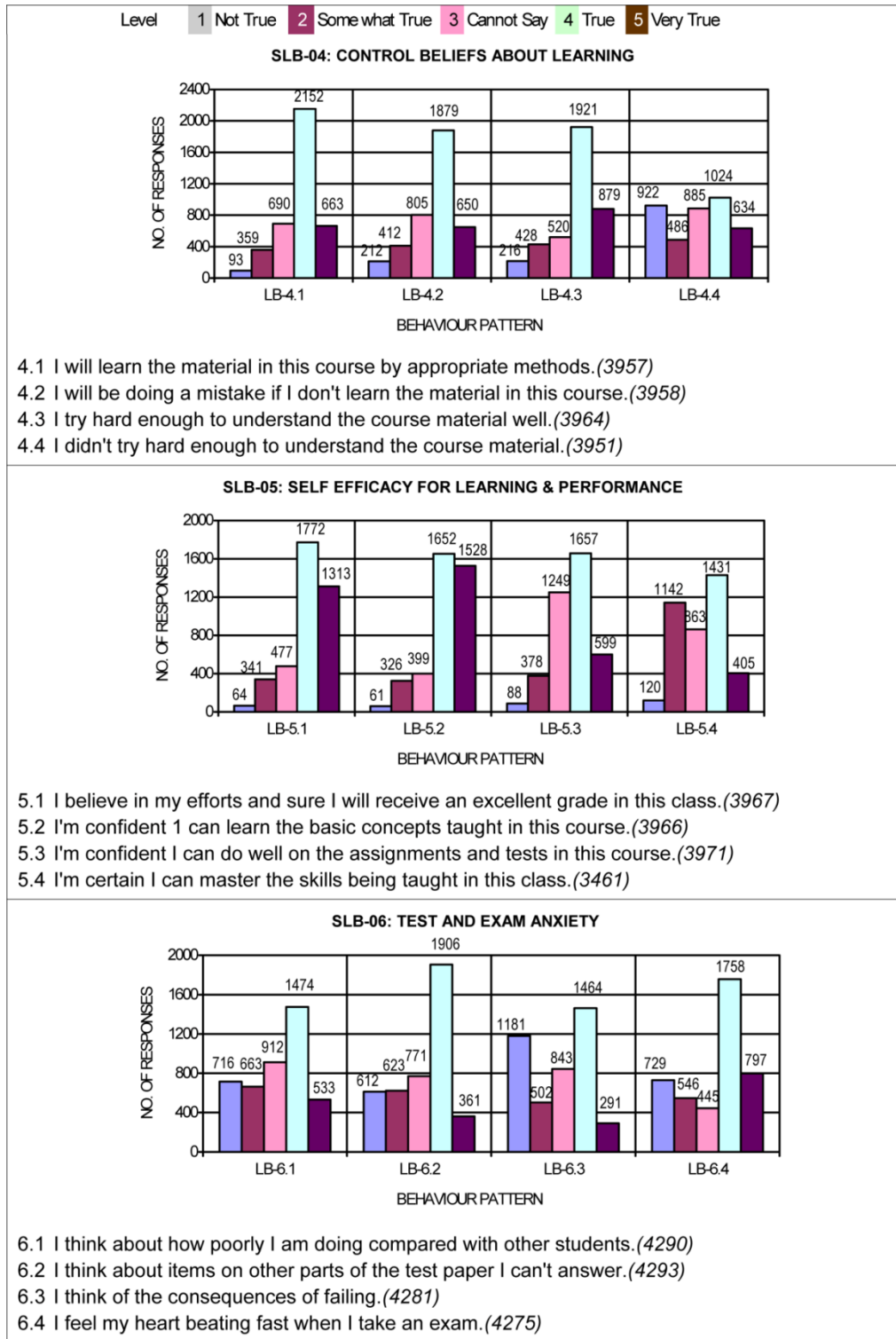


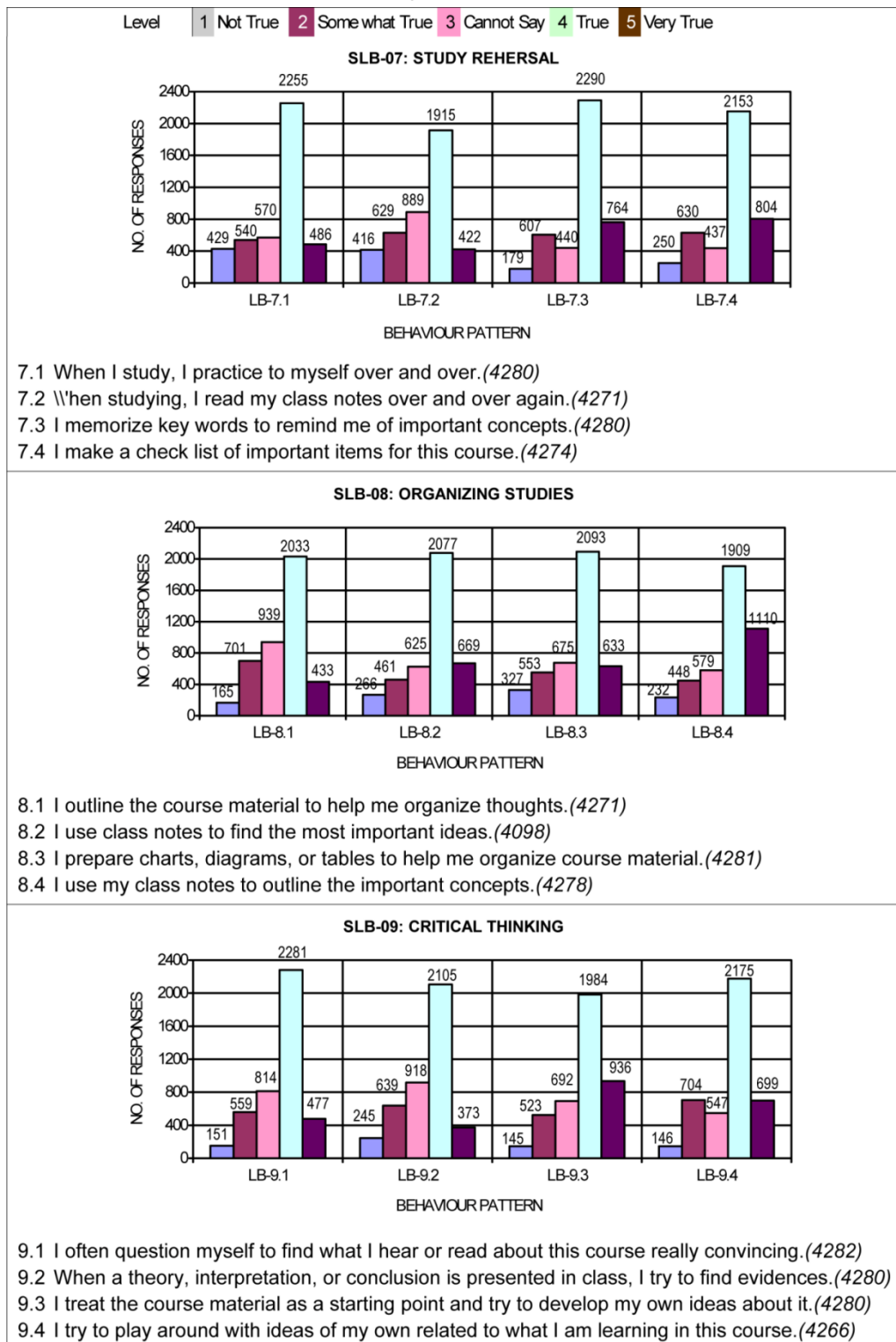
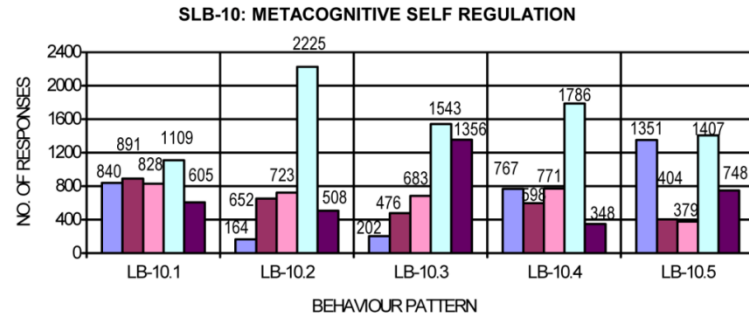
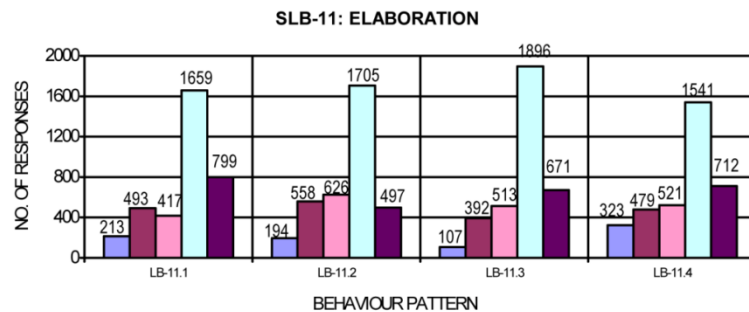
Table 2.3: Students Learning Behaviour Charts SLB-07 to SLB-09

Table 2.4: Students Learning Behaviour Charts SLB-10 to SLB-12

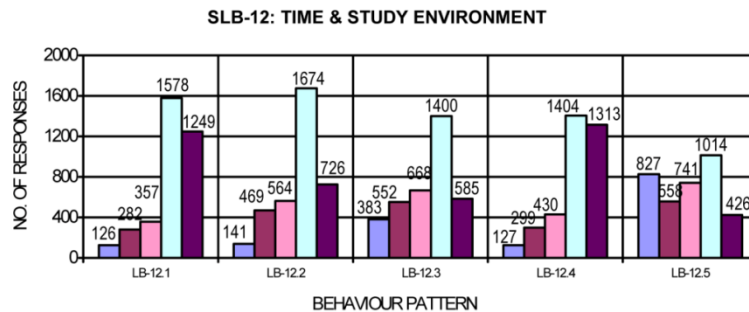
Level 1 Not True 2 Some what True 3 Cannot Say 4 True 5 Very True



- 10.1 During class time I often miss important points because I'm thinking of other things.(4273)
- 10.2 If course readings are difficult to understand, I change the way I read the material.(4272)
- 10.3 I try to orient my studies to the course requirements and the teacher's teaching style.(4260)
- 10.4 I often find that I have been reading for this class but don't know what it was all about.(4270)
- 10.5 If I get confused taking notes in class, I refer to others in class and sort it out afterwards.(4289)



- 11.1 When I study, I gather information from lectures, notes, web, friends and discussions.(3581)
- 11.2 I try to relate ideas in this subject to those in other courses wherever possible.(3570)
- 11.3 When reading, I try to relate the course material to what I already know.(3579)
- 11.4 When I study, I write brief summaries of the main ideas from the books and class notes.(3576)



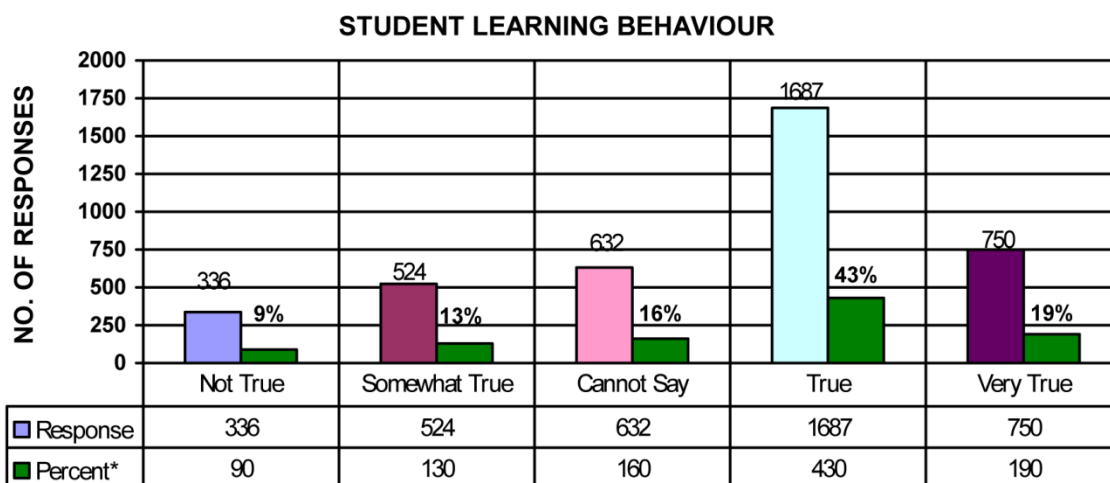
- 12.1 I usually study in a place where I can concentrate on my course work.(3594)
- 12.2 I make good use of my study time for this course.(3574)
- 12.3 I make sure that I keep up with the weekly readings and assignments for this course.(3588)
- 12.4 I attend this class regularly.(3573)
- 12.5 I often find that I don't spend much time on this course due to other activities/distractions.(3566)

Table 2.5: Students Learning Behaviour Charts SLB-13 to SLB-15

Level	1 Not True	2 Some what True	3 Cannot Say	4 True	5 Very True																														
SLB-13: EFFORT REGULATION																																			
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<p>13.1 I often feel lazy or bored while studying then I quit before I finish the work.(3581)</p> <p>13.2 I work hard to do well in this class even if I don't like what we are doing.(3575)</p> <p>13.3 When course work is difficult, I either give up or only study the easy parts.(3580)</p> <p>13.4 Even when courses are uninteresting, still I keep working until I finish.(3588)</p>																																			
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<p>14.1 When studying I often explain the material to a classmate or friend.(3572)</p> <p>14.2 I try to work with other students to complete the course assignments.(3573)</p> <p>14.3 When studying I find time to discuss with a group of my class students.(3561)</p>																																			
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<p>15.1 Even if I have trouble learning still I try to do without help from anyone.(3570)</p> <p>15.2 I ask the instructor to clarify concepts I don't understand well.(3581)</p> <p>15.3 When I can't understand, I ask another student in this class for help.(3571)</p> <p>15.4 I try to identify students whom I can ask for help if necessary.(3562)</p>																																			

Table 3: Students Learning Behaviour Average Response

Description ▾ Rubrics ▶	1- Not True	2- Somewhat True	3- Cannot Say	4- True	5- Very True	Total Average
Average number of students answering each level	336	524	632	1687	750	3929
Percentage of the total	8.55	13.33	16.08	42.94	19.08	100
Percent (Rounded off)	9	13	16	43	19	–



AVERAGE LEVEL RESPONSES & PERCENTAGE

*The percent bar has been enhanced by 10 times for visibility, actual % is mentioned.

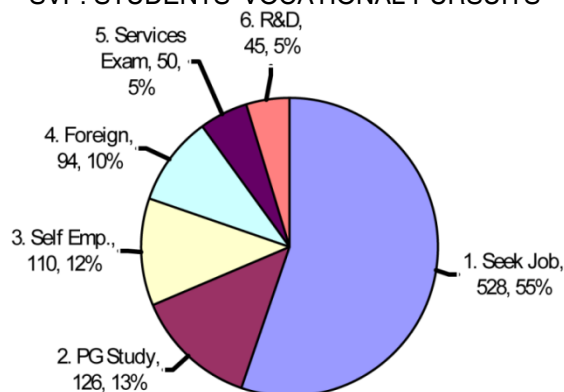
STUDENTS VOCATIONAL PURSUITS

The survey was conducted only for the final year students to find what they would like to do after graduation, students were asked to be very specific and tick any one only out of 6 choices (1 to 6) as indicated in the table.

Table 4.1: Institute wise vocational responses:

Colleges	Response/ Samples	1. Seek Job	2. PG Study	3. Self Employment	4. Foreign	5. Service Exams	6. R&D	Students Comments
DBIT	237	123	30	30	27	11	16	60
HKBK	218	136	18	21	24	12	7	71
KIT	194	116	31	16	14	11	6	90
SVCE	304	153	47	43	29	16	16	65
Total	953	528	126	110	94	50	45	286
Percent*		55.40	13.22	11.54	9.86	5.25	4.72	30.01

*Percent figures rounded off in the chart.

Table 4.2: Students Vocational Pursuits - Chart**SVP: STUDENTS' VOCATIONAL PURSUITS**

The exit survey of graduating students across four colleges has a similar pattern in the choice of vocational pursuits. More than 50 - 55 percent of the students' desire jobs and 45-50 percent of students are desirous of other pursuits and yet quite heartening. As a summary programme outcome the trend needs to be changed through proper motivation and guidance.

STUDENTS COMMENTS

Survey questionnaires had invited comments from the students. About 10 percent of the students from across the colleges had responded. Comments are quite representative of the views of students community. Only a few typical ones reflecting a certain level of understanding of the technical education scenario are presented. The comments are grouped under 20 categories as under; number in parenthesis indicates comments received.

1. *Abroad*-(4)

First priority is to go abroad for higher studies and get into a good organization. Wish to go abroad and then become an entrepreneur.

2. *Admissions*-(1)

Remove the reservation quota while getting seats to Engineering College and in Govt. job because General merit students are unable to get any job.

3. *College*-(51)

It is very good institution where student can know the value of ethics, discipline. Needs Improvement In lots of area

What ever we might have learnt is not entirely from institution.

4. *Diploma*-(3)

Please don't differentiate between the diploma and PU students. Treat them equally. Diploma students find it very difficult to understand mathematics.

5. *Design*-(7)

I gained lot of confidence to get jobs after my education. Now I can design, learn and perform any programs.

Improvement is needed in the area of designing a system, visualizing and working on laboratory and multi-disciplinary tasks.

6. *Extra Curricular-(10)*

Sports and cultural activities should be encouraged.

I got many prizes in PUC, I got Rajyapuraskar and Rashtrapathi Scout award.

7. *Faculty-(15)*

We learnt many things and even technical skills from our teachers and they are very friendly with us. Should impart the practical application of all subjects and make the student technically sound so that it is helpful in placement.

Subjects thought should be in more effective way.

8. *Humanities & Social Sciences-(2)*

There should be an emphasis on personality development.

To get into a management field like a HR, Manager etc. or work.

9. *Learning Experience-(19)*

My engineering course has given me bookish knowledge. Very good experience, knowledge with technical skills

My dream was working with machines, which has come true in my B.E degree.

10. *NBA-(1)*

Accreditation - this is an initiative from NBA to know whether the college is really worth.

11. *Programme Outcomes-(32)*

I have gained good amount of knowledge about the modern engineering tools. Gained a lot of knowledge about my branch and learnt team work etc.

To learn the working ethics and experience

I want to contribute something to the industry and to the society.

12. *PG – Higher Studies-(6)*

I could learn new things. But I do not know if this knowledge is enough for employment or any further study or research.

To improve social skills and get PG

13. *Placement & Training-(17)*

Placement recruitment is needed for the diploma students. Promote more of entrepreneurship.

Need improvement in placement.

14. *Practical Component-(33)*

Provide extra facilities for practical learning and project purpose.

Practical should be considered more importantly rather than theory of any subjects.

Engineering is a science of knowledge acquired through practice, so practical is important than mulling over theoretical knowledge.

15. *Research & Development-(5)*

College should open research Labs, thinking labs for students from first year

Improve R&D department.

16. *Self Learning-(5)*

Rather than conducting extra classes, it is better to give free time and library period to students. Its better they work out on their own, and there must be a special period for doubts clarification. We need time for our self also for study and other activities like self-assessments etc.

17. *Survey-(9)*

It was very nice survey, to know how the students are taking interest in the course
This is the best method of student enquiry.

18. *Syllabus-(41)*

Tough syllabus, no way to learn extra things about science and technology
I think it is quite good for learning theoretical aspects but there is lack of practical aspect.
The course must be career oriented and it should enhance the employability. Advancement in technology should be included so that exposure to them is obtained.

19. *Time Table / Timings-(3)*

Please reduce the college timings and college fees
Hectic scheduling in the college timings

20. *University-(22)*

According to me the University can revise or update syllabus every two years instead of four years with slight modification rather than drastic changes every four years.
The Engineering syllabus is less Industry oriented, hence needs to update according to the present Industry requirement. Curriculum needs to form on R&D.
Programs for social awakening and programs which include students in social activities are needed.
Please reduce the syllabus or number of subjects in a semester.

CONCLUSIONS

The implementation of Outcome Based Education System necessitates an understanding of the students' background, learning behaviors, vocational pursuits and their matured feedback. Like wise an in-depth survey encompassing all stake holders including the policy makers is required to evolve a combined strategy towards improving the performance at the national level.

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Grateful thanks to the Management and Principals of the following institutes for their support, special thanks to Students for participating in this massive survey, and Faculties for organizing surveys, gathering the assessment data and assisting in processing:

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3. Kalpataru Institute of Technology (KIT), Tiptur, Karnataka
4. HKBK College of Engineering (HKBKCE) Bengaluru,

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Dr. R. Krishna Murthy had Science education from Central College, Mysuru University, and undergraduate Engineering (Mechanical) education from University College of Engineering, Bengaluru University, Post Graduate (Fine Technics) and Doctoral studies at IIT Madras. Attended many short-term courses, seminars and conferences, published papers in National and International journals including a paper on “The Role of Universities, AICTE and NBA” in the first NBA - World Summit on Accreditation 2012, New Delhi.

Served as Faculty, Principal at erstwhile Government BDT College of Engineering, Davangere, and retired as Joint Director of Technical Education, Karnataka. Had training at National Institute of Educational Planning and Administration (NIEPA), New Delhi, Administrative Training Institute, Mysuru, attended a number of seminars / workshops on ISO, NAAC and NBA. Instrumental in establishing in 1994 an independent Admission Unit - computerized CET Cell system in Karnataka, worked on many Committees of State Government, Universities and AICTE. Was Member of State High Power Committees for fixing intake for Engineering Colleges and Polytechnics respectively during 1989 and 1991. Interested in accreditation process and keenly following the developments taking place.