Students t-test to assess the role of Aptitude classes for Placement among Engineering Students

Mitra K.[1],

Head, Department of Mathematics,
Sahyadri college of Engineering & Management,
Mangalore-575007, Karnataka, India

Vishal Samartha[2],

Director,
Department of Business Administration,
Sahyadri college of Engineering & Management,
Mangalore-575007, Karnataka, India

Sunil Kumar[3]

Assistant professor,
Department of Civil Engineering,
Sahyadri college of Engineering & Management,
Mangalore-575007, Karnataka, India

ABSTRACT

Little empirical evidence exists regarding student's perceptions of aptitude classes in placement among Engineering students and effect of these perceptions on deciding whether aptitude class becomes the most important soft skill for placement. The purpose of this study is to find out the perception of students regarding aptitude classes. The study separately examines the student's perceptions between different class students. Questionnaire has been used, group means were assessed using independent samples *t*-tests to understand factors influencing perceived student perception about aptitude classes towards placement. Responses from 280 engineering students from two different classes with four different branches indicate that overall student perception of aptitude classes towards placement is found to be good to excellent which is a better perception and positive approach by the students. Further student perception score shows that aptitude class plays a major role in placement.

Key words: student perception, aptitude, placement, domain, Engineering students

1. Introduction

Centuries ago it was well quoted by Aristotle that 'Educating the mind without educating the heart is no education at all'. The primary purpose of technical institutions is to emphasis regarding student learning in higher education include student engagement, critical thinking, self-directed learning, authentic learning, team skills development, problem-solving skills and interdisciplinary studies to enhance the capabilities of engineering graduates. Problem-based learning (PBL)

addresses all of these targets. The problem serves as a stimulus for students to identify what they need to learn in order to understand or solve the problem.

The engineering graduates should have adequate competence to perform the designated duties in effective manner. They should be pro-active and committed and also must be team-players and to have passion for learning at the work site.[7] It is observed that majority of engineering graduates are lagging in aptitude skills. Some of the reasons could be their primary education, medium of instruction, rural background, etc. To overcome this inadequacy, presently several methods and mechanisms are available. These may inculcate various generic skills for making a professional student to clear the aptitude test during placement and to orient towards their nature of work to perform duties in the designed way.

Aptitude is something very important especially for students who are trying to enter corporate world or going to write any competitive exams. "Aptitude is not knowledge or skills that one has learned over the years, it's a natural talent that someone posses." however, it can be explored and developed within by us and that can be achieved by understanding and practicing the concepts of aptitude. An individual with good aptitude skills are considered better than others because they are fast at their mind and good at problem solving skills. Thus aptitude has become the most important soft skill for placement these days.[2]

To improve the student aptitude skill, it can be explored and developed within by an individual by understanding and practicing the concepts of aptitude. To improve the aptitude skill, speed is another criteria. This also can be attained by solving as many questions as one can do.

The assessment methods are in use in the education field, has expanded considerably in recent years. The involvement of students as active and informed participants; assessment tasks which are authentic, meaningful and engaging, focus on both the process and products of learning; and moves away from single test. Student perceptions are valuable to our practice because they are authentic sources of first-hand experiences in our classrooms.[1] Students' perceptions about evaluation methods also play a significant role. This study aims to examine evaluation and assessment from the student's point of view. It is observed that students' perceptions about assessment significantly influence their approaches to learning.

The study was carried out to assess the role of aptitude classes towards placement among the engineering students through student's perception with the following objectives:
- To find out the perception of students regarding aptitude classes.
- To compare Students perceptions between different class students.

2. Methodology

Formulation and testing of hypotheses are essential steps in any scientific research. A hypothesis provides the researcher with the necessary guide or direction in searching for the solution to the problem under investigation. A null hypothesis is a hypothesis, which states that "no difference" or "no relationship" exists between two or more variables. It is a hypothesis of "no effect" or "no difference".[4] In the present study, null hypothesis is designed as there is no effect of aptitude classes on placement.

This chapter explains description of the research design, population, sampling, and sample size; the validity and reliability of this investigation are described, as well as the data collection methods and

data analysis. Surveys are one of the most commonly used methods of descriptive research in education and the other behavioral sciences. In this study, survey method is chosen because survey focuses on perception of population, the vital facts of population and their beliefs, opinions, attitudes, motivations and behaviors. The research population for this study is drawn from students from technical institution of Mangalore.

Simple random sampling technique is used in the study because it is the easiest and simplest probability sampling technique in terms of conceptualization and application. We had taken the sample size of 280 from the students of different class and different branch. Primary data is used in this research which is collected with the help of self-administered student perception assessment questionnaire distributed among the students to collect the responses. Questionnaires were validated and tested for reliability. Questionnaire has been used to assess the student perception of aptitude class towards their placement consists of ten questions focusing on USEFULLNESS OF CLASSES, CAREER DESIGN , TIME SPENT, ENJOY, EASINESS, INTEREST, MOTIVATION, LEARNING, STAFF INSPIRATION AND CONFIDENCE GAIN along with demographic data.[2] Respondents were asked to rate their perception of aptitude class with 10 items. Scoring was done by using 5 points Likert scale with scores 1 to 5. The response options were as follows; 1= Strongly Disagree, 2= Disagree, 3= Undecided, 4= Agree, 5= Strongly Agree. All scores fell within the range 1 to 5. Higher scores indicated a better perception, greater positive impact of aptitude classes towards their placement.[8]

Individual and group means were compared using independent samples *t*-tests. Data was analyzed using means, percentages, standard deviations and standard error for all of ten questions focusing on USEFULLNESS OF CLASSES, CAREER DESIGN, TIME SPENT, ENJOY, EASINESS, INTEREST, MOTIVATION, LEARNING, STAFF INSPIRATION AND CONFIDENCE GAIN. Group means were assessed using independent samples *t*-tests to understand factors influencing perceived student perception about aptitude classes towards placement. Using the Statistical Package for the Social Sciences (SPSS), version 15 (Field, 2005) a *t*-test produced group statistics on student perceptions of aptitude classes toward placement based upon second and third year students in engineering.[6]

3.   Results and Discussion

The study was designed to assess the student perception of aptitude class towards placement in technical institutions. Among the 280 students 124 (44.29%) were female.

Table 1. Demographic characteristics of students

	No	Percentage
No. of students	280	100
Male	156	55.71
Female	124	44.29
Class	**No**	**Percentage**
Second year	140	50
Third year	140	50

The Cronbach alpha coefficient was found to be greater than 0.8 for the entire questionnaire used in the study that shows the reliability of the tool.

Table No 2. Percentage of responses for ten domains of student perception assessment questionnaire

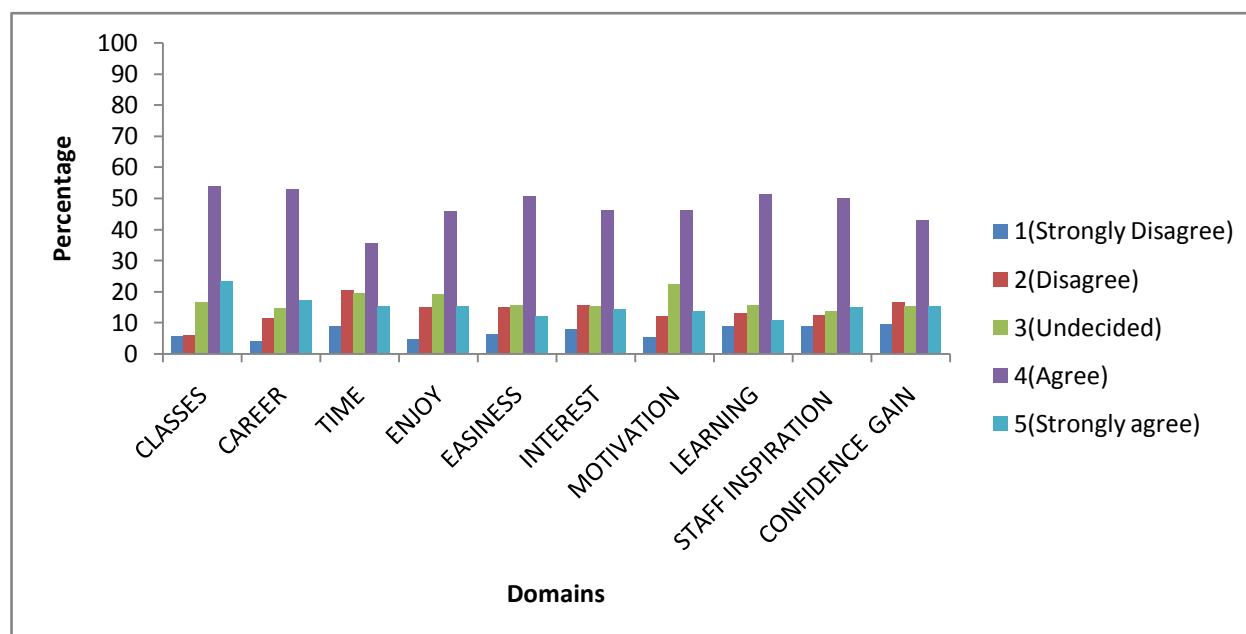| Domains	1(Strongly Disagree)		2(Disagree)		3(Undecided)		4(Agree)		5(Strongly agree)	
	f	**%**	**f**	**%**	**f**	**%**	**f**	**%**	**f**	**%**
Usefulness of Classes	16	**5.7**	17	**6.1**	30	**16.7**	151	**53.9**	66	**23.6**
Career design	11	**3.9**	32	**11.4**	41	**14.6**	148	**52.9**	48	**17.1**
Time spent	25	**8.9**	57	**20.4**	55	**19.6**	100	**35.7**	43	**15.4**
Enjoy	13	**4.6**	42	**15**	54	**19.3**	128	**45.7**	43	**15.4**
Easiness	18	**6.4**	42	**15**	44	**15.7**	142	**50.7**	34	**12.1**
Interest	23	**8.2**	44	**15.7**	43	**15.4**	130	**46.4**	40	**14.3**
Motivation	15	**5.4**	34	**12.1**	63	**22.5**	130	**46.4**	38	**13.6**
learning	25	**8.9**	37	**13.2**	44	**15.7**	144	**51.4**	30	**10.7**
Staff inspiration	25	**8.9**	35	**12.5**	38	**13.6**	140	**50**	42	**15**
Confidence gain	27	**9.6**	47	**16.8**	43	**15.4**	120	**42.9**	43	**15.4**

f= frequency

Figure 1. Percentage of responses for ten domains of student perception assessment questionnaire

Table 2 shows that 23.6% of the students strongly agreed and 53.9% of the students agreed that aptitude classes are useful. 17.1% strongly agreed and 52.9% of the students agreed that aptitude classes will help to design their career. About the domain enjoying of classes, 15.4% strongly agreed and 45.7% of the student agreed. 15% strongly agreed and more than 50% students agreed that classes were found easy and interesting. They expressed that they learnt many things and they were inspired by the staff and it was helped to develop the confidence to get placement. But only 15.4% strongly agreed and 35.7% agreed that they want to spend time for aptitude class.
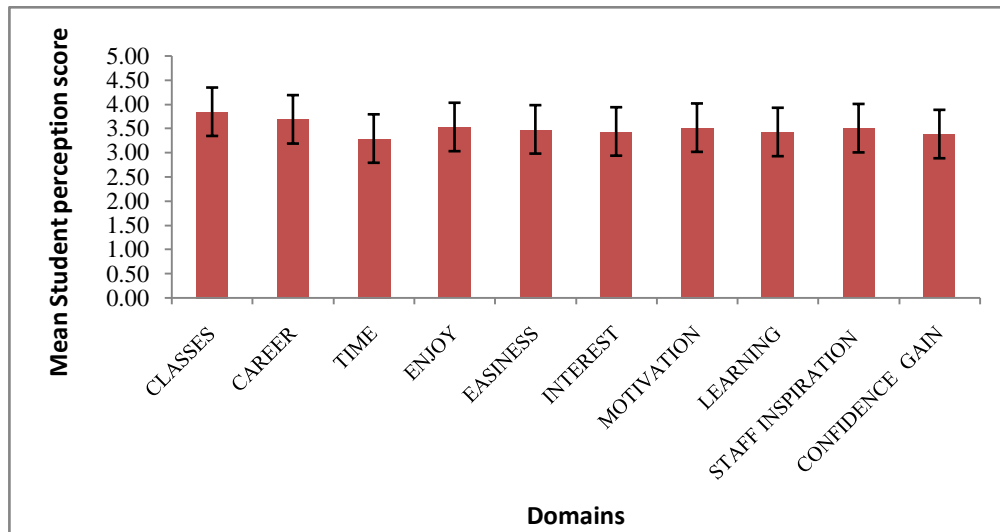
Table 3. The mean student perception score with standard deviation about aptitude classes towards placement among engineering students

Domains	Mean score	±SD
Usefulness of Classes	3.84	1.04
Career design	3.68	1.01
Time spent	3.28	1.21
Enjoy	3.52	1.07
Easiness	3.47	1.09
Interest	3.43	1.16
Motivation	3.51	1.04
learning	3.42	1.12
Staff inspiration	3.5	1.16
Confidence gain	3.38	1.21

Figure 2. The mean student perception score with standard deviation about aptitude classes towards placement among engineering students.

From table 3, the result reveals that all the average scores of ten domain of the student perception assessment questionnaire were above 3 indicating that better perception and positive approach towards the aptitude classes. The Standard deviation of the student perception about ten domains of assessment questionnaires is near to one reveals that there is no much deviation in the perception among the students about ten domains.

Table 4.Comparison of student perception in between the second and third year students

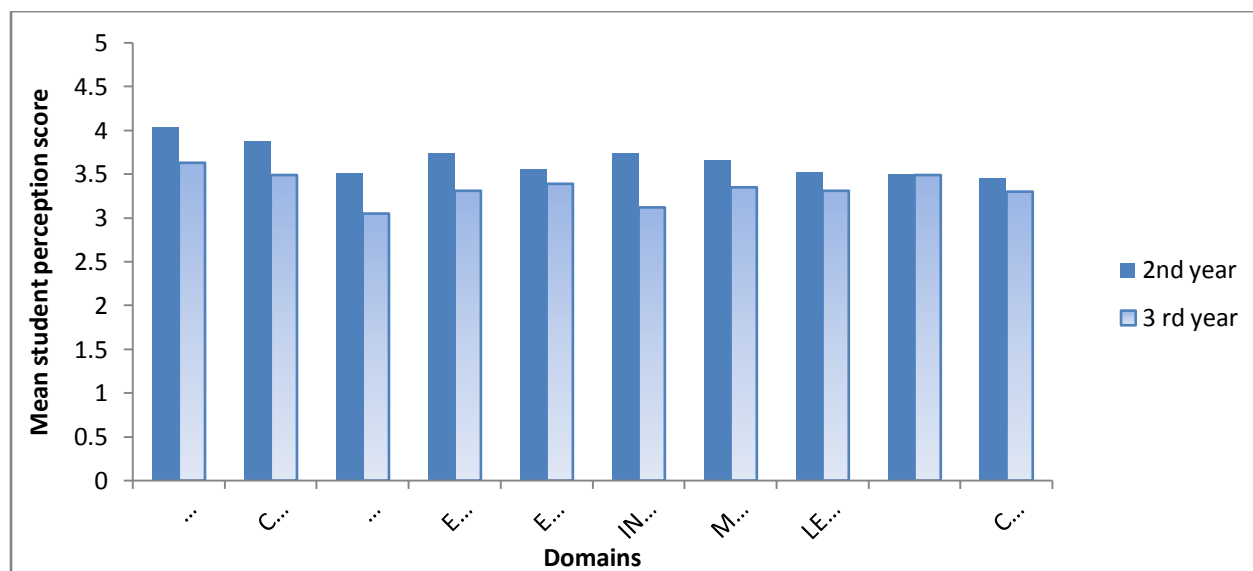| Domains	Year	Mean score	± S D	±SE	Sig.(2 tailed) p <.05	Inference
Usefulness of Classes	Second Third	4.04 3.62	0.92 1.11	0.77 0.93	0.789	No Significant difference
Career design	Second Third	3.87 3.48	0.89 1.09	0.75 0.92	0.07	No Significant difference
Time spent	Second Third	3.51 3.05	1.17 1.21	0.98 0.1	0.02	Significant difference
Enjoy	Second Third	3.73 3.31	1.03 1.06	0.86 0.9	0.9	No Significant difference
Easiness	Second Third	3.56 3.38	1.05 1.12	0.89 0.94	0.174	No Significant difference
Interest	Second Third	3.73 3.12	1.04 1.18	0.88 0.1	0.031	Significant difference
Motivation	Second Third	3.66 3.35	0.98 1.07	0.83 0.91	0.142	No Significant difference
learning	Second Third	3.52 3.31	1.14 1.09	0.96 0.92	0.25	No Significant difference
Staff inspiration	Second Third	3.5 3.49	1.17 1.14	.99 .96	0.16	No Significant difference
Confidence gain	Second Third	3.47 3.29	1.21 1.19	0.103 0.102	0.08	No Significant difference

Figure 3. Comparison of student perception in between the second and third year students

The results of student t-test to find out the significance of the student perception were tabulated as well as graphically presented using mean. Statistically no significant difference was found for USEFULLNESS OF CLASSES, CAREER DESIGN, ENJOY, EASINESS, MOTIVATION, LEARNING, STAFF INSPIRATION AND CONFIDENCE GAIN comparing student perception between second and third

year students. The table 4 reveals this result and it was proved by student t-test ($p < 0.05$). But significant difference was found for TIME SPENT AND INTREST. Since aptitude is not a university prescribed subject, student will not get any curriculum credits from the university. This makes students to loose interest in the aptitude classes. Second year students show better interest, they are ready to spend more time in the aptitude classes as the students have the mathematics classes in this year in which the aptitude classes are also merged . Hence they are forced to attend the classes for attendance, internal exam marks and from the point of passing in the exams the aptitude classes are received with interest whereas the third years do not have mathematics classes, hence attending aptitude classes separately does not attract them.
.

4. Conclusion

The basic philosophy of training of young engineering graduates lies in giving information about ground realities and making them the performer. It is quite necessary for the professional graduates to enhance the aptitude skills to make them fit for the present Industry sector. Result proved that overall student perception of aptitude classes towards placement is found to be good to excellent which is a better perception and positive approach by the students. From the above study it is observed that student perception is excellent tool assess the role of aptitude class towards their placement among engineering students. Further it is concluded that in this study null hypothesis is rejected. Because student perception score shows that aptitude class plays a major role in placement.

Based on the study observation, student felt aptitude class is useful, motivating, important for their career design, improved the confidence, but they are not ready to spend extra time for it. Hence it is recommended to incorporate aptitude class in University syllabus which will be useful for the students to get better placement and to fulfill the need of corporate world in the competitive market. Thus, this aptitude classes are helpful to both graduates as well as the industry.

References:

1. Bennett, S., Maton, K., Kervin, L. (2008). The 'digital natives' debate: A critical review of the evidence, British Journal of Educational Technology, 39(5), pp 775–786.

2. Danko, K., J.C. Duke, and D. P. Franz (1992). Predicting student performance in accounting classes. Journal of Education for Business 67(5), pp 270-274.

3. Kathleen R. Smith, Ed.D (2012) "College Students' Perceptions of Aptitude and Attitude toward Social Media Technology and Technical Computer Technology". International Journal of Business, Humanities and Technology Vol. 2 No. 5

4. Katrien S., Filip D. and Steven J.University of Leuven (KULeuven), Belgium "Students' perceptions about evaluation and assessment in higher education: a review" Assessment & Evaluation in Higher Education, Vol. 30, No. 4, August 2005, pp. 331–347, ISSN 0260-2938 (print)/ISSN 1469-297X (online)/05/040331–17, © 2005 Taylor & Francis Ltd ,DOI: 10.1080/0260293042000318091

5. Nworgu, B. G. (1991). Educational Research: Basic issues and methodology. Ibadan: Wisdom Publishers

6. Pieter S and Dimitri M.,(2006) Teacher professionalism and student evaluation of teaching: will better teachers receive higher ratings and will better students give higher ratings? Educational Studies, Vol. 32, No. 2, June, pp. 201–214

7. Sripala, B. (2011). "Importance of Soft Skills in Engineering Education." Proceedings of Conference on Soft Skills, JKC College, Guntur.

8. Verma, G. & Beard, R. (1981). What Is Educational Research. Londres: Gower.