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Performance of Students of Arts & Science Colleges and Engineering Colleges: A Comparative Study with Special Reference to Virudhunagar District

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Abstract
The goal of the current study is to evaluate employability and academic performance among college students majoring in science, engineering, and the arts, and to look into the relationship between the two. Sixty college students from Tamil Nadu Virudhunagar area made up the sample. The percentage, average, means, S.D., t-test, and ANOVA tests were used to analyse the data. To demonstrate the sample students' level of academic performance, the examination's total score (%) was calculated. The findings showed a substantial difference in the academic performance of graduates in engineering and arts and sciences. Future studies should use self-motivation measures to more fully understand the impact of ethnicity on study effort and academic performance in college.

Keywords: Education at college, academic achievement, students studying engineering and the arts and sciences, and skill.

Introduction

It is generally accepted that pursuing higher education, particularly in engineering, is stressful. Numerous studies have demonstrated a positive correlation between a student's academic performance and their family's socioeconomic status (SES), which is based on the educational attainment of parents, household income, and size of the family (Becker & Tomes, 1976; Duncan & Brook-Gunn, 1999; Haveman & Wolfe, 1995; Loken, 2010; Plug & Vijverberg, 2005). Numerous academics in the fields of sociology, psychology, and economics have been motivated by these findings to investigate how diverse parenting philosophies and techniques affect students' academic achievement across cultural contexts. Students studying engineering typically have a very different profile than students studying other subjects. Several engineering accrediting bodies have outlined the graduate traits that an engineer must possess. These include the ability to use knowledge of mathematics, physics, and life sciences to comprehend, formulate, and solve engineering problems; design and carry out experiments; evaluate and interpret data; create designs that adhere to specifications; create solutions for novel problems that may involve other disciplines; work in interdisciplinary teams; comprehend

the duties of engineers and the moral, social, political, and economic implications of the engineering profession. Thus, engineering stands out from other academic fields due to its heavy emphasis on physics and mathematics together with a variety of domain-specific skills and knowledge.

People are becoming more conscious of the need of pursuing higher education as India rises to prominence among developing countries. Growing expectations in India for improved employment prospects and a severe lack of general category student seats in Indian students who want to study medicine and engineering are quite stressed and anxious because of government professional colleges' different reservation regulations. Across the nation, a sizable number of private universities have been founded in order to satisfy students' ambitions. However, reports published in media (Alvi, 2012; Times of India, 2013) and on the internet (Krishnaswamy, 2011; Chi, 2011) indicate that in the last several years, there has been a noticeable rise in the number of suicide and depression cases in both government and private medical and engineering colleges.

Review of Literature

Education is a lifelong process that aims to maximise each person's potential for academic success by equipping them with a variety of integrated, comprehensive skills. The academic performance of students serves as a barometer to assess how much they have learned over a certain period of time. Every learner is diverse and distinct in every way (Chan, 2001). Also unique to each person are their own learning preferences. According to Wang et al. (2008), these variations are thought to be the elements or determinants influencing students' academic performance. As a result, using the appropriate learning styles is crucial to raising academic performance. Similar results were reported by Baharin Abu (2007), who discovered that when instruction and learning are tailored to the individual learning styles of the students, performance levels rise. When a student's learning style aligns with the course material, it will have a favourable impact on their academic achievement (Yahaya & Abdul Karm, 2003). As a result, students who use effective learning styles typically achieve outstanding academic results and are able to gain admission to universities or employment.

According to the research conducted by Mohamad Jafre et al. (2011), every student should understand their own learning style. To create a teaching and learning atmosphere that is favourable, teachers must also modify their methods to suit the learning preferences of their pupils. In order to create a teaching and learning environment that is favourable to both parties, teachers' pedagogical approaches must also be tailored to the learning styles of their pupils. Therefore, it is essential to understand students' learning patterns and utilise them as a reference or recommendation for educators to be more cognizant of the educational needs of their pupils (Fedler and Spurlin, 2005).

Medical and engineering students experience stress and anxiety for a variety of reasons, including academic ones like a large syllabus, a challenging curriculum, long study sessions, and emotional ones like a lack of peer support, a competitive environment, strict, authoritative, and unsupportive faculty, a lack of recreational opportunities, living away from home, financial difficulties, an uncertain future, issues pertaining to culture and minorities, and a mismatch between ability and expectations (Wolf, 1994; Supe, 1998; Foster & Spencer, 2003; Schneider, 2007). However, there may be additional causes of anxiety in students, such as stress brought on by family issues, a natural disaster, becoming a victim

of crime, physical abuse, illness, or alcoholism. Anxiety related to exams, performances, and choices also affects students unease. Due to the abundance of options available to them, students nowadays confront increased competition, more choice, and less time to weigh their selections or look for the best guidance, which frequently results in anxiety (Downey, 2008).

Numerous recent studies have demonstrated that learning styles have an impact on students' academic performance (Rasimah & Zurina, 2008). Accordingly, in order to improve students' academic performance, it is critical to comprehend their learning preferences (Brown et al., 2006; Graf and Kinshuk, 2007). According to a study conducted in 2011 by Sriphai, Damrongpanit, and Sakulku, in addition to effort and hard work, learning styles' efficacy is considered a component in learning success. Problems in learning are not just caused by the subject's level of difficulty, but rather to the methods and learning styles required for studying (Keefe & Ferrell, 1990). Thus, the goal of this study is to comprehend how learning styles affect students' academic performance.

Objective of the Study

For the purpose of the current inquiry, the following goals were developed:

1. To ascertain and compare the academic performances of graduates in the fields of arts and science and engineering
2. To examine the earnings of graduates in engineering and the arts and sciences
3. To look at how long it took graduates of engineering and arts and sciences to finish their courses
4. To assess the employability of graduates in engineering and the arts and sciences
5. To contrast the socioeconomic backgrounds of graduates in engineering and arts and sciences

Hypotheses

The following theories are formulated and put to the test empirically based on the aforementioned goals.
H1: Students enrolled in engineering and science courses do not see a discernible rise in their salary.
H2: Students enrolled in engineering and arts and science courses have similar economic circumstances.

Methodology

To get accurate data on the chosen topic, the descriptive research approach has been used. In this study, the casual association between variables is being examined.

Respondents

60 undergrads that had completed their college degrees in the Virudhunagar district of Tamil Nadu were randomly sampled to provide data for this study. The majority of the undergrads, who were between the ages of 22 and 25, were enrolled in arts, science, and engineering programmes. Thirty undergraduate students, thirty from arts and science institution and thirty from an engineering college, participated in this study. Of the sixty participants, fifty percent were from the engineering programme and fifty percent were from the arts and science curriculum. Academic Performance was also taken into account; of the participants, 55.83% had strong academic performance, and 44.17% had low academic performance.

Data Collection Method

The study was conducted among college students studying undergrad programmes in engineering and

arts and science in the Virudhunagar district of Tami Nadu. While the curricula of the engineering and arts and science streams are very similar, their learning styles are not. Therefore, in order to draw more succinct and definitive conclusions from the study, these two closely connected streams were chosen. The curriculum for the arts and science stream is primarily theory-based, but the engineering stream, as its name suggests, requires theoretical study with the ultimate goal of using scientific theories to address real-world engineering problems. It was evident that the conceptual knowledge, analytical skills, and problem-solving aptitude that students must acquire of the engineering stream differ significantly from those of the science and arts stream.

Data Analysis

Throughout the course of their college careers, the six research waves recorded the academic progress, attitudes, aspirations, campus activities, and future plans of the students. They also conducted background interviews with the students regarding their economic, social, and demographic features. In order to reduce bias in the selection process, follow-up interviews were used to keep transfer students and college dropouts in the survey. The survey only covered resident aliens or those from the Virudhunagar area.

Sample Size

60 distinct Virudhunagar district graduates were interviewed using a convenience sample technique on a prearranged basis.

Tools for Analysis

Numerous statistical methods, including the percentage, average, mean, standard deviation t-test, and ANOVA test, were used to analyse the data.

Table -1 Average monthly income of the respondents

Classification	Arts & science Graduates		Engineering Graduates		Total
	Frequency	Percentage	Frequency	Percentage	
10000 - 15000	2	5.00	1	3.33	3
15001 - 25000	5	13.33	2	8.33	7
25001 - 40000	11	38.33	10	33.34	21
40001 - 50000	05	16.67	5	15.00	10
Above 50001	07	26.67	12	40.00	19
Total	30	100.00	30	100.00	60

ANOVA-test Inference Source: **Primary data from the field survey.**

Source of Variation	SS	df	MS	F	P-value	F Critical
Between Groups	562	4	140.5	16.72619	0.004241	5.192168
Within Groups	42	5	8.4			
Total	604	9				

Source: Computed.

5.19), the one-way analysis of variance has been used to statically test the null hypothesis H1, which is now the respondents' income generation, based on the results of the ANOVA test. The aforementioned result makes it clear that the estimated value of "F" is higher than the crucial "F" value, rejecting

(16.72>) and accepting the alternative hypothesis. The conclusion is that graduates in the arts and sciences make significantly less money than graduates in engineering.

Table – 2 Course completion of the respondents

Classification	Arts & science Graduates		Engineering Graduates		Total
	Frequency	Percentage	Frequency	Percentage	
Within the duration	26	88.34	23	76.67	49
Duration extended	04	11.66	05	16.67	09
Drop-out	-	-	02	6.66	02
Total	30	100.00	30	100.00	60

Source: Primary data from the field survey.

Table 2 lists the number of students who completed their courses within the allotted time: 26 (88.34%) and 23 (76.67%) for Arts and Science graduates and 04 (8.33%) and 05 (16.67%) for Engineering graduates. Of the students who completed their courses within the allotted time, only 02 (6.66%) of Engineering graduates dropped out of college.

Table 3 Employability of the Respondents

Sl. no.	Employability	Arts & Science	Engineering	Total
1	**Yes**	25	20	45
2	**No**	05	10	15
	Total	30	30	60

Source: Field survey.

When it comes to the selected respondents' occupations, table 3 shows that most 45 (or 75 percent) of them have given a positive attitude.

Table – 4 Improvement in Economic Conditions of the Respondents

Sl. no.	Increase in Economic Condition	Arts & Science	Engineering	Total
1	Yes	22	20	42
2	No	08	10	18
	Total	30	30	60

Source: Field survey.

The economic circumstances of the respondents are shown above, and 42 out of them, or 70%, gave a positive response.

Table – 5 T-test for Improvement in Economic Conditions of the Respondents

Particulars	Improvement	No Improvement
Mean	42	18
Variance	8	8
Observations	2	2
Pooled Variance	8	

Hypothesized Mean Difference	0	
df	2	
t Stat	8.485281	
P(T<=t)one-tail	0.006803	
T Critical one-tail	2.919986	
P(T<=t) two-tail	0.013606	
t Critical two-tail	4.302653	

Source: Computed from the primary Data.

Inference

The computed t-value is 8.48, which is greater than the t critical tail of 2.91 at the 5% level of significance, indicating that the responders and economic benefit are positively correlated. The alternative hypothesis is accepted and the hypothesis H2 is rejected based on the t-test.

Table – 6 Academic Performance of the Respondents

Sl. no.	Academic Performance	Arts & science	Engineering	Total
1	high academic achievers	20	13	33
2	low academic achievers	10	17	27
	Total	30	30	60

Source: Field survey.

Table No. 6 displays the specifics of the chosen graduates' academic performance. The total marks earned in each semester exam are taken into account by the educational institution to determine the students' academic performance; a score of 70% or more is regarded as distinction, while a score of 50% or lower is termed pass class. The same factors are taken into account in the current study to assess academic performance. Pupils with scores of 70% and higher were referred to as "high academic achievers," while those with scores of 50% and lower were classified as "low academic achievers." Of the 120 responders, 33 (55.83%) had excellent academic achievement, while 27 (44.17%) had low academic achievement.

Conclusion and Suggestions

A comparison study was conducted using this research to determine the differences between graduates in engineering and arts and sciences. The universities and colleges uphold the highest standards of academic enterprise and creativity regardless matter whether students are starting their undergraduate studies and seeking a solid liberal arts foundation or are seeking an advanced degree with a professional specialisation. According to the study, there are differences between engineering and arts and science graduates in terms of income, employability, economic status, course completion duration, academic performance, type and character of institution, age, and current position.

Therefore, the study contends that graduates' socioeconomic empowerment depends critically on their

ability to develop their skills. But personal beliefs, societal shifts, and a desire to participate in skill-development programmes are also starting to take on more significance in the placement. To sum up, raising awareness, allocating funds for education, giving opportunities to recent, motivated graduates, and lowering the poverty rate can assist the Indian government and educational institutions in becoming active participants in the global market for cutting-edge technologies.

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