

Online Examinations to Undergraduate Engineering Students: A Case Study in an Autonomous Institution

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Abstract: Undergraduate engineering students are vital part of any University / Institution and the institution should be in a position to show the good direction to them so that they will be placed in the good companies. The campus Recruitment procedure is based on, in-depth knowledge in the subjects and conducted through on line examinations. The conventional examinations based on pen and paper will not give the experience of an online examination. To overcome this drawback the autonomous institutions like ours have introduced the system of online examinations. The case study shows better results in the students' community in the online examination. This will help the students to face the placement drives in a better way in the future.

Keywords: Online Examinations, Results, Placements and Institution.

1. Introduction

In India several engineering institutions creating more number of engineering graduates to meet the demand from IT industry, but the IT industry searches the right engineering graduation in its domain. Generally engineering colleges across India have four academic years spread over 8 Semesters and each semester will have about 90 working days for each course work. At the end of the course, or at the end of 6th Semester, even if they cross eligibility criterion of marks to appear for campus interview, they didn't get the success in the interview, because of not having in depth knowledge in the subjects. To overcome this defect this paper suggests one method of conducting examination in online. This online experiment improves the student's knowledge in the subject more than the conventional examination method. Initially the students are suffered and showed very moderate results only but after the first experience they showed good results. This online examination trains the students to knowledgeable persons and enables them to face and get the success in the On Campus interview.

A. Subjective Paper

The pen and paper way of examination (ie) the subjective paper examination is an outdated format as it just tests the skills of students in simple way without emphasizing on what they understand which is an important aspect and can play a key role in coping them with present days competition. The structure and

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format of descriptive paper needs to be changed into a way which involves the student to present his knowledge in logical and analytical way instead of just straightway of answering (eg).

- (a) Explain the principle of operation of 3 phase slip ring induction motor?
- (b) Explain the operation of full wave rectifier and derive the expression for efficiency?
- (c) Distinguish between bunker and silo with the help of neat diagrams?
- (d) Derive the integral momentum equation to be free convection boundary layer?

For the above questions asked in the end semester examinations, the students may give the answers without thinking but mechanically writing the answers. Surely this won't help them to get success in the campus drive.

The another disadvantage in the descriptive type examination is a good handwriting paper gets good grades even though it had very less subjective contents. Briggs showed that when teachers were given papers to evaluate, the papers with better handwriting received better grades. It shows that only on line examination the knowledge is tested and graded according to the answers.

B. Conventional Objective Paper

The conventional objective paper also a pen and paper based examination and even if it covers minute details of the syllabus, the students with their own style creating physical signals for the answers and finally their system is also somewhat failed on an overall. The pen and paper format examinations system has minimum benefits but more drawbacks. Now there is a need to find out ways and means to strengthen the understanding of the subjects what they are studying in the engineering curriculum.

C. Students Perception

Generally students are in search of getting good marks such that they get a good recognition. In this search students are unable to understand that there will be many loop holes that need to face further. Whenever a college has taken an initiation for

implementing online based examinations without any pre intimated questions, students generally tend to study entire syllabus that is given in the curriculum. Students who are very much interested in getting good marks should read entire syllabus and hence they become skill oriented in the concepts.

D. Structure and functions of online examination

For the purpose of simplification, smooth and easier function, the work of online examination is divided into following three parts.

Pre examination work:

Manuscript of objective type question papers is received from the paper setters.

Actual Conductance of Examination and Assessment:

1. All the objective type questions are arranged in the system.
2. The students sit in the seat according to their Hall Ticket numbers.
3. The students will receive the question in a different order. (eg) The number of questions is 100. The first student will get 50th question as a first question and the second student will get 22nd question as a first question and is go on.
4. The questions are displaying at random, so the conduction of examination is very genuine and no malpractice at all.
5. Evaluate the answers as per the model answer already uploaded in the main system.

Post Examination Work:

1. Process the results on Computers.
2. To declare the results of all the online examinations.
3. To send the result etc to the examination center

E. College Perception

Administrators are updated very sooner and marks will be updated in a fast manner. The performance of a

student can be known and can be improved according to this level. The online examination requires Wi-Fi enabled personal computers with specified simulating software's which autocorrects and post the marks. Such type of online examinations has advantages over paper based examinations. It can include new multimedia, simulation, software test items which give the higher validity in respect of professional work practice.

Some examples of questions asked in the online examination are given below.

1. A 3 phase 400V, 50 Hz induction motor has 4% slip. The frequency of rotor emf will be

(a) 200 Hz (b) 20 Hz (c) 2 Hz (d) 0.2 Hz.

Answer: (c) 2 Hz.

2. The secondary winding of which of the following transformer is always kept closed?

a) Distribution transformer (b) Power transformer

b)(c) Potential transformer (d) Current transformer

Answer: (d) Current transformer.

2. Challenges in the online Examination

Online examinations face reactionary challenges in the technical spheres like the unreliability of computer equipments, the potential depthness for cheating, some hacking process and the possibility of manipulation of answers. Very often some students get panic when they attempt online examinations due to lack of knowledge of operating computers. If this occurs some training should be given to those students before the commencement of the examinations

A. Statistics of online Examination results:

The statistics consists of 960 students approximately from the first year engineering, from Malla Reddy Engineering College [Autonomous], Secunderabad. The students wrote two online examinations for different syllabus in two different semesters. The table shows that in the first examination 298 Students out of 959 obtained less than 50 % marks. And at the same time in the second examination the same students showed better results

(ie) 180 students out of 964 obtained less than 50% marks. The training and counseling to the students improved the results and overall number of students obtained less than 50% marks is considerably reduced. The table. 1 gives the statistical data of the two online examinations for I year / I Semester and II Semester. The graphical representation are given in Figures 1 to 6. It shows clearly about the improvement of the results varies from Ist Semester to IInd Semester.

Table 1. Online examination results of I Year / I Semester

S. No.	Branch	I Semester Examination		
		No. of Students Registered	No. of Students got < 50 % marks	In %
1.	Civil	179	117	65.30
2.	EEE	61	07	11.40
3.	MECH	241	85	35.20
4.	ECE	180	17	09.40
5.	CSE	240	36	15
6.	Mining	58	36	62
TOTAL		959	298	31

Table 2. Online examination results of I Year / II Semester

S. No.	Branch	II Semester Examination		
		No. of Students Registered	No. of Students got < 50 % marks	In %
1.	Civil	183	69	37.70
2.	EEE	61	02	03.20
3.	MECH	241	69	20.30
4.	ECE	180	11	06.10
5.	CSE	240	14	05.80
6.	Mining	59	35	59.30
TOTAL		964	180	18.60

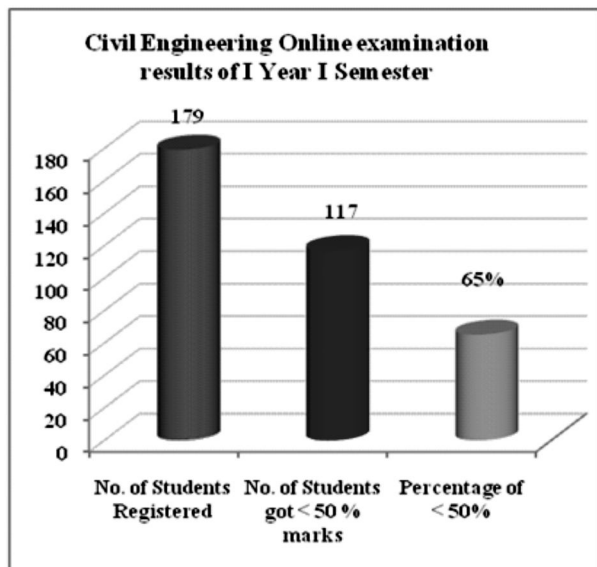


Fig. 1a Civil Online Examination Results I Semester

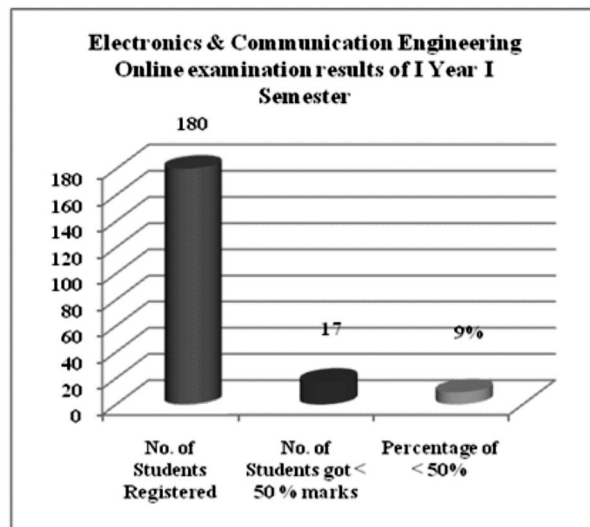


Fig. 2a : ECE Online Examination Results I Semester

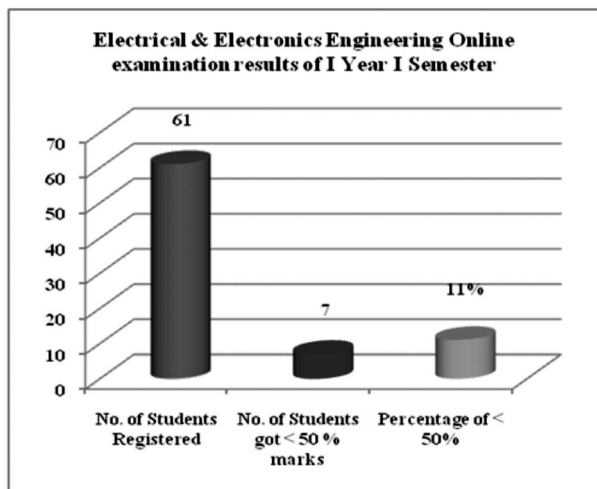


Fig. 1b EEE Online Examination Results I Semester

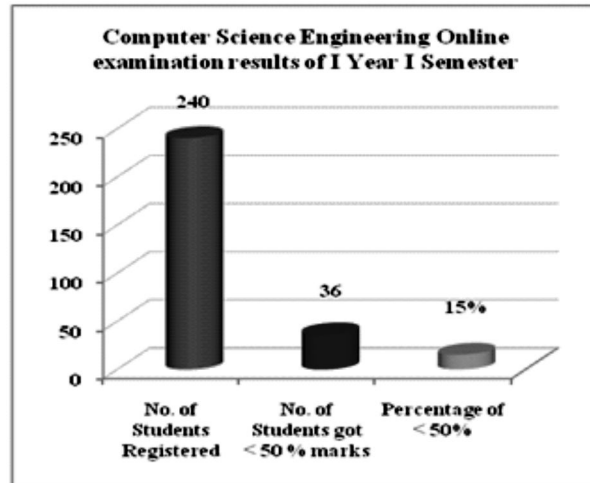


Fig. 3a CSE Online Examination Results I Semester

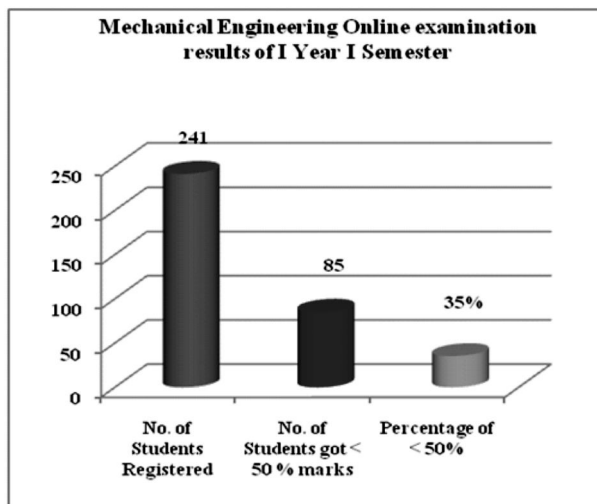


Fig. 2a MECH Online Examination Results I Semester

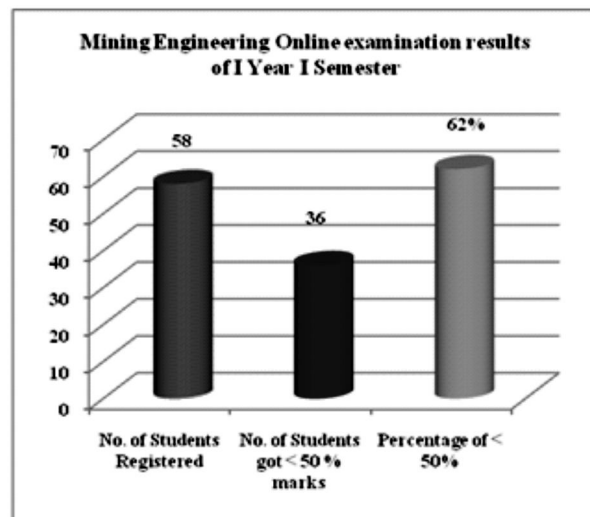


Fig. 3b Mining Online Examination Results I Semester

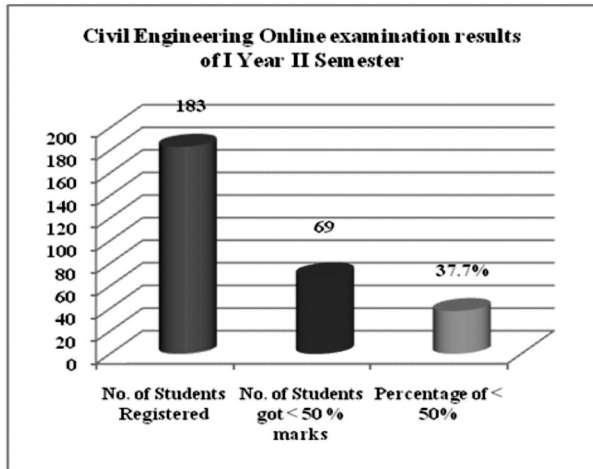


Fig. 4a Civil Online Examination Results II Semester

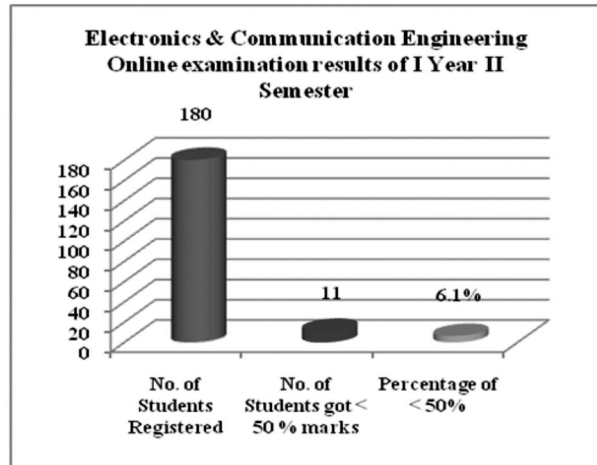


Fig. 5b ECE Online Examination Results II Semester

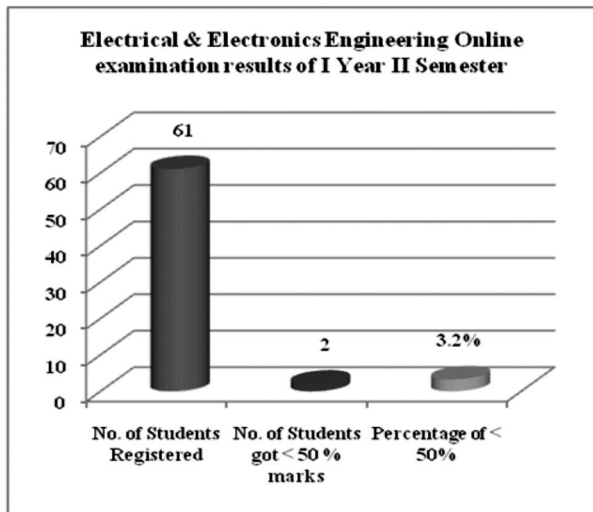


Fig. 4b EEE Online Examination Results II Semester

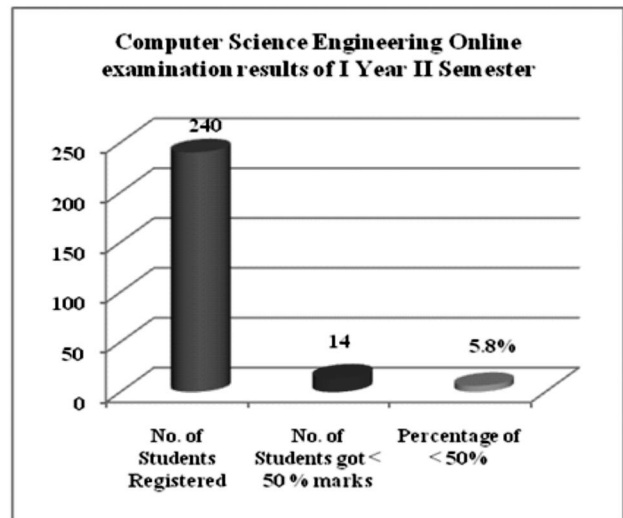


Fig. 6a : CSE Online Examination Results II Semester

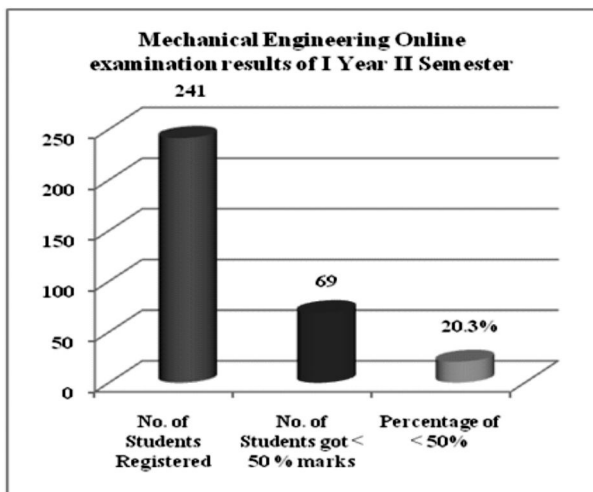


Fig. 5a MECH Online Examination Results II Semester

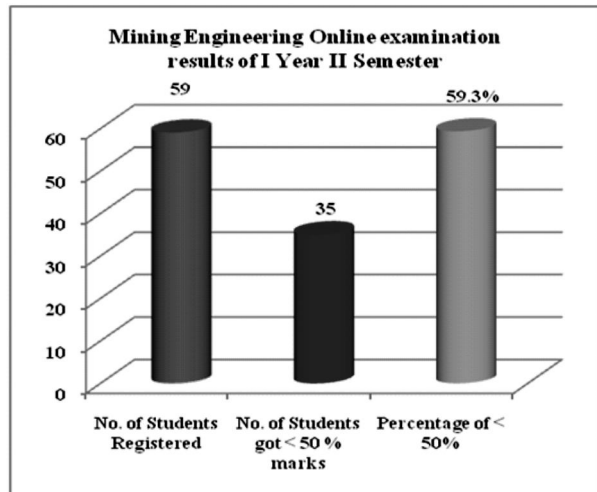


Fig. 6b Mining Online Examination Results II Semester

3. Results

As every coin has two faces, both the examination systems have their own pros and cons which are listed below.

- Online examinations are extremely beneficial for the present day needs as all the competitive examinations are conducted through online system.
- The occurrence of malpractices are fairly less in online examinations as there are different sets which are not there in offline examinations.
- Some students may get panic in the beginning but anyway it will be overcome in due course but in offline there is no such problem.
- Instant results are obtained in online examinations whereas in off line examination time is needed to declare the results.
- Manipulation of answers is possible in online examinations where as it is not possible in offline descriptive examinations.
- In off line examinations even if the questions is very tough or not to know, they may write the nearest answer but in the online examination if they know the correct answer then only it is possible to attempt.
- The offline help the students to get marks but not the knowledge, but the online examination helps the students to improve the knowledge and get good grades also.

4. Conclusion

The conventional offline examination has its own advantages of testing the knowledge by means of asking the question to derive the equations, solving the problem by mathematical analysis and it improves the communication skills. On the other hand, on line examination has testing the sharpness of the subject knowledge, forcing the students to study the full

syllabus and its add-on contents. Online examination when compared with conventional offline examination increases the beneficiary to the student's community.

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