

## **Perception of online lecture recordings: A case study with undergraduate commerce students in the course of Mathematics & Statistics.**

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### **Abstract**

*Due to the COVID-19 global pandemic, the traditional physical lectures are suddenly replaced with web based virtual online lectures using learning management systems (LMS). Students are provided with online live lectures along with the lecture recordings through LMS. The objective of this paper is to analyze perceptions about online lectures recordings perceived by the different groups of undergraduate commerce students enrolled for first year Mathematics & Statistics. Some of these students have selected an elective subject in place of Mathematics & Statistics at their higher secondary level. The present paper is an outcome of a comparative analysis of students having mathematical background and students do not having mathematical background at the higher secondary level.*

**Keywords:** *Online lectures, recordings, attendance, e-learning.*

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### **Introduction**

Before Covid-19 pandemic teaching-learning method was mostly traditional physical lectures whereas online education was not common. In March 2020 the Covid-19 pandemic resulted into nationwide lockdown & it affected education sector also. It completely suspended the traditional teaching-learning method and online lecture system implemented and practiced for entire academic year 2020-21. The most of the students have completed their school education with traditional method and suddenly they need to adopt online learning mode. Different education institutes

made their own arrangement for this online teaching-learning system. This is a case study with first year undergraduate commerce students in the course of Mathematics & Statistics. Learning Management System provided to these students includes lecture recordings along with live online lectures.

### **Need of the study**

As technical subject Mathematics & Statistics need more interaction between student and teachers. A study need to be conducted with students learning Mathematics & Statistics online & usefulness of lecture recordings.

Students have different mathematical backgrounds. Some of the students under study have opted out Mathematics & Statistics after Secondary School where as remaining have continued at their higher secondary level. Perception of lecture recordings among these groups of students will be compared.

Proposed Blended Mode of Teaching and Learning also focuses on multi-modal approaches (face to face learning, online learning and distance or virtual mode) where lecture recordings will be made available to the learner.

### **Literature Review**

It was found during relevant literature search that the Perception of online lecture recordings not studied with the students of St. Andrew's College. However the review tried to fetch relevant studies about the present topic.

According to Fernandes, Maley, Cruickshank (2008), Use of online lectures as a replacement for face-to-face lectures may be inappropriate in the biological sciences which require in-depth understanding of mechanistic and fundamental concepts. Yeung, Raju & Sharma (2016) concluded that lecture attendance has not been adversely affected by the introduction of Web Based Learning Technology, student preferences have not swung

wildly away from Face to Face lectures to lecture recordings in that they express both strengths and shortcomings of Face to Face lectures and are passionate about lecture recordings. Harris et al.(2021) investigated student's preference for (a) synchronous lecture delivery, perceptions of online lectures, and self-reported lecture-watching behaviors'. Harris et al. (2021) results demonstrated that students enjoy both the structured nature of live lectures and the flexibility of pre-recorded lectures. Live lectures are useful at instilling social connections, but pre-recorded are more useful for understanding subject content. Students showed a strong preference for a hybrid approach to online learning of both live and pre-recorded teaching sessions. Bhattarai et al.(2021) conducted a Descriptive Cross-sectional Study on Perception of Online Lectures among Students of a Medical College in Kathmandu. Bhattarai et al.(2021) concluded that most of the students had a positive attitude towards e-learning when compared to similar studies. Dwivedi et al.(2021) concluded online lectures are not the substitute of face-to-face classroom lectures. Contrarily, if we solve the connectivity issues, electronic device issues, software problems, language issues etc., then only online lectures can reach up to the level of face-to-face classroom lectures.

Deshpande & Salunke (2021) studied the effectiveness of online lectures on higher education students and their perceptions. The obscurity they went through, the apprehensions of online learning and awareness of different solutions among them. It also delineates whether there is a need for individualized education system.

### **Objectives**

- I. To analyze perceptions about online lectures recordings perceived by the undergraduate commerce students enrolled for first year Mathematics & Statistics.
- II. A comparative study among students having mathematical background and no mathematical background at the higher secondary level.

### **Scope & Limitations**

This study included respondents from First Year Bachelor of Commerce students. All of them used same Learning Management System. Majority respondents were from urban area where internet connectivity and IT infrastructure is not a major issue. There is possibility that learners from rural area may

have different perceptions about lecture recordings.

### **Research Methodology**

A structured questionnaire was designed to study perception of lecture recordings. Learners were asked to respond to online Google form. Data is collected from 93 undergraduate (UG) students of first year B. Com. using online Google form. A descriptive analysis is performed based on these questions.

Z-test is used to compare perceptions of among students having mathematical background and no mathematical background at the higher secondary level.

### **Null hypothesis: $H_0$**

There is no significant difference between usefulness of lecture recordings among students having mathematical background and no mathematical background.

### **Alternative hypothesis: $H_1$**

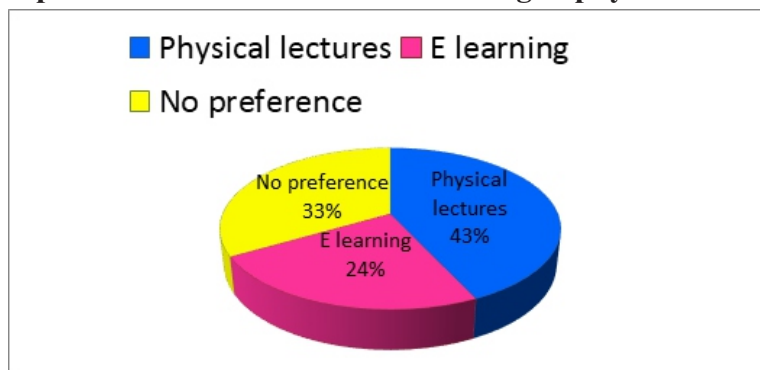
There is significant difference between usefulness of lecture recordings among students having mathematical background and no mathematical background.

### Major Findings & Discussion

**Table 1. Studied Mathematics & Statistics at Higher Secondary level.**

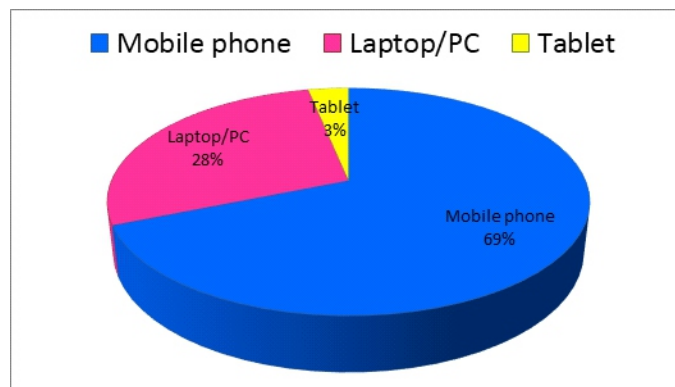
|       | Frequency | Percent |
|-------|-----------|---------|
| Yes   | 43        | 46.24%  |
| No    | 50        | 53.76%  |
| Total | 93        | 100.00% |

**Graph 1. Preference between E-learning & physical lectures**



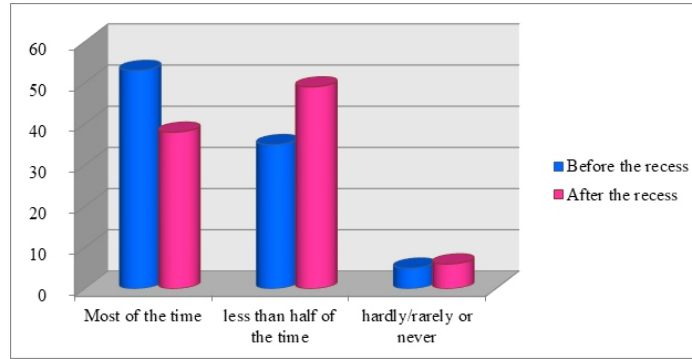
Regarding open ended question about the preference of mode of learning, the most of learners preferring physical lectures are concerned with understanding and concentration. The learners preferring E-learning is due to safety due to Covid-19 and travelling time.

**Graph 2. Device is used to attend online lectures**



The learner's concentration is depends on the screen size of the device. The most of the students are attending online live lectures on their mobile phones.

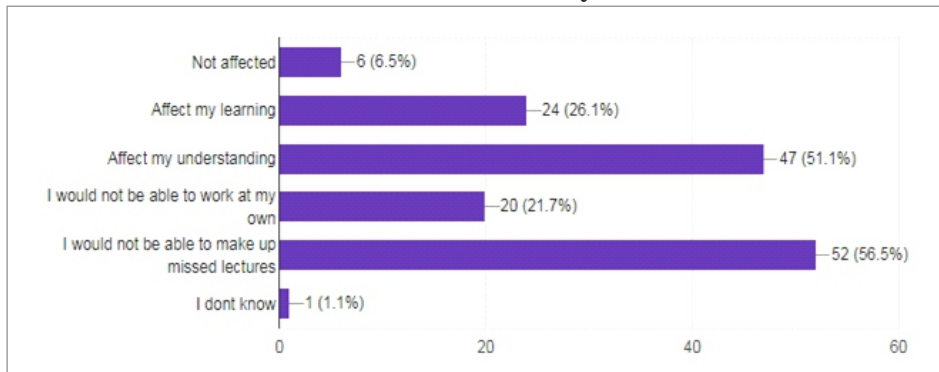
**Graph 3. Concentration during online live the lectures**



Daily live lectures are scheduled for more than 5 hours with 15 minutes recess break. It is observed that students are concentrating better during lectures which are scheduled prior to recess (morning lectures). Lecture recordings are useful for the late lectures.

Only 4% learners had never accessed online lecture recordings from LMS.

**Graph 4. If these lecture recordings were taken away next semester, how would it affect you?**



There is significant percentage of learners who thinks absence of lecture recordings will affect their understanding. More than half learners are using lecture recordings to make up missed lectures.

Only 16% learners disagreed with combination of traditional physical lectures along with online lecture & recordings in current covid-19 situation.

A group of student has opted out Mathematics & Statistics during their higher secondary education for last two years. Now they need to study Mathematics & Statistics as a compulsory course.

**A comparative study among students having mathematical background and no mathematical background at the higher secondary level.**

For testing purpose respondents are asked to give their opinion on five point agreement scale usefulness of lecture recordings The codes were as follows

2: Strongly agree

1: Agree

0: Neutral

-1: Do not agree

2 : Strongly disagree

Hypothesis Test: Independent Groups (z-test)

| Group 1 | Group 2 |           |
|---------|---------|-----------|
| 1.23    | 1.16    | mean      |
| 0.81    | 0.79    | std. dev. |
| 43      | 50      | n         |

0.073 difference (Group 1 - Group 2)  
0.167 standard error of difference  
0 hypothesized difference  
0.43 z  
.6638 p-value (two-tailed)

F-test for equality of variance  
0.66 variance: Group 1  
0.63 variance: Group 2  
1.05 F  
.8618 p-value

**Observations**

From the previous table it is observed that p value is 0.6638 which is greater than 0.05. Hence we do not reject null hypothesis at 5% level of significance.

**Interpretation**

On the basis of this data it can be inferred that there is no significant difference between usefulness of lecture recordings among students having mathematical background and no mathematical background at the higher secondary level.

**Conclusion**

Lecture recordings are additional help for the students to understand subject as most of respondents are attending online live lectures through cell phone.

Student's perception is same among students having mathematical background and no mathematical background at the higher secondary level.

Further study need to be conducted covering learner's population from various streams and other types of practical oriented subjects.

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