ADVANCED DATA ANALYTICS USING A/B TESTING
INDUSTRY: ED-TECH

AN EMPIRICAL STUDY OF USING SOCIAL MEDIA FOR FACILITATING EFFECTIVE STUDENTS' LEARNING

About the Research Project-

This one-year research project was conducted in 2015-16 as a part of Innovation Project of Delhi University. It was funded by Central Government.

The findings of the study were presented at Department of Commerce, Delhi School of Economics.

AWARD-

- '**Best Paper Award**' in 5th Annual Commerce Conference organized by Department of Commerce, Delhi School of Economics, Paper Title - "Transforming education sector through digital technology: opportunities and challenges for start-ups", 4th November 2016.

PUBLICATION

- GUPTA, D.(2018).Using Social Media In Higher Education: Enhancing Students' Learning And Engagement. Issues and Ideas in Education 6(1):29-39, DOI:10.15415/iie.2018.61002

A/B TESTING

- STEP 1: HYPOTHESIS FORMATION
- **H1: Encouraging the use of Social media for educationally relevant purposes has positive impact on marks of students (Academic Performance)?**
- **H2: Encouraging the use of social media for educationally relevant purposes has positive impact on students' engagement?**

- STEP 2 DATA COLLECTION
- Data was collected from a sample of **90 students** at Daulat Ram College, University of Delhi during the summer semester through **an online survey** in the college. 45 students were randomly assigned to the experimental group and 45 to the control group

- STEP 3 CREATING MEASURES
- **Engagement scale**: Pre- test and post- test engagement scale. Engagement was measured using a 24-item scale based on the National Survey of Student Engagement.

- **Intensity of use of social media scale**–includes items like no. of friends on social networking site, minutes per day spent on social networking site etc.

- **STEP 4 RESULTS**
- **RESEARCH HYPOTHESIS 1:**
- Table shows that the experimental group had significantly (P value- 0.014) higher academic performance as compared to control group.

- **Pairwise Comparisons**

Pairwise Comparisons

Table-2 Fixed Effect ANOVA Model

(I) Group	(J) Group	Mean Difference (I-J)	Std. Error	Sig.[b]	95% Confidence Interval for Difference[b]	
					Lower Bound	Upper Bound
1	2	-1.450*	.575	.014	-2.594	-.306
2	1	1.450*	.575	.014	.306	2.594

Based on estimated marginal means

*. The mean difference is significant at the .05 level.

b. Adjustment for multiple comparisons: Least Significant Difference (equivalent to no adjustments).

- **Experimental group had significantly higher academic performance as compared to control group.**

- RESEARCH HYPOTHESIS 2:

Table-4 Fixed Effect ANOVA model

Dependent Variable: Engagement

(I) Group	(J) Group	Mean Difference (I-J)	Std. Error	Sig.[b]	95% Confidence Interval for Difference[b]	
					Lower Bound	Upper Bound
1	2	-4.575*	1.789	.013	-8.137	-1.013
2	1	4.575*	1.789	.013	1.013	8.137

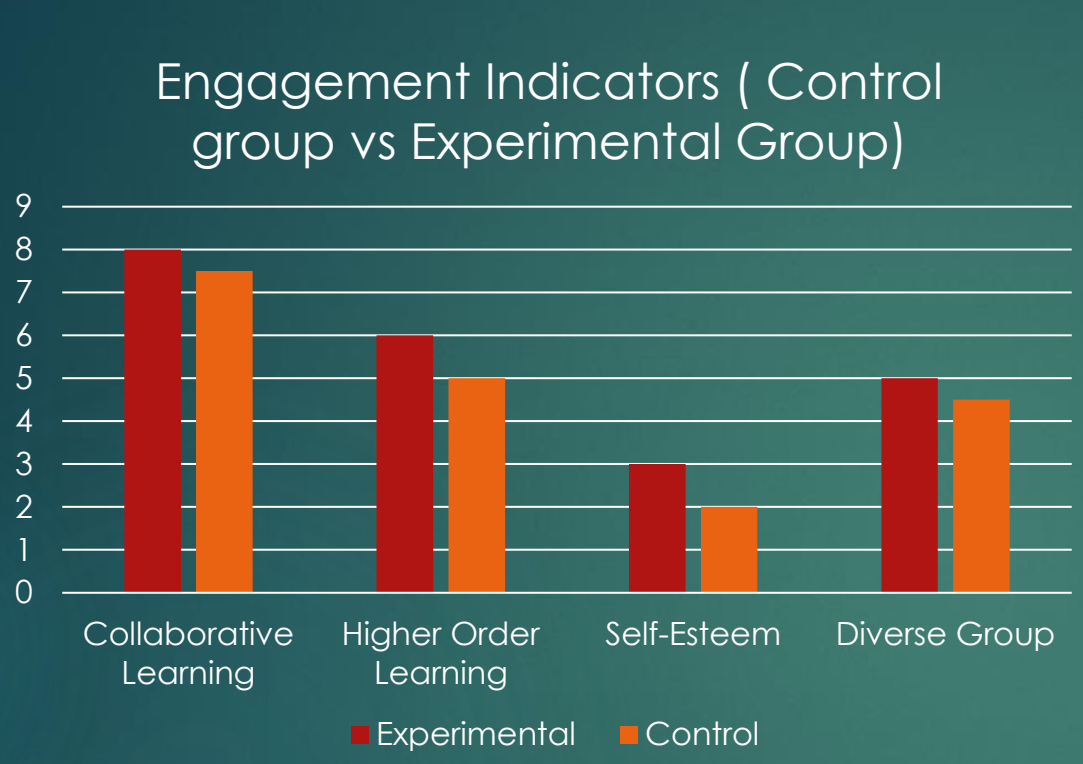
Based on estimated marginal means

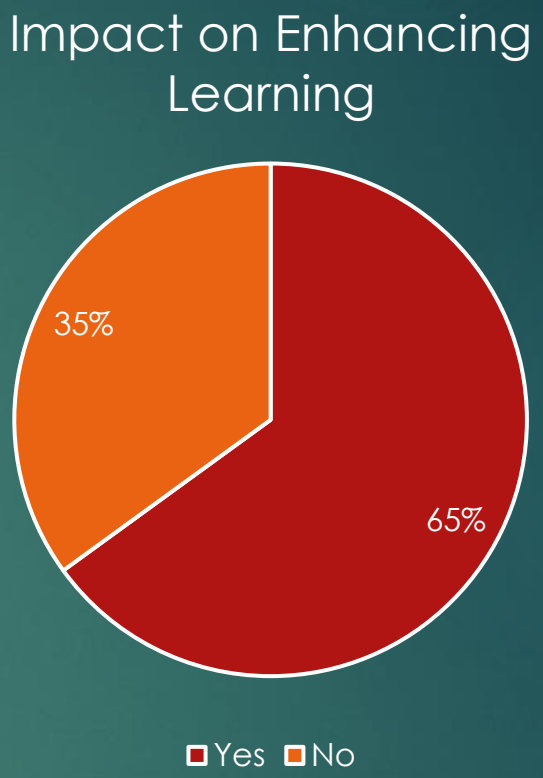
*. The mean difference is significant at the .05 level.

b. Adjustment for multiple comparisons: Least Significant Difference (equivalent to no adjustments).

- **Experimental group had significantly higher difference in engagement scores as compared to control group**

DATA VISUALIZATION





Control Group
45

Experimental Group
45

- INSIGHTS AND RECOMMENDATIONS-

- ONLINE COURSES ARE FUTURE OF EDUCATION
- EDTECH STARTUPS ARE EXPECTED TO PLAY A KEY ROLE IN DELIVERING EDUCATION IN INDIA.
- GLOBALLY, SOME OF THE TOP STARTUPS INCLUDE US-BASED COURSERA, AND EDX, BOTH OF WHICH ARE PROVIDERS OF MASSIVE OPEN ONLINE COURSES
- UDEMY, PROVIDES A MARKETPLACE FOR ONLINE COURSES, AND BRIGHTSPACE, WHICH PROVIDES A SAAS-BASED LEARNING PLATFORM.
- NON-PROFITS LIKE KHAN ACADEMY HAVE MADE PIONEERING EFFORTS IN LOWERING BARRIERS TO EDUCATION BY PROVIDING IT FOR FREE, THROUGH YOUTUBE VIDEOS.