VILNIUS TECH
Vilnius Gediminas Technical University

Business, Management and Economics Engineering
ISSN: 2669-2481 / eISSN: 2669-249X
2024 Volume 22 Issue 01

DIGITAL TRANSFORMATION IN HIGHER EDUCATION: A STUDY ON THE EFFECT OF EMERGING MEDIA TECHNOLOGIES ON STUDENT PERFORMANCE

Aregela Suchismitha
Assistant Professor, KSRM College of Engineering (Autonomous)

D. Ramyasree
Assistant Professor, KSRM College of Engineering (Autonomous)

Dr. L. Rajani
Academic Consultant, Yogi Vemana University, Kadapa

Dr. Ellaturu Nagaraju
Assistant Professor, CMR University, Bangalore

Abstract
The current study primarily examined how various technologies can be employed effectively in higher education and how these new tools affect students' academic performance. Convenience sampling was used to gather 350 responses from students associated with various Andhra Pradesh colleges that were linked with universities. The theories were tested using Jamovi-assisted multiple regression analysis. As per the findings, every emerging technology was considerably enhancing the academic achievement of the kids. In conclusion, the research provided significant insights into the application of these new technologies in higher education institutions.

Keywords: Digital transformation**,** Emerging media technologies, student performance, higher education, **e**-learning

INTRODUCTION

Education is a lifelong investment that involves acquiring knowledge and skills at various stages, from primary school to university. It enables individuals to develop their critical thinking abilities, fosters a mature environment, and provides a foundation for personal growth. The educational landscape is constantly evolving and adapting to technological advancements. As rightly pointed out by IIJMT (2011), technology-related developments are major drivers of change that have significantly

Emerging media is the result derived from the non-digital media conversion to digital interactive partaking communication. Emerging media is revolutionizing the shape of communication into virtual land. Various types of Emerging media technologies include wiki, blogs, social networking sites such as Facebook, Twitter, and so on, video sharing sites such as you tube; microblogs are become friends among young generations today. New media had

passed from simply being the medium of enjoyment to the world of information. Young human beings now no longer simply use new media for networking with pals and gaming however have imbibed peer gaining knowledge of, public participation, and information-looking for behavior. These sorts of new media are significantly utilized by college students for the gaining knowledge of manner as a complement to books and features caused the debate and important wondering amongst college students. With the brand, new media generation at their fingertips university college students are brought on for realistic information of theoretical elements and business attitude on their syllabus subjects widening their information skylines.

According to Kulik's Meta-analysis study (Grinager, 2006), it was found that students who were using computers had a better test of achievement. It was also found that students learn in less time and develop positive attitudes of the working among the students after using new media technologies. Sivin-Kachala's review of the research (Crede et al., 2015) analyses that, students who learn in the technological rich environments have experienced the positive effects of the student's achievement and increase in the self-concept. Also, the use of technology has gradually changed the teacher teaching practices. It has also increased the cooperative group work and progressively increased the higher-level reasoning and problem solving. Blending between the traditional and technological teaching has increased the student grades and student performance, it also has increased the instructional time and cross-age tutoring programs (Schacter, 1999).

Andhra Pradesh is the hub for higher education and holds the fifth position in having higher educational institutions in India whereas it holds the fourth position with 7.48 crores of subscriber base (Trai Report, 2016). By realizing the drastic increase in the usage of mobile phones, many universities are implementing new media technologies in their classroom teaching. The ministry of human resource development, department of higher education, India is changing the ways of teaching by using technology. Hence, the present study mainly focuses on the effective use of the different technologies and the impact of those technologies on student performance in higher educational institutions in Andhra Pradesh.

LITERATURE REVIEW

According to the Oxford dictionary, student performance is defined as the student doing well academically and to what extent the student, teacher, and institution have achieved the educational goals. There are different indicators of student performance which include knowledge, comprehension, application, analysis, synthesis, and evaluation. Knowledge is defined as a remembrance of the previously learned content. Comprehension means grasping the meaning of information.

The application includes applying the knowledge to actual practical situations. The analysis is defined as breaking down the ideas into simpler parts and analyzing how the parts are related to each other. Synthesis comprises rearranging component ideas into a new world. Evaluation refers to the making based on internal or external standards.

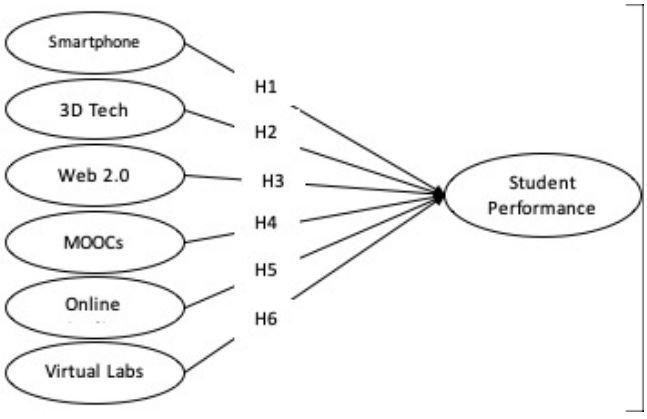
The performance indicators which were included in this study for experimentation were: effective communication with faculty, ease to understand, teamwork, critical thinking, engagement in making, sharing, and collaborating with other students, exploring new concepts in-depth, improving creative outcomes, engaging in solving the difficult tasks (Cabrera, 2001). Along with these indicators marks of the students were also considered one of the most important factors.

Hardy (2013) quoted that "E-Learning is revolutionary, it breaks down barriers, it transforms lives and business and it will soon be a $107-billion global business". Technology is one key aspect of education in present globalization. Technology had brought an immense change in the field of the education system. Technology had expanded the boundaries of learning beyond the four-walled classrooms to the distant places of the world with its exclusive characteristics. An innovation had led to the transformation of education from the traditional learning system. New media technology had transformed the entire world into the digitized media and made it accessible.

Noraddin & Kian (2014) stated many modules were introduced for making the new media technologies more interactive in classroom teaching. One such example was created using author ware, which was user-friendly yet power-packed with features for interactive course content creation and it was observed that the incorporation of multimedia into teaching had enhanced the learning process. They also perceived that in traditional teaching only one medium is used, but using multimedia, teaching is done by using the different mediums like using text, graphics, animation, sound, and video. The use of new media technologies enhanced the student-centric and self-directed learning mode among students. It was also observed that the curriculum content delivered to students was innovative and attractive.

Greener and Wakefield, (2015) found that the web 2.0 technology emphasizes the active role of the learner. They also found that students disliked the inconsistent offer of technologies to support learning and wanted staff to offer a broader range of digital learning support. The research was conducted on teachers by Tyagi (2012) states that many professors think web 2.0 technologies help in broadening the faculty perspective, drawing collective knowledge, facilitate instant problem solving and it also helps to improve knowledge sharing and collaboration.

Proposed Research Model



Hypotheses:

H1 Use of smartphones positively and significantly influences student performance
H2 3D technologies positively and significantly influence student performance
H3 Use of google apps positively and significantly influences student performance
H4 Use of web 2.0 technologies positively and significantly influences student performance
H5 Massive open online courses positively and significantly influence student performance
H6 Use of E-library positively and significantly influences student performance
H7 Use of game simulations in the classroom positively and significantly influences student performance
H8 Use of different online resources positively and significantly influences student performance
H9 Use of virtual laboratories positively and significantly influences student performance
H10 Different social networking websites positively and significantly influences student performance

MATERIALS AND METHODS

The study shed light on the effect of new media technologies on the student's performance in Andhra Pradesh. The approach of research is quantitative. The research is descriptive and experimental in nature. A Convenience sampling technique has been adopted for the study to collect the data from the students of different university-affiliated colleges' by covering public and private colleges in Andhra Pradesh. A structured questionnaire with essential dimensions of new media technologies used in the classroom and student performance is used to collect the data. A total of 500 questionnaires were distributed and received 402 questionnaires that are suitable to perform the analysis. Validity, reliability, and descriptive and inferential statistics were applied with help of Jamovi 2.2.5.

RESULTS AND DISCUSSION

A regression model was established by comprising the emerging media technologies and student performance, for assessing the hypotheses. The student performance was predicted through new media technologies as an independent variable. The results pertinent to the model are resented below.

Regression Model Fit

The R^2, Adjusted R^2, and standard error were used to examine the model fit of the regression model.

Table 1 Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate
.655[a]	.530	.520	.522787072718922

a. Predictors: (Constant), 1,2,3,4,5,6,7,8,9,10

The results of the regression model impact of new media technologies on student performance are presented in the above table1. R^2 explains the proportionate variance explained by dimensions of new media technologies in the prediction of performance among students of higher education colleges. It means that 0.530 or 53% of the variation in student performance is explained by new media technology dimensions.

Model Reliability and Validity

Reliability and validity are the two important parameters to decide the correctness of the regression model. the values of item factor loadings and Cronbach alpha explain the reliability and validity of the model.

Table:2 Reliability and Validity

Factor	Item	Factor Loading	Average Factor Loading	Cronbach Alpha
Emerging Media Technologies	Use of smartphones	0.880	0.819	0.825
	3D technologies	0.878		
	Use of google apps	0.865		
	Use of web 2.0 technologies	0.823		
	Massive open online courses	0.795		
	Use of E-library	0.852		
	Use of game simulations in the classroom	0.812		
	Use of different online resources	0.801		
	Use of virtual laboratories	0.799		
	Different social networking websites	0.785		
Student Performance	Effective communication with faculty	0.825	0876	0.812
	Teamwork	0.814		
	Critical thinking	0.801		
	Engaging, sharing, and collaborating	0.792		
	Improved marks	0.752		
	Explore new ideas	0.721		

The reliability and validity results of the regression model and new media technologies on student performance are presented in above table 2. Reliability was adjudged using the Cronbach alpha value and convergent validity is decided with factor loadings and average factor loadings.

Item factor loadings were found >0.50, average loadings were also found the same shows that the model possesses convergent validity. The Cronbach alpha value >0.70 denote that model's reliability. Hence, it is deemed that the regression model possesses reliability and validity.

Regression Model Significance

ANOVA is performed to identify the statistical significance of the model. ANOVA results are presented in below table 3. It explains the overall significance of the regression model impact of new media technologies on student performance. Residual values, F value, and p values are used to judge the significance of the model.

Table 3: ANOVA

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	81.330	5	11.619	42.511	.000[b]
Residual	107.956	145	.273		
Total	189.286	149			

a. Dependent Variable: JP

b. Predictors: (Constant), 1,2,3,4,5,6,7,8,9,10

The results of the ANOVA show that the residual sum of squares between actual and estimated 51.527 with F statistic 32.173 is significant as the resulting p-value of 0.001 is less than 0.05. So, the model is found statistically significant and it can be said that at least one of the new media technology dimensions is going to be significant.

Regression Model Results

The regression results are presented in table 4 with path estimates and significant values. Standardized estimates, t statistic, and p values are used for assessing the path effects in the linear regression model.

Table 4: Coefficients

	Unstandardized Coefficients		Standardized Coefficients		
Model	B	Std. Error	Beta	t	Sig.
(Constant)	1.197	.134		8.920	.000
Smartphone	.087	.028	.139	3.141	.002
3D Technologies	.052	.024	.088	2.149	.032
Google Apps	.011	.020	.021	.538	.591
Web 2.0	.050	.021	.084	2.339	.020
MOOCs	.123	.033	.183	3.718	.000
e-library	.020	.027	.036	.748	.455
Game Simulations	.019	.028	.032	.669	.504
Online Resources	.148	.033	.218	4.462	.000
Virtual Laboratories	.157	.032	.238	4.916	.000

a. Dependent Variable: Student Performance

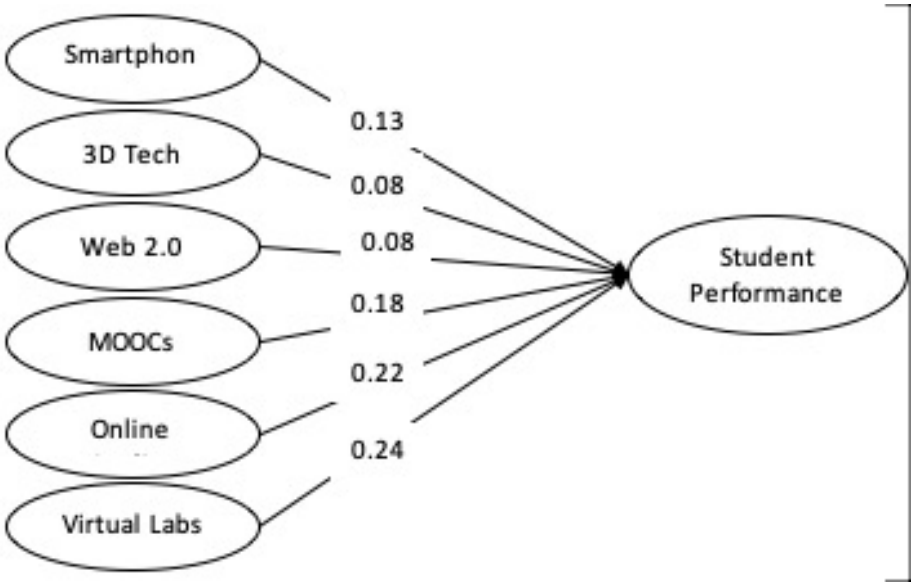


Figure 2. Empirical Model

It is observed a positive unstandardized co-efficient beta value for all the paths in the resulted regression model. It means that there is a positive relationship between new media technologies dimensions with the student performance. P values for the individual paths from Smartphone->SP, 3D-> SP, Web 2.0->SP, MOOCs->SP, Online->SP and Virtual->SP are less than significant value 0.05. It denotes that, only these six paths were significantly affecting the student performance of the higher education colleges.

Standardized Regression co-efficient beta values explain the size of the effect of new media technology dimensions on the student performance in the model. Standardized Beta value for the path Virtual-> SP (0.24) is maximum followed by Online->SP (0.22), MOOCs->SP (0.18), Smartphone->SP (0.13), 3D->SP (0.08) and Web 2.0 -> SP (0.08). It means that 24 % of the influence is stretched out from virtual laboratories alone. The framed hypotheses H1, H2, H4, H5, H9 and H10 are supported and the remaining H3, H6, H7 and H8 are not supported.

CONCLUSION

The present study was initiated with the aim of assessing the impact of new media technology usage on student performance. The New media technology usage factors considered for the study are Smartphone, 3D Technologies, Google Apps, Web 2.0, MOOCs, e-library, Game Simulations, Online Resources and Virtual Laboratories. The multiple regression model was developed for this purpose and executed with software like Jamovi. The results of the regression model revealed that Smartphone, 3D, Web 2.0, MOOCs, Online and Virtual labs are significantly influencing the overall student performance of the higher education colleges largely.

LIMITATIONS AND SCOPE OF THE STUDY

The present exploration provides the conceptual framework which will be empirically tested. The scope of the study was as follows:

• The concept emphasizes the broader area of the new media technologies used in higher education.

• The study identifies different emerging new media technologies used in higher education around the world so that this could help in developing a predictive time frame of the new media technologies in higher education in India.

• The study also focuses on the performance of the students after using the new media technologies in the classroom.

References:

1. Crede, J., Wirthwein, L., McElvany, N., & Steinmayr, R. (2015). Adolescents' academic achievement and life satisfaction: The role of parents' education. Frontiers in psychology, 6, 52.
2. Greener, S., & Wakefield, C. (2015). Developing confidence in the use of digital tools in teaching. Electronic Journal of E-Learning, 13(4), 260-267.
3. Grinager, H. (2006). i ssu E s.
4. Noraddin, E. M., & Kian, N. T. (2014). Academics' Attitudes toward Using Digital Games for Learning & Teaching in Malaysia. Malaysian Online Journal of Educational Technology, 2(4), 1-21.
5. Schacter, J. (1999). The impact of education technology on student achievement: What the most current research has to say.
6. Tyagi, S. (2012). Adoption of Web 2.0 technology in higher education: A case study of universities in the National Capital Region, India. International Journal of Education and Development using ICT, 8(2), 28-43.
7. Wiemeyer, J., & Hardy, S. (2013). Serious games and motor learning: concepts, evidence, technology. In Serious games and virtual worlds in education, professional development, and healthcare (pp. 197-220). IGI Global.
8. Dr. N. Kesavan, "Exports and Imports Stagnation in India During Covid-19- A Review" GIS Business (ISSN: 1430-3663 Vol-15-Issue-4-April-2020).
9. Dr. B. Sasikala "Role of Artificial Intelligence in Marketing Strategies and Performance" Migration LettersVolume: 21, No: S4 (2024), pp. 1589-1599, SSN: 1741-8984 (Print) ISSN: 1741-8992 (Online)
10. Dr. D.Paul Dhinakaran, "Customers Delight towards Service Excellence in Indian Overseas Bank Chennai" International Journal of Business Education and Management Studies (IJBEMS), ISSN:2941- 9638, (Vol.3.Issue 1. 2020 (March).
11. Dr. M. Surekha, "A study on utilization and convenient of credit card" Journal of Positive School Psychology, http://journalppw.com, 2022, Vol. 6, No. 4, 5635–5645.
12. Dr.M.Rajarajn "Bus Operations of Service Quality in Tamil Nadu State Transport Corporation Limited, Kumbakonam" Asian Journal of Management,(A and V Publication),(ISSN:0976 – 495X), Volume: 4, Issue: 1, May, 2013.
13. Dr.Umesh U, "Impact Of Human Resource Management (HRM)Practices On Employee Performance" International Journal of Early Childhood Special Education (INT-JECSE), ISSN: 1308-5581 Vol 14, Issue 03 2022.
14. M.Rajalakshmi "Current Trends in Cryptocurrency" Journal of Information and Computational Science, ISSN: 1548-7741, Volume 13 Issue 3 – 2023.

15. Dr.M. Mohana Krishanan "Consumer Purchase Behavior Towards Patanjali Products in Chennai" Infokara Research, ISSN NO: 1021-9056, Volume 12, Issue 3, 2023.
16. Dr. Malathi, "Impact of Covid-19 on Indian Pharmaceutical Industry" Annals of R.S.C.B., ISSN:1583-6258, Vol. 25, Issue 6, 2021, Pages. 11155 – 11159.
17. Dr.C. Vijai, "Mobile Banking in India: A Customer Experience Perspective" Journal of Contemporary Issues in Business and Government Vol. 27, No. 3, 2021, P-ISSN: 2204-1990; E-ISSN: 1323-6903.
18. D.Paul Dhinakaran Community Relations of Tamilnadu State Transport Corporation Ltd International Journal of Research and Analytical …, 2019
19. Maneesh P, "Barriers to Healthcare for Sri Lankan Tamil Refugees in Tamil Nadu, India" Turkish Journal of Computer and Mathematics Education, Vol.12 No.12 (2021), 4075-4083.
20. B. Lakshmi, "Rural Entrepreneurship in India: An Overview" Eur. Chem. Bull. 2023,12(Special Issue 4), 1180-1187.
21. Dr.C. Paramasivan "Perceptions On Banking Service in Rural India: An Empirical Study" Eur. Chem. Bull. 2023,12(Special Issue 4), 1188-1201
22. Dr G.S. Jayesh "Virtual Reality and Augmented Reality Applications: A Literature Review" A Journal for New Zealand Herpetology, ISSN NO: 2230-5807, Vol 12 Issue 02 2023.
23. Dr.S. Umamaheswari, "Role of Artificial Intelligence in The Banking Sector" Journal of Survey in Fisheries Sciences 10(4S) 2841-2849, 2023.
24. S Kalaiselvi "Green Marketing: A Study of Consumers Attitude towards Eco-Friendly Products in Thiruvallur District" Annals of the Romanian Society for Cell Biology. 2021/4/15.
25. Dr. D.Paul Dhinakaran, "Impact of Fintech on the Profitability of Public and Private Banks in India" Annals of the Romanian Society for Cell Biology, 2021
26. Dr. Yabesh Abraham Durairaj Isravel, "Analysis of Ethical Aspects Among Bank Employees with Relation to Job Stratification Level" Eur. Chem. Bull. 2023, 12(Special Issue 4), 3970-3976.
27. Dr. Sajan M. George "Stress Management Among Employees in Life Insurance Corporation of India" Eur. Chem. Bull. 2023, 12(Special Issue 4), 4031-4045.
28. Dr. Rohit Markan "E-Recruitment: An Exploratory Research Study of Paradigm Shift in Recruitment Process" Eur. Chem. Bull. 2023, 12(Special Issue 4), 4005-4013
29. Barinderjit Singh "Artificial Intelligence in Agriculture" Journal of Survey in Fisheries Sciences, 10(3S) 6601-6611, 2023.
30. Dr. S. Sathyakala "The Effect of Fintech on Customer Satisfaction Level" Journal of Survey in Fisheries Sciences, 10(3S) 6628-6634, 2023.
31. Umaya Salma Shajahan "Fintech and the Future of Financial Services" Journal of Survey in Fisheries Sciences, 10(3S) 6620-6627, 2023.
32. M.Raja Lakshmi "Green Marketing: A Study of Consumer Perception and Preferences in India" Journal of Survey in Fisheries Sciences, 10(3S) 6612-6619, 2023.
33. Dr. D. Paul Dhinakaran "Employees Satisfaction towards Labour welfare Measures in Tamil Nadu State Transport Corporation Limited, Kumbakonam", Asian journal of Managemen, 163-168, 2012.
34. Dr. Kismat Kaur "Artificial Intelligence In E-Commerce: Applications, Implications, And Challenges" ISSN: 0387-5695, eISSN: 0387-5695, Vol. 76 No. 1 (2024) https://yugato.org/index.php/yug/article/view-2024/681

35. Dr. Dinesh.N "Artificial Intelligence Applied To Digital Marketing" ISSN: 0387-5695, eISSN: 0387-5695, Vol. 76 No. 1 (2024) https://yugato.org/index.php/yug/article/view-2024/693
36. Dr.R.Karthiga "Impact Of Artificial Intelligence In The Banking Sector" ISSN: 0387-5695, eISSN: 0387-5695, Vol. 76 No. 1 (2024) https://yugato.org/index.php/yug/article/view-2024/701