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IMPACT OF E- LEARNING ON STUDENTS PERFORMANCE AND EMPLOYABILITY WITH REFERENCE TO DELHI-NCR REGION

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ABSTRACT

The study focuses on identifying the impact of e-learning on students' performance in the Delhi-NCR region. In the study descriptive and inferential analysis were being conducted. The two main research objectives were firstly to find the impact of e-learning on the performance of the students and secondly to identify the impact of student involvement in e-learning on the employability and performance of the students. Further based on the research questions two main hypotheses ($H1_0$ and $H2_0$) were being framed. A well-structured questionnaire with six parts was designed. As a result, the first part asks questions about the zone, age, gender, experience level, degree of designation, kind of organization, and overall income of the organization. The second section asks respondents who are e-learners questions on their academic subject, e-learning experience, and educational background. The final section asks questions on the need for skill improvement. The fourth section asks questions about course material appropriateness, satisfaction level, quality factors, and course content. Questions like cost and benefit, learning from prior performance, online payment systems, learning efficacy, etc. were included in the fifth segment. The sixth and final portion includes questions about current internet usage, the skills for which e-learning courses are taken, and the motivation for choosing e-learning. The results show a strong relationship between e-learning and student employability. An analysis of e-learning and communication skills separately yields a result of 0.608, which suggests a somewhat favorable association between the two. Indeed, the two variables' 0.819 correlation coefficient value indicates a very strong positive correlation between networking skills and e-learning. Also, it was shown that communication skills that increase self-assurance, technical skills that meet industry standards, personality traits, leadership and motivational skills, presentation skills, and IT skills had positive relationships with student employability. Hypotheses testing results confirms that both the hypotheses ($H1_0$ and $H2_0$) were rejected confirming that there is significant impact of student involvement in e-learning on the employability and performance of the students.

KEYWORDS

Online Learning, Employability and E-learning

RESEARCH PAPER

1. Introduction:

Nowadays, e-learning has drawn more and more attention. To enhance student learning outcomes, several educational institutions have introduced technology-enhanced learning environments. In order to provide references to basic ideas and highlight issues for the large community of e-learning practitioners, this study work gives an overview of e-learning, positive & negative aspects of e-learning on stakeholders, i.e., learners and employers. Until recently, instructional material was seen as a serious problem. So, the most significant methods and current studies on content customization are included in this study effort.

The method of delivering educational information and learning using digital means is known as e-learning, in short. The early skepticism about online learning was certain to disappear as the findings showed that it may be just as effective as learning in a classroom. Although the foundation of the entire educational process is formal education, it is provided online utilizing technology such as computers, tablets, and even mobile phones. Students may now easily access their online lessons whenever they want, from anywhere.

2. Related Work:

E-Learning can be described as a novel technique that is frequently getting used under the industry of education and involve the utilization of various technologies to help students in completing their courses outside of their traditional/conventional classrooms (Farid et al., 2015). The technologies that are utilized under e-learning are dependent upon the use of the internet, as it can be used effectively to provide education to the students even in remote areas that may be located miles away from the physical university or school (Nawaz & Kundi, 2010).

E-learning can comprise various activities which can include videos, online games, as well as utilization of virtual blackboards and even applications like Skype. It is considered as one of the most effective approaches to enhance the learning experience of the students as it also helps them to give appropriate attention to their studies under their busy schedule (Shah et al., 2013). On the other hand, distance education is defined as the method of providing education through electronic media or the internet to those students who might not be physically present within the school, college or university.

The author Akhtar et al. (2021) summarizes that offering of distance education via e-learning platforms or technologies has a strong potential to lower costs for both students and virtual institutions. Focusing on their maximum potentials with their current infrastructure the investigations also sufficiently demonstrated that the e-learning platforms used to deliver distance education are also significantly improving the academic performance or grades of the students who may be receiving their education from remote locations. Again, a number of conclusions may be drawn to back up this discovery. One logical justification for this result, for instance, is that e-learning platforms provide students the freedom to manage their studies in accordance with their own preferences (Romero & Barbera, 2011). The ability to educate several students at once is made possible by the synchronous or asynchronous support of the instructor, tutor, or subject matter expert in e-learning systems, which also reduces the need for extra teaching staff. (Kundi & Nawaz, 2014)

According to author Lumadi et al. (2013) the study investigated how e-Learning affects student-teacher academic achievement. The necessity for a teaching and learning technique to help educational institutions solve difficulties and enhance results prompted the academics' interest in e-Learning. The researchers tested whether student-teachers educated using e-Learning (blended learning) performed better than those taught using traditional methods. E-Learning improved student performance as student-teachers educated using eLearning outperformed those taught using the conventional technique. Based on this conclusion, training institutions should embrace ICTs and become more adaptable by embracing dynamic and multidimensional learning methodologies as education challenges become more complicated.

The study by Onyema et al. (2020) looks at how students' interest in and academic success in the Data Structure course are impacted by e-learning platforms. Participants in the study included 50 students majoring in computer science who were enrolled in a tertiary institution-level Data Structure course. Two main groups were created from the sample: the experimental group (n-25) and the control group. Although the Control Group (CG) received instruction in a regular classroom setting, the Experimental Group (EG) received instruction through an online learning platform. The two groups were given an accomplishment test on data structure as a pre-test and post-test. Whereas ANOVA was used to evaluate the hypotheses. The EG performed better than the CG, as evidenced by the fact that the EG's mean score was statistically greater than the CG's. Also, the results demonstrated that following the approach, the EG's learning interests were statistically significantly affected by

their utilization of e-learning platforms. As a result, it can be concluded that the use of e-learning platforms should be promoted, but the changeover must be gradual so that the learners can comprehend the new learning approach and how to maximize its potential.

3. Methodology:

The study uses both descriptive and inferential analysis the survey method was being adopted for data collection. The method of sampling that was used was known as the convenience sampling method. In order to carry out the survey, a well-structured instrument in the form of questions that were carefully organized were being formed. A pilot survey using a small sample was carried out in order to determine the accuracy of the instrument. The instrument is discovered to be suitable; it is now being utilized for further investigation.

Sample Size: 250

Sampling Technique: Convenience Sampling Technique (Non-Probability Method)

Area of Research: Delhi – NCR Region.

Objectives:

1. To find the impact of e-learning on the performance of the students.
2. Identify the impact of student involvement in e-learning on the employability and performance of the students.

Hypotheses:

1. $H_0$1: There is no significant impact of student involvement in e-learning on the performance of students.

   H_a1: There is significant impact of student involvement in e-learning on the performance of students.

2. $H_0$2: There is no significant impact of e-learning on student employability.

   H_a2: There is significant impact of e-learning on student employability.

4. Results:

Gender wise classification is shown below in the table 1:

Table 1: Gender wise classification

Gender Wise	No. of Respondents	Percentage (%)
Male	**125**	**50**
Female	**125**	**50**
Total	**250**	**100**

Based on gender wise classification the considered respondents were being categorized as 50% female and 50% male which accounts for 125 respondents each.

Region wise classification:

Table 2: Classification Based on Zone

		Frequency	Percent	Valid Percent	Cumulative Percent
Zones	North Zone	175	70.0	70.0	70.0
	South Zone	11	4.4	4.4	74.4
	East Zone	38	15.2	15.2	89.6
	West Zone	17	6.8	6.8	96.4
	Central Zone	9	3.6	3.6	100.0
	Total	250	100.0	100.0	

Region wise classification suggest that five zones were being considered as follows:

- North zone includes Karnal, Shamli, Jind, Panipat, Baghpat and Muzaffarnagar.
- West zone includes Jhajjhar, Rohtak and Bhiwani.
- East zone includes Ghaziabad, Gautam Budh Nagar, Hapur and Bulandshahr.
- South zone covers Alwar and Bharatpur, Rewari and Mewat.
- Central Zone covers Sonipat, Gurugram, Delhi and Faridabad

70% respondents in all were from northern zone, about 4.4% were form the southern zone,15.2% respondents as students were from eastern zone, almost about 3.6% respondents were from central zone and finally 6.8% were form western zone.

$H_0$1: There is no significant impact of student involvement in e-learning on the performance of students.

Table 3: Hypothesis testing results for $H_0$1

S. No.	Hypothesis	T-test	P-Value	Standard Alpha Value	Result
H1.1	Performance ⟶ Student involvement aspect: appropriateness of course content	51.332	.000	0.05	Rejected
H1.2	Performance ⟶ Student involvement aspect degree of satisfaction	51.166	.000	0.05	Rejected
H1.3	Performance ⟶ Student involvement aspect quality of course content	50.615	.000	0.05	Rejected
H1.4	Performance ⟶ Student involvement aspect quality of assignments.	50.281	.000	0.05	Rejected
H1.5	Performance ⟶ Student involvement aspect quality of projects.	49.761	.000	0.05	Rejected
H1.6	Performance ⟶ Student involvement aspect quality of teaching.	49.584	.000	0.05	Rejected
H1.7	Performance ⟶ Student involvement aspect course content as per the expectations.	52.527	.000	0.05	Rejected
H1.8	Performance ⟶ Student involvement aspect outcomes, as promised, achieved.	49.780	.000	0.05	Rejected
H1.9	Performance ⟶ Student involvement aspect cost and benefit.	36.013	.000	0.05	Rejected
H1.10	Performance ⟶ Student involvement aspect features to come back on left off task.	37.282	.000	0.05	Rejected
H1.11	Performance ⟶ Student involvement aspect speed of internet connection.	39.083	.000	0.05	Rejected

H1.12	Performance ⟶ Student involvement aspect interactive course.	38.864	.000	0.05	Rejected
H1.13	Performance ⟶ Student involvement aspect language support – multilingual approach.	41.178	.000	0.05	Rejected
H1.14	Performance ⟶ Student involvement aspect learn from past performance.	39.429	.000	0.05	Rejected
H1.15	Performance ⟶ Student involvement aspect learning effectiveness.	39.142	.000	0.05	Rejected
H1.16	Performance ⟶ Student involvement aspect multimedia tools / technologies	36.877	.000	0.05	Rejected
H1.17	Performance ⟶ Student involvement aspect online payment system.	37.847	.000	0.05	Rejected
H1.18	Performance ⟶ Student involvement aspect online test / quizzes.	35.887	.000	0.05	Rejected
H1.19	Performance ⟶ Student involvement aspect slow internet connection.	38.044	.000	0.05	Rejected
H1.20	Performance ⟶ Student involvement aspect pre training for student.	39.061	.000	0.05	Rejected

T-test is being used to test the null hypothesis $H_0$1 which is described as "there is no significant impact of student involvement in e-learning on the performance of students." The results shown in the table above conclude that because all of the aspects related to student involvement have p-values (0.00) that were lower than the standard alpha value of 0.05, the null hypothesis was rejected, and finally it concludes that, there is a significant impact of student involvement aspects in e-learning on student performance.

$H_0$2: There is no significant impact of e-learning on student employability.

In order to find the dependency between e-learning and student employability various aspects related to employability were being considered and tested individually through Chi-Square test. The following sub hypotheses were being framed and test accordingly:

Table 4: Hypothesis testing results for $H_0$2

S. No.	Hypothesis	Chi-Square Test Value	P-Value	Standard Alpha Value	Result
$H1.1_0$	E-learning ⟶ Student employability aspect: communication skill according to the industry requirement.	154.768	.000	0.05	Rejected
$H1.2_0$	E-learning ⟶ Student employability aspect: networking capabilities.	229.621	.000	0.05	Rejected
$H1.3_0$	E-learning ⟶ Student employability aspect: communication skill gained result in increase in confidence level	291.432	.000	0.05	Rejected
$H1.4_0$	E-learning ⟶ Student employability aspect: academic performance	147.775	.000	0.05	Rejected
$H1.5_0$	E-learning ⟶ Student employability aspect: technical skills according to industry requirement	250.420	.000	0.05	Rejected
$H1.6_0$	E-learning ⟶ Student employability aspect: personality aspects	203.737	.000	0.05	Rejected
$H1.7_0$	E-learning ⟶ Student employability aspect: leadership and motivational skills	251.054	.000	0.05	Rejected
$H1.8_0$	E-learning ⟶ Student employability aspect: creative thinking & innovation	171.119	.000	0.05	Rejected
$H1.9_0$	E-learning ⟶ Student employability aspect: presentation skills	212.578	.000	0.05	Rejected

$H1.10_0$	E-learning ⟶ Student employability aspect: team work and problem-solving skills	244.762	.000	0.05	Rejected
$H1.11_0$	E-learning ⟶ Student employability aspect: collaboration	119.508	.000	0.05	Rejected
$H1.12_0$	E-learning ⟶ Student employability aspect: IT skills	247.729	.000	0.05	Rejected

To test the null hypothesis $H_0$2: "There is no significant impact of e-learning on student employability". Finally, it can be interpreted that as all the sub hypotheses were being rejected so it can be concluded there is significant impact of e-learning on student employability. The correlation coefficient values as shown in the table 4.91 are in accordance with the results.

Correlation: Student Employability Aspects and E-Learning		
		E-Learning
Student Employability: Communication skill according to the industry requirement	Pearson Correlation	.608**
Student Employability: Networking capabilities	Pearson Correlation	.819**
Student Employability: Communication Skill gained result in increase in confidence level	Pearson Correlation	.885**
Student Employability: Academic performance	Pearson Correlation	.639**
Student Employability: Technical skills according to industry requirement	Pearson Correlation	.865**
Student Employability: Personality Aspects	Pearson Correlation	.782**
Student Employability: Leadership and motivational skills	Pearson Correlation	.843**
Student Employability: Creative Thinking & Innovation	Pearson Correlation	.608**
Student Employability: Presentation Skills	Pearson Correlation	.846**
Student Employability: Team work and problem-solving skills	Pearson Correlation	.798**
Student Employability: Collaboration	Pearson Correlation	.606**
Student Employability: IT skills	Pearson Correlation	.837**
**. Correlation is significant at the 0.01 level (2-tailed).		

Table 5: Correlation Coefficient Values

The findings indicate a good correlation between student employability and e-learning. When e-learning and communication ability are examined individually, a result of 0.608 indicates that there is a relatively positive relationship between the two. Corresponding to this, the correlation coefficient value of 0.819 between the two variables shows a strong positive relationship between networking abilities and e-learning. Likewise, a favorable association between student employability and communication abilities that boost self-assurance, technical skills that fulfill industrial standards, personality qualities, leadership and motivating abilities, presentation skills, and IT abilities was discovered.

5. Conclusion:

The study examines the impact of e-learning on students' performance and also identify the influence of students' involvement (in e-learning) on employability and performance of student. Impact of e-learning on various student employability aspect such communication skill according to the industry requirement, networking capabilities, communication skill gained result in increase in confidence level, academic performance, technical skills according to industry requirement, personality aspects, leadership and motivational skills, creative thinking & innovation, presentation skills, team work and problem-solving skills, collaboration and IT skills. The findings of the hypothesis testing show that both hypotheses ($H_0$1 and $H_0$2) were disproved, proving that student participation in online learning has a major influence on students' performance and employability.

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