TOJDEL
The Online Journal of Distance Education and e Learning

ISSN 2147-6454

# The Online Journal of Distance Education and e-Learning

*Volume 13 Issue 1*
*January 2025*



www.tojdel.net
January 2025

**Contact Address:**
Prof. Dr. Aytekin İŞMAN
TOJDEL, Editor in Chief
Sakarya-Turkey

Published in TURKEY

 

## Message from the Editor-in-Chief

Dear Colleagues,

It is with great pleasure that we welcome you to The Online Journal of Distance Education and Learning (TOJDEL). We extend our sincere gratitude for your continued interest and engagement with our journal. Over the past year, TOJDEL has garnered significant attention from academicians, educators, and students across the globe. This growing interest underscores the journal's role in disseminating emerging trends and advancements in the field of distance education.

As we present Volume 13, Issue 1, we remain committed to contributing to the evolving landscape of distance learning. It is our hope that this issue will further enrich scholarly dialogue and provide valuable insights that will foster innovation and progress in the domain of distance education.

TOJDEL is confident that readers will gain diverse perspectives and deepen their understanding of contemporary issues and methodologies in distance education. The opinions and findings presented in this publication reflect the viewpoints of the contributing authors and do not necessarily represent the stance of the editorial team or TOJDEL.

We would like to take this opportunity to extend our profound appreciation to the esteemed members of the editorial board who have generously dedicated their time and expertise to reviewing submissions for this issue. Their invaluable contributions ensure the academic rigor and quality of our publication.

Thank you for your continued support and collaboration.

Warm regards,

## Call for Papers

The Online Journal of Distance Education and Learning (TOJDEL) cordially invites the submission of original articles that explore various dimensions of distance education. We welcome contributions addressing theoretical frameworks, innovative methodologies, case studies, and emerging trends within the field.

Submitted manuscripts must be original, unpublished, and not under consideration for publication elsewhere at the time of submission to TOJDEL. All manuscripts should be written in English and adhere to the journal's formatting and submission guidelines.

TOJDEL's editorial process is overseen by a distinguished team of editors, guest editors, and members of the advisory board, all of whom are dedicated to maintaining the highest academic standards.

If you are interested in contributing to TOJDEL as an author, guest editor, or reviewer, we encourage you to submit your curriculum vitae (CV) to **tojdel.editor@gmail.com** for consideration.

We look forward to your scholarly contributions that will continue to enrich the academic discourse in the field of distance education.

Warm regards,

**January 01, 2025**
**Prof. Dr. Aytekin ISMAN**
**Editor-in-Chief**
**Sakarya University**

 

 

 

## Table Of Contents



 

# EFFECT OF ADMINISTRATOR'S ONLINE FEEDBACK ON JOB SATISFACTION AND TEACHING COMPETENCY OF SECONDARY SCHOOL TEACHERS

Dr. Nilesh Kumar Patel
Professor and Principal, Vidyasagar College, Devi Ahilya University, Indore, India.
E-mail: nktp12374@gmail.com
ORCID - https://orcid.org/0000-0001-5296-894

**ABSTRACT**
The present study is quasi experimental in nature. Main purpose of the study is to see the effect of Administrator's online feedback on Job satisfaction and Teaching competency of Secondary school teachers during the Lockdown. The non-equivalent control group design was used for the present study suggested by Stanley and Campbell (1963). A total of 163 (61 Male, 102 Female) secondary level schoolteachers and principals of four schools are selected in this study. Two schools were randomly taken as treatment group and rest two schools were treated as control group. There were 78 teachers in experimental group and 85 teachers in control group. Standardized Job satisfaction questionnaire developed by Kumar & Mutha and Standardized General Teaching competency scale developed by Passi & Lalitha were used to collect the data. 2X2X2 two-way Analysis of covariance and Pearson's Product moment correlation were used to test the null hypotheses of the study. Treatment was found significant and positive on Job satisfaction and Teaching competency. Female teachers were found to have significantly higher Job satisfaction as compared to Male teachers. Job satisfaction and Teaching competency were found independent of Gender and Salary of teachers. No significant interactional effect of Gender and Salary with each other and with the treatment on Job satisfaction or Teaching competency was seen. Suggestions for the administrators, teachers and educational planners are given in the study.
**Keywords:** Administrator's Feedback, Online Feedback, Administrator's Online Feedback, Job satisfaction, Teaching competency, Gender, Salary.

## SIGNIFICATION OF THE STUDY

Teaching at secondary school level is a challenging task (Milošević, 2020). Students at this level are more are less able to challenge their teachers' level of knowledge and understanding. They want active interaction with their teachers and want to engage in discussion about the content. The teachers' role at this level is expected as facilitator of learning rather than the major source of knowledge. The traditional educational theories have no longer relevance today because the society is becoming more diverse and political correctness is rapidly taking over free-thinking. Parents become fully involved & take active participation in the process of decision making at school (Brewer, 2007). The teachers are expected to fulfill the expectations of students as well as the expectations of schools, parents, society, and the government. For this purpose, teachers need continuous feedback from different sources. Effective feedback can provide information to the teachers to help and shape the teaching (Yorke, 2003; Nicol et al., 2004; Patel, 2018a). The feedback has great importance in improving teaching effectiveness of the teachers (Patel et al., 2017; Jaszczur, 2018). This has significant effect in professionalizing teaching in the secondary education level (Patel, 2018b; Crawford, 2019). There may be many different sources of providing feedback to the teachers like feedback may be provided by the peers or senior teachers, feedback given by the students also has great importance, feedback may also be provided by the principal or administrator (Ali, 2016; Patel et al., 2018). Lack of feedback closes the door of professional development of the teachers (Zepeda, 2012; Nathan, 2019). It will lead to dissatisfaction of the teachers towards their job. Better performance of teachers can only be expected if they are satisfied with their jobs (Okeke et al., 2017).

For schoolteachers, job satisfaction and Teaching competency have been considered as important factors for the all-roundimprovement of the educational system. Satisfaction is a psychological phenomenon, and its concept is highly subjective in nature. Job satisfaction expresses the amount ofagreement between one's expectation of the job and the rewards the job provides. Job satisfaction may be considered as the result of various attributes possessed by an employee. Teachers with high level of job satisfaction are generally self- motivated in their work and can perform better in the teaching learning process (Chamundeswari, 2013; Toropova et al., 2021). Conversely, teachers with low level of satisfaction may not perform well in their jobs. For example, when teachers are satisfied with their jobs, they teach their students more effectively and ensureclass performance of students more productively. Similarly, when teachers are not satisfied with their jobs this leads to tension and stress and hence, they cannot perform well in the class (Bowers et al., 2001; Kyriacou, 2001). Thus, dissatisfied teachers are a cause of concern since this leads to ineffective teaching which affects the educational quality of the students (Abdullah et al., 2009).

The major factors of job satisfaction are (a) Intrinsic aspect of the job (b) Salary promotion of avenues and service condition (c) Physical facilities (d) Institutional plans and policies (e) Satisfaction with social status and family welfare (f) Satisfaction with authorities (g) Report with students (h) Relationship with co-workers (Dixit,

  

1993). All these factors play a major role to ensure job satisfactionof the teacher.
In general majority of reports says that the male workers get higher salaries in comparison to female workers. Hegewisch et al. (2016), in a policy paper on 'The Gender Wage Gap: 2015; Earnings Differences by Race and Ethnicity' concluded that 'Women are paid 79 cents for every dollar paid to men'. The UN Women (United Nations entity dedicated to gender equality and the empowerment of women) reported that 'Worldwide, women only make 77 cents for every dollar earned by men' (Source UN News 18 sept. 2022). Some of the studies revealed that female workers showed high job satisfaction than man, despite getting lower salaries in comparison to men's (Kim, 2005, Miao, 2017). On the other hand, some of the studies concluded that male workers experienced higher job satisfaction in comparison to female (Sousa-Poza et al., 2003). However, many of the studies found no difference between the Job satisfaction of men and women (Westover, 2009; Patel et al., 2015). This finding indicated that gender has a crucial role in job satisfaction.
Many studies found that the salary and Job satisfaction has significant positive relationship (Bakan et al., 2013). Other researchers found weak relationship between Salary and Job satisfaction (Adams et al., 1998). Studies called women paradox revealed that female workers showed high job satisfaction than man, despite getting lower salaries in comparison to men's (Kim, 2005, Miao, 2017). This finding indicates that Salary may be also a variable of interest when job satisfaction becomes dependent variable.
The term Teaching competency refers to the set of content knowledge, teaching and communication skills, attitudes and values needed for teacher to complete the teaching learning process successfully (Patel, 2018). Effects of different type of feedback were studied in several studies (Jain, 2014; Chawla et al., 2017, Patel, 2018). Many studies conducted in microteaching and simulated teaching revealed that the feedback has significant positive effect on Teaching competency of the schoolteachers (Passi et al., 1977; Das et al., 1980 & Purohit, 1987). It has been felt that more studies needed to see the effect of Administrator's online feedback on teaching competency of schoolteachers.

## STATEMENT OF PROBLEM

The problem was be stated as "Effect of Administrator's online feedback on Job satisfaction and Teaching competency of Secondary school teachers."

## RESEARCH OBJECTIVES

Objectives of the study are as follows-

1. To study the effect of Treatment, Gender, Salary of teachers and their various interactions on Job satisfaction by considering Pre-Job satisfaction as covariate.
2. To study the effect of Treatment, Gender, Salary of teachers and their various interactions on Teaching competency by considering Pre- Teaching competency as covariate.
3. To compare mean job satisfaction score of male and female teachers.

## RESEARCH HYPOTHESES

Researcher formulated following null hypothesis for the present study-

1 There is no significant effect of Treatment, Gender, Salary of teachers and their various interactions on Job satisfaction by considering Pre-Job satisfaction as covariate.
2 There is no significant effect of Treatment, Gender, Salary of teachers and their various interactions on Teaching competency by considering Pre- Teaching competency as covariate.
3 There is no significant difference between the mean job satisfaction scores of male and female teachers.

## METHOD AND PROCEDURE

**Sample -** The present study was experimental in nature. The sample of the study comprised of 163 secondary school teachers and 4 principals belonging to four different secondary schools of Indore city. These schools were selected by purposive sampling technique and all the teachers teaching in secondary classes during 2020-21 were taken as sample. Out of these four schools the treatment was assigned randomly to two schools. The Group-wise and gender wise distribution of teachers is given in the table No. 1

**Table 1: Group-wise and School-wise distribution of teachers**

| Group | Male | Female | Total |
|---|---|---|---|
| Experimental | 29 | 49 | 78 |
| Control | 32 | 53 | 85 |
| Total | 61 | 102 | 163 |

From table it is evident that the size of the sample was 163 secondary school teachers. Out of these 163

  

secondary school teachers, 78 secondary school teachers (29 Male & 49 Female) were there in the Experimental Group and 85 secondary school teachers (32 Male & 53 Female) belonged to the Control Group. The schools had comparable management and teacher recruitment policies respectively.

**Experimental Design**

The present study is quasi-experimental in nature. The non-equivalent control group design was used for the present study suggested by Stanley and Campbell (1963). Two schools out of four schools were randomly designated as Experimental group and rest two schools were treated as Control group. Both the groups were pre-tasted by administering Job satisfaction Scale and Teaching Competence Scale. The treatment was provided to sampled secondary school teachers of Experimental Group in the form of Administrator's online Feedback based on the 6 - 10 minutes video/cctv/online/direct continuous observations by his/her school principal once in a week for each teacher and overall minimum 6 observations in two months. The effect of treatment was analysed by post administered Job satisfaction Scale and Teaching Competence Scale. Data related to salary were collected from the school principals.

## TOOLS

**Job satisfaction Questionnaire**

The Job satisfaction questionnaire is a joint contribution of Dr. Pramod Kumar and Mr. D. N. Mutha for measuring the Job-satisfaction of the secondary school teachers. The split-half reliability of the test was found 0.95 with an index ofreliability of 0.97. The test-retest reliability of the test is 0.73 with an index of reliability 0.85.There had been 100% agreements amongst judges regarding their relevancy to teacher's Job satisfaction are included in the questionnaire.

**Teaching competency Scale**

General Teaching competency Scale was used to measure Teaching competency of secondary school teachers. This tool was developed by Dr. B. K. Passi and Dr. M. S. Lalitha (1976). The reported inter-observer reliability coefficients range from 0.85 to 0.91. The Scott's coefficient of inter-observer agreement ranging from 0.78 to 0.82 as reported in the manual of the tool.

## PROCEDURE OF DATA ANALYSIS

Three-way ANCOVA was used to test first two hypotheses. Independent t-test was used to test third hypothesis and rest three hypotheses were tested by using Pearson's Product moment correlation coefficient.

## RESULTS AND INTERPRETATION

Result and interpretation have been presented objective wise as follows-

**1 To study the effect of Treatment, Gender, Salary, and their various interactions on Job satisfaction by considering Pre-Job satisfaction as covariate.**

The first objective was to study the effect of Treatment, Gender, Salary, and their various interactions on Job satisfaction by considering Pre-Job satisfaction as covariate. Job satisfaction was assessed both before and after the treatment of teacher belonging to experimental group as well as of the control group. There were two levels of Gender namely Male and female. High and low were two levels of salary. Thus, data were analyzed with the help of 2X2X2 Factorial design ANCOVA. The results are given in the Table 2.

**Table 2: Summary of 2x2x2 Factorial Design ANCOVA for Job satisfaction by considering Pre-Job satisfaction as covariate**

| Source of variance | df | SSy.x | MSSy.x | Fy.x | Sig. |
|---|---|---|---|---|---|
| Treatment | 1 | 11.748 | 11.748 | 7.697 | 0.006 |
| Gender | 1 | 0.302 | 0.302 | 0.198 | 0.657 |
| Salary | 1 | 0.538 | 0.538 | 0.353 | 0.554 |
| Treatment * Gender | 1 | 0.871 | 0.871 | 0.571 | 0.451 |
| Treatment * Salary | 1 | 1.626 | 1.626 | 1.065 | 0.304 |
| Gender * Salary | 1 | 2.214 | 2.214 | 1.450 | 0.230 |
| Treatment * Gender * Salary | 1 | 0.807 | 0.807 | 0.528 | 0.468 |
| Error | 154 | 235.055 | 1.526 | | |
| Total | 163 | 84148.000 | | | |

**Effect of Treatment on Job satisfaction by considering Pre-Job satisfaction as covariate**

From Table 2 it is evident that the adjusted F-value is 7.697 which is significant at .01 level with df =1/161. It indicates that the adjusted mean scores of Job satisfaction of Treatment group differs significantly from Control group when Pre- Job satisfaction was taken as covariate. In this context the null hypothesis that there is no significant difference between adjusted mean scores of Job satisfaction of Experimental group and Control group by considering Pre- Job satisfaction as covariate is rejected.

  

**Table 3: Adjusted mean score of Job satisfaction by considering Pre- Job satisfaction as covariate.**

| Group | Adjusted mean score |
|---|---|
| Experimental | 22.734[a] |
| Control | 22.077 [a] |

a. **Covariates are evaluated at the following values: Pre-Job satisfaction = 19.7914**

Further from Table 3 it can be seen that the adjusted mean scores of Job satisfaction of Experimental group is 22.734 which is significantly higher than the Control group whose adjusted mean score of Job satisfaction is 22.077. It may, therefore, be said that Experimental group was found to be significantly superior to Control group in improving Job satisfaction when Pre-Job satisfaction was taken as covariate.

**Effect of Gender on Job satisfaction by considering Pre-Job satisfaction as covariate**

From Table 2 it can be observed that the adjusted F-value for Gender is 0.198 which is not significant. It shows that the adjusted mean scores of Job satisfaction Males and Females do not differ significantly when Pre- Job satisfaction was taken as Covariate. So Gender did not affect differentially Job satisfaction of teachers when Pre-Job satisfaction was taken as Covariate. Thus the null hypothesis that there is no significant effect of Gender on Job satisfaction of teachers by taking Pre- Job satisfaction as covariate is not rejected. It may, therefore, be said that Job satisfaction was found to be independent of Gender when Pre- Job satisfaction was taken as Covariate.

**Effect of Salary on Job satisfaction by considering Pre-Job satisfaction as covariate**

From Table 2 it can be observed that the adjusted F-value for Salary is 0.353 which is not significant. It shows that the adjusted mean scores of Job satisfaction of high and low salaried teacher groups do not differ significantly when Pre- Job satisfaction was taken as Covariate. So Salary did not affect differentially Job satisfaction of teachers when Pre- Job satisfaction was taken as Covariate. Thus the null hypothesis that there is no significant effect of Salary on Job satisfaction of teachers by taking Pre- Job satisfaction as covariate is not rejected. It may, therefore, be said that Job satisfaction was found to be independent of Salary when Pre- Job satisfaction was taken as Covariate.

**Effect of interaction between Treatment and Gender on Job satisfaction by considering Pre-Job satisfaction as covariate**

From Table 2 it may be observed that the adjusted F-value for interaction between Treatment and Gender is 0.571 which is not significant. It indicates that the interaction between Treatment and Gender did not affect significantly Job satisfaction of teachers when Pre- Job satisfaction was taken as Covariate. Therefore, the null hypothesis that there is no significant effect of interaction between Treatment and Gender on Job satisfaction of teachers by taking Pre- Job satisfaction as Covariate is not rejected. It may, therefore, be said that Job satisfaction was found to be independent of interaction between Treatment and Gender when Pre- Job satisfaction was taken as covariate.

**Effect of interaction between Treatment and Salary on Job satisfaction by considering Pre-Job satisfaction as covariate**

From Table 2 it may be observed that the adjusted F-value for interaction between Treatment and Salary is 1.065 which is not significant. It indicates that the interaction between Treatment and Salary did not affect significantly Job satisfaction of teachers when Pre- Job satisfaction was taken as Covariate. Therefore, the null hypothesis that there is no significant effect of interaction between Treatment and Salary on Job satisfaction of teachers by taking Pre- Job satisfaction as Covariate is not rejected. It may, therefore, be said that Job satisfaction was found to be independent of interaction between Treatment and Salary when Pre- Job satisfaction was taken as covariate.

**Effect of interaction between Gender and Salary on Job satisfaction by considering Pre-Job satisfaction as covariate**

From Table 2 it may be observed that the adjusted F-value for interaction between Gender and Salary is 1.45 which is not significant. It indicates that the interaction between Gender and Salary did not affect significantly Job satisfaction of teachers when Pre- Job satisfaction was taken as Covariate. Therefore, the null hypothesis that there is no significant effect of interaction between Gender and Salary on Job satisfaction of teachers by taking Pre- Job satisfaction as Covariate is not rejected. It may, therefore, be said that Job satisfaction was found to be independent of interaction between Gender and Salary when Pre- Job satisfaction was taken as covariate.

**Effect of interaction among Treatment, Gender and Salary on Job satisfaction by considering Pre-Job satisfaction as covariate**

Table 2 shows that the adjusted F-value for interaction among Treatment, Gender and Salary is 0.528 which in not significant. It indicates that there was no significant effect of interaction among Treatment, Gender and Salary on Job satisfaction of teachers when Pre- Job satisfaction was taken as Covariate. So, the null hypothesis that there is no significant effect of interaction among Treatment, Gender and Salary on Job satisfaction by taking Pre- Job satisfaction as Covariate is not rejected. It may, therefore, be said that Job satisfaction was found to be independent of interaction among Treatment, Gender and Salary when Pre- Job satisfaction taken as covariate.

  

**2. To study the effect of Treatment, Gender, Salary and their various interactions on Teaching competency by considering Pre-Teaching competency as covariate.**

The first objective was to study the effect of Treatment, Gender, Salary and their various interactions on Teaching competency by considering Pre-Teaching competency as covariate. Teaching competency was assessed both before and after the treatment of teacher belonging to experimental group as well as of the control group. There were two levels of Gender namely Male and female. High and low were two levels of salary. Thus data were analyzed with the help of 2X2X2 Factorial design ANCOVA. The results are given in the Table 2.

**Table 4: Summary of 2x2x2 Factorial Design ANCOVA for Teaching competency by considering Pre-Teaching competency as covariate**

| Source of variance | df | SSy.x | MSSy.x | Fy.x | Sig. |
|---|---|---|---|---|---|
| Treatment | 1 | 590.914 | 590.914 | 16.022 | 0.000 |
| Gender | 1 | 53.776 | 53.776 | 1.458 | 0.229 |
| Salary | 1 | 2.562 | 2.562 | 0.069 | 0.792 |
| Treatment * Gender | 1 | 119.290 | 119.290 | 3.234 | 0.074 |
| Treatment * Salary | 1 | 50.418 | 50.418 | 1.367 | 0.244 |
| Gender * Salary | 1 | 25.359 | 25.359 | 0.688 | 0.408 |
| Treatment * Gender * Salary | 1 | 131.463 | 131.463 | 3.565 | 0.061 |
| Error | 154 | 5679.622 | 36.881 | | |
| Total | 163 | 1973147.00 | | | |

**Effect of Treatment on Teaching competency by considering Pre-Teaching competency as covariate**

From Table 4 it is evident that the adjusted F-value is 16.022 which is significant at .01 level with df =1/161. It indicates that the adjusted mean scores of Teaching competency of Treatment group differs significantly from Control group when Pre- Teaching competency was taken as covariate. In this context the null hypothesis that there is no significant difference between adjusted mean scores of Teaching competency of Experimental group and Control group by considering Pre- Teaching competency as covariate is rejected.

**Table 5: Adjusted mean score of Teaching competency by considering Pre-Teaching competency as covariate**

| Group | Adjusted mean score |
|---|---|
| Experimental | 110.653[a] |
| Control | 106.026 [a] |

**a. Covariates are evaluated at the following values: Pre-Teaching competency = 94.2883**

Further from Table 5 it can be seen that the adjusted mean scores of Teaching competency of Experimental group is 110.653 which is significantly higher than the Control group whose adjusted mean score of Teaching competency is 106.026. It may, therefore, be said that Experimental group was found to be significantly superior to Control group in improving Teaching competency when Pre-Teaching competency was taken as covariate.

**Effect of Gender on Teaching competency by considering Pre-Teaching competency as covariate**

From Table 4 it can be observed that the adjusted F-value for Gender is 1.458 which is not significant. It shows that the adjusted mean scores of Teaching competency Males and Females do not differ significantly when Pre-Teaching competency was taken as Covariate. So Gender did not affect differentially Teaching competency of teachers when Pre- Teaching competency was taken as Covariate. Thus the null hypothesis that there is no significant effect of Gender on Teaching competency of teachers by taking Pre- Teaching competency as covariate is not rejected. It may, therefore, be said that Teaching competency was found to be independent of Gender when Pre- Teaching competency was taken as Covariate.

**Effect of Salary on Teaching competency by considering Pre-Teaching competency as covariate**

From Table 4 it can be observed that the adjusted F-value for Salary is 0.069 which is not significant. It shows that the adjusted mean scores of Teaching competency of high and low salaried teacher groups do not differ significantly when Pre- Teaching competency was taken as Covariate. So Salary did not affect differentially Teaching competency of teachers when Pre- Teaching competency was taken as Covariate. Thus the null hypothesis that there is no significant effect of Salary on Teaching competency of teachers by taking Pre-Teaching competency as covariate is not rejected. It may, therefore, be said that Teaching competency was found to be independent of Salary when Pre- Teaching competency was taken as Covariate.

**Effect of interaction between Treatment and Gender on Teaching competency by considering Pre-Teaching competency as covariate**

From Table 4 it may be observed that the adjusted F-value for interaction between Treatment and Gender is 3.234 which is not significant. It indicates that the interaction between Treatment and Gender did not affect significantly Teaching competency of teachers when Pre- Teaching competency was taken as Covariate.

  

Therefore, the null hypothesis that there is no significant effect of interaction between Treatment and Gender on Teaching competency of teachers by taking Pre- Teaching competency as Covariate is not rejected. It may, therefore, be said that Teaching competency was found to be independent of interaction between Treatment and Gender when Pre- Teaching competency was taken as covariate.

**Effect of interaction between Treatment and Salary on Teaching competency by considering Pre-Teaching competency as covariate**

From Table 4 it may be observed that the adjusted F-value for interaction between Treatment and Salary is 1.367 which is not significant. It indicates that the interaction between Treatment and Salary did not affect significantly Teaching competency of teachers when Pre- Teaching competency was taken as Covariate. Therefore, the null hypothesis that there is no significant effect of interaction between Treatment and Salary on Teaching competency of teachers by taking Pre- Teaching competency as Covariate is not rejected. It may, therefore, be said that Teaching competency was found to be independent of interaction between Treatment and Salary when Pre- Teaching competency was taken as covariate.

**Effect of interaction between Gender and Salary on Teaching competency by considering Pre-Teaching competency as covariate**

From Table 4 it may be observed that the adjusted F-value for interaction between Gender and Salary is 0.688 which is not significant. It indicates that the interaction between Gender and Salary did not affect significantly Teaching competency of teachers when Pre- Teaching competency was taken as Covariate. Therefore, the null hypothesis that there is no significant effect of interaction between Gender and Salary on Teaching competency of teachers by taking Pre- Teaching competency as Covariate is not rejected. It may, therefore, be said that Teaching competency was found to be independent of interaction between Gender and Salary when Pre-Teaching competency was taken as covariate.

**Effect of interaction among Treatment, Gender and Salary on Teaching competency by considering Pre-Teaching competency as covariate**

Table 4 shows that the adjusted F-value for interaction among Treatment, Gender and Salary is 3.565 which in not significant. It indicates that there was no significant effect of interaction among Treatment, Gender and Salary on Teaching competency of teachers when Pre- Teaching competency was taken as Covariate. So, the null hypothesis that there is no significant effect of interaction among Treatment, Gender and Salary on Teaching competency by taking Pre- Teaching competency as Covariate is not rejected. It may, therefore, be said that Teaching competency was found to be independent of interaction among Treatment, Gender and Salary when Pre- Teaching competency taken as covariate.

**3. To compare the mean Job satisfaction scores of Male and Female teachers**

The fourth objective was to compare the mean Job satisfaction scores of male and female teachers. Pre-Job satisfaction scores of the teachers of both (experimental and control) groups are used for this analysis. The data were analyzed with the help of independent t-test. The results are given in Table 6.

Table 6: Gender wise comparison of Mean Job satisfaction scores

| Gender | N | Mean | SD | t-value | Sig |
|---|---|---|---|---|---|
| Male | 61 | 18.59 | 4.41 | 2.89 | 0.005 |
| Female | 102 | 20.51 | 3.56 | | |

From Table 5 it can be seen that the t-value is 2.89 which is significant at 0.01 level of significance with df = 161. It shows that the mean score of Job satisfaction of Male and Female teachers differ significantly. Thus the null hypothesis that there is no significant difference between the mean Job satisfaction score of Male and Female teachers is rejected. Further the mean score of Job satisfaction of Female teachers is 20.51 which is significantly higher than those of Male teachers whose mean Job satisfaction score is 18.59. It may, therefore, be said that Female teachers were found to have significantly higher Job satisfaction as compared to Male teachers.

## DISCUSSION OF RESULT

The study reveals that treatment itself is effective on improving the Job satisfaction and Teaching competency of teachers. Previous studies reported that that Administrator's feedback is helpful in strengthening teachers' efficacy (Vandermolen et al., 2021). Result of this study has congruent with the conclusion of Jaszczur (2018), Patel (2018) & Crawford (2019). Gender was not found to have any significant interaction with Administrator's online feedback to affect Job satisfaction or Teaching competency. Although in the present study, the Female teachers were found to have higher Job satisfaction level than that of Male teachers as reported earlier by Kim (2005) & Miao (2017). This study found no evidence that job satisfaction may be affected by Salary of teachers. The year of Pandemic may be the possible reason behind this result, because, the study was conducted in year 2020-21i.e. during the period of deadly second wave of Covid-19. In this time period the job was precious. The women paradox (Kim, 2005, Miao, 2017) may be another possible reason behind this result, because the female teachers were 63% of the total sample of the present study. Further Female teachers were found to have significantly higher Job satisfaction. This result is similar to the findings of Muchhal et al. (2010), Mahajan, G.

  

(2016) & Bazaz (2017).

## FINDINGS

The findings of the study are as follows –

1. Experimental group was found to be significantly superior to Control group in improving Job satisfaction when Pre-Job satisfaction was taken as covariate.
2. Job satisfaction was found to be independent of Gender when Pre- Job satisfaction was taken as Covariate.
3. Job satisfaction was found to be independent of Salary when Pre- Job satisfaction was taken as Covariate.
4. Job satisfaction was found to be independent of interaction between Treatment and Gender when Pre- Job satisfaction was taken as covariate.
5. Job satisfaction was found to be independent of interaction between Treatment and Salary when Pre- Job satisfaction was taken as covariate.
6. Job satisfaction was found to be independent of interaction between Gender and Salary when Pre- Job satisfaction was taken as covariate.
7. Job satisfaction was found to be independent of interaction among Treatment, Gender and Salary when Pre-Job satisfaction taken as covariate.
8. Experimental group was found to be significantly superior to Control group in improving Teaching competency when Pre-Teaching competency was taken as covariate.
9. Teaching competency was found to be independent of Gender when Pre- Teaching competency was taken as Covariate.
10. Teaching competency was found to be independent of Salary when Pre- Teaching competency was taken as Covariate.
11. Teaching competency was found to be independent of interaction between Treatment and Gender when Pre-Teaching competency was taken as covariate.
12. Teaching competency was found to be independent of interaction between Treatment and Salary when Pre-Teaching competency was taken as covariate.
13. Teaching competency was found to be independent of interaction between Gender and Salary when Pre-Teaching competency was taken as covariate.
14. Teaching competency was found to be independent of interaction among Treatment, Gender and Salary when Pre-Teaching competency taken as covariate.
15. Female teachers were found to have significantly higher Job satisfaction as compared to Male teachers.

## IMPLICATIONS

The conclusion based on the findings of the present study lead to some important educational implications for the teachers, and school administrators-

- Administrator's online feedback has great uses for teachers as it can be used to improve the Job satisfaction and Teaching competency of the teachers. It can also be used to enhance the confidence of teachers, improve the teachers' behaviour in the school. It may be also helpful in professional development of teachers. Administrator's online feedback may also motivate the teachers to plan and use new and effective teaching process. This feedback system will give an opportunity to the teachers to identify their own strengths and weaknesses.
- Administrator's online feedback to the teachers leads to better discipline in classrooms as well as in the school. Improvement in Job satisfaction of teachers may also create positive and working atmospherein the school.
- Teachers need to update their pedagogical knowledge and teaching skills for the better performance and all-round development of students. Thus, the findings of the present study bear an implication and may be utilized by educational planners and administrators to assess the levels of teaching competency regularly and developing strategies to improve the quality ofteaching.
- The findings of the present study may be utilized by educational planners and administrators to assess the levels of work motivation and job satisfaction and develop strategies to improve the quality of teaching.

## REFERENCES

Abdullah, M. M., Uli, J., & Parasuraman, B. (2009). Job satisfaction among secondary school teachers. *Jurnal Kemanusiaan, 13*, 12-18.

Adams, G. A., & Beehr, T. A. (1998). Turnover and retirement: A comparison of their similarities and differences. Personnel Psychology, 51, 643−665.

Ahmad, N., Raheem, A. & Jamal, S. (2003). Job satisfaction among school teachers. *The Educational review, 7*.

Ali, A. D. (2016). Effectiveness of using screencast feedback on EFL students' writing and perception. *English Language Teaching, 9*(8), 106–121. https://doi.org/10.5539/elt.v9n8p106

  

Bakan, I. and Buyukbese, T. (2013). The Relationship between Employees' Income Level and Employee Job Satisfaction: An Empirical Study. *International Journal of Business and Social Science, 4(*7), 18-25.

Bazaz, S. M. (2017). A Comparative Study on Job Satisfaction of Male and Female Teacher Educators at Secondary Level. *THE COMMUNICATIONS Journal of Applied Research in Open and Distance Education, 25*(2), 36-40.

Bowers, T. & Mciver, M. (2001). Ill Health, Retirement and Absenteeism Amongst Teachers. *Research Brief No 235*: Department for Education and Employment, London.

Brewer, D. (2007). *Education for a new era.* Santa Monica: Rand Corporation.

Chamundeswari, S. (2013). Job Satisfaction and Performance of School Teachers. *International Journal of Academic Research in Business and Social Sciences, 3*(5), 420-428.

Chawla, Vibha & Thukral, Praveen. (2011). Effects of Student Feedback on Teaching Competence of Student Teachers. Contemporary Educational Technology. 2. 10.30935/cedtech/6044.

Crawford, C. (2019). *Using Student Feedback as a Tool to Improve Instructional Strategies* [Unpublished master's thesis, Goucher College Maryland]. MD-SOAR. http://hdl.handle.net/11603/16695

Das, R.C, Passi, B.K. and Singh, L.C (1980) Relative Effectiveness of Microteaching Components. NCERT, New Delhi.

Desai & Deshpande. (1996). Effect of feedback on teacher competence. cited in fourth survey of educational research by M.B.Buch, 2.

Dixit, M. (1993). *Manual for job satisfaction scale.* Agra: National Psychological Corporation.

Hegewisch, A., and Asha D. (2016). *The Gender Wage Gap: 2015; Earnings Differences by Race and Ethnicity*. Institute for Women's Policy Research., http://www.iwpr.org/publications/pubs/the-gender-wage -gap-by-occupation-2015-and-by-race-and-ethnicity/at_download/file.

Jain, A. (2014). Effect of Students' Feedback and Teaching Experience on Teacher Effectiveness of Secondary School Teachers. *Learning Community, 5*(1), 77-89.

Jaszczur, M. (2018). Effective feedback as a way to improve the quality of teaching, *EDULEARN18 Proceedings*, 7921-7927. doi: 10.21125/edulearn.2018

Kim, S. (2005). Gender differences in the job satisfaction of public employees: a study of Seoul Metropolitan Government, Korea. Sex roles, 52 (9), 667-681.

Kyriacou, C. (2001). Teacher Stress: Directions for future research. *Educational Review,53(*1), 27–35.

Mahajan, G. (2016). Job Satisfaction of School Teachers in Relation to their Gender and Mode of Appointment. *Learning Community, 7*(1), 95-99. DOI: 10.5958/2231-458X.2016.00010.5

Miao, Y., Li, L. & Bian, Y. (2017). Gender differences in job quality and job satisfaction among doctors in rural western China. *BMC Health Serv Res* 17, 848. https://doi.org/10.1186/s12913-017-2786-y

Milošević, Olja. (2020). Teaching Adolescent Students: Challenges and Opportunities. 350-361. 10.46793/pctja.19.350M.

Muchhal, M. K. & Chand, S. (2010). A Study of Accountability of Primary School Teachers in Relation to their Job Satisfaction. *Gyanodaya: The Journal of Progressive Education, 3*(1), 36-43.

Nathan, S. V. (2019, May 15). Lack of feedback can affect employee output, cos' goals. *The times of India,* https://timesofindia.indiatimes.com/business/india-business/lack-of-feedback-can-affect-employee-output-cos-goals/articleshow/69330128.cms

Nicol, David & Macfarlane, Debra. (2004). Rethinking Formative Assessment in HE: a theoretical model and seven principles of good feedback practice. IEEE Personal Communications - IEEE Pers. Commun.. 31. http://www.fppsm.utm.my/download/cat_view/13-jurnal-kemanusiaan.html

Okeke, C. I., & Mtyuda, P. N. (2017). Teacher Job Dissatisfaction: Implications for Teacher Sustainability and Social Transformation. *Journal of Teacher Education for Sustainability, 19*(1), 54-68. DOI: 10.1515/jtes-2017-0004

Passi, B.K. and Lalita, M.S. (1977) Micro-teaching in Indian Context, (Mimeo). Department of Education, Indore University, Indore.

Patel, N. K. & Joshi, B. (2015). Comparative Study of Job Satisfaction of Secondary School Teachers. *Anweshika, 10*(3), 15-22.

Patel, N. K. and Trivedi, N. (2017). Effect of Self Evaluation Based Feedback on Teaching. *Bharatiya Adhunik Shiksha,38*(2), 45-58. https://ncert.nic.in/pdf/publication/journalsandperiodicals/bhartiyaadhunikshiksha/BAS-October-2017.pdf

Patel, N. K. (2018a). Effect of Integrated Feedback on Classroom Climate of Secondary School Teachers. *International Journal of Evaluation and Research in Education*, *7*(1), 65-71. https://files.eric.ed.gov/fulltext/EJ1174875.pdf

Patel, N. K. (2018b). *Effect of Integrated Feedback from Student Evaluation of Teachers and Teachers' self Evaluation in Terms of Teacher morale, Teaching Competency and Classroom climate*. [Unpublished Doctoral dissertation]. Devi Ahilya University, Indore. http://hdl.handle.net/10603/229045

Patel, N. K. & Awasthi, P. (2018). Effect of Student Evaluation of Teacher Based Feedback on Self-Disclosure

  

of Secondary School Teachers. *EDUCARE: International Journal for Educational Studies*, *10*(2), 63-74. https://doi.org/10.2121/edu-ijes.v10i2.945

Purohit, Z. N. (1987). An experimental study of the effect of micro teaching skills and interaction analysis feedback on classroom performance and general teaching competence of pre-service language teachers. In M.B. Buch (Ed.), Fourth Survey of Research in Education: 1983-1988, 976. New Delhi: NCERT.

Sousa-Poza, A., & Sousa-Poza, A.A. (2003). Gender differences in job satisfaction in Great Britain, 1991-2000: permanent or transitory? *Applied Economics Letters, 10*(11), 691-694.

Toropova, A., Myrberg, E., & Johansson, S. (2021). Teacher job satisfaction: the importance of school working conditions and teacher characteristics, *Educational Review,* 73(1), 71-97, DOI: 10.1080/00131911.2019.1705247

UN News (2022, September 18). *Closing gender pay gaps is more important than ever.* news.un.org. https://news.un.org/en/story/2022/09/1126901

Westover, J. H. (2009). A cross-national look at the changing nature of gender differences in perceived job satisfaction. International Journal of Global Business and Economics, 2(1), 62-67.

Yorke, M (2003) Formative assessment in higher education: Moves towards theory and the enhancement of pedagogic practice, *Higher Education, 45*(4), 477-501.

Zepeda, S. J. (2012). Instructional supervision: Applying tools and concepts (3rd ed.). Larchmont, NY: Eye on Education.

  

# GAMIFICATION IN EDUCATION THROUGH STEALTH ASSESSMENTS

Dr. Y. Vijaya Lakshmi
Assistant Professor, School of Education
Central University of Gujarat, Sector-29, Gandhinagar, Gujarat
E-mail: Vijaya.lakshmi@cug.ac.in; M:9427401842

Dr. Ishfaq Majid
[2]CRC, Govt Higher Secondary School Panzgam Pulwama, Jammu & Kashmir, India
Central University of Gujarat, Sector-29, Gandhinagar, Gujarat

**ABSTRACT**
Games play a very important role in promoting incidental learning and help in exploring both the conscious and subconscious processes such as insight of a learner. Digital Game-Based Learning and assessments are now an integral part of educational practices. When designed effectively digital games can take the learners from the stage of improvisation to a meta-reflection where they can apply the gained competencies/skills to real life situations. Increasing penetration of ICT into education and the disruptive educational technologies are making it possible not only to innovate but also to implement more and more exemplar teaching-learning pedagogies and assessment tools. Such innovations will shift the teaching-learning process from a rote learning process to an inclusive and individualized/personalized process. When developed properly, digital games can assess both procedural knowledge and declarative knowledge of the learners. One such technique of using digital games for assessment is stealth assessment (SA). They help in helps in assessing higher order thinking skills of students accurately and efficiently. SA adopts the approach of competency-based learning, where on the basis of performance of learners in the game their competencies are easily identified and are provided further tasks accordingly. The paper also discusses the challenges in development and implementation of SAs.
**Keywords:** Teaching-learning, Digital Games, Assessment, Artificial intelligence, multi-disciplinary approach

  

## INTRODUCTION

An industrial revolution is always characterized by a paradigm shift in hitherto routine tasks and creates a turning point in various aspects of life, whether in society, economy, or philosophy. The 3IR (Industrial Revolution) known as digital revolution played a vital role in the emergence of 4IR which is characterized by artificial intelligence and Machine Learning. Thus, 4IR believes in the philosophy of integration of machines and processes amicably into the digital, physical, and biological worlds. As with many other fields, the 4IR is also going to show tremendous and powerful impact on education. New technologies involving artificial intelligence, machine learning, block chains, smart boards, handheld computing devices etc. are already gaining importance in education. The impact of all these disruptive technologies is visible in the topmost agendas of the first Education Policy of the 21st Century of India (MHRD, 2020). The policy stresses the core principles that education must develop and, reiterates that education should develop foundational, higher order thinking, social and emotional skills among students. It lays emphasis that educational practices should nurture the unique qualities of each student by providing them flexibility in the paths of learning as per their talents and interests.

One of the critical criticisms on education system all over the world is that it is preparing the students for survival in a system that will die before they get into it. Our education system, which has not yet fully adapted to earlier generations of industrial revolution has already entered IR 4.0. 4IR is characterized by features where the machines will perform almost all the routine tasks and individual are meant only for intellectual and creative tasks. In such a world, we require individuals capable of exercising critical judgment and navigating unfamiliar environments adeptly and "have the future in their bones" (Snow, 1959). Thus, educational practices for Education 4.0 should make students "cope-able" to adapt at a faster rate to the continual changes happening around them. They should be able to project the "assumed future".

Moving towards education 4.0 Advancing into Education 4.0 entails reshaping organizational structures, overhauling curricula, and fostering a heightened focus on the future. Education 4.0 indicates that it is time to bring enormous changes in classroom pedagogies. Toffler (1970) said "experiential programming methods, drawn from recreation, entertainment and industry, developed by the psych-corps of tomorrow, will supplant the familiar, frequently brain-draining lecture" which is clearly visible in the present education system. The five building blocks on which the Education 4.0 would build upon are "curriculum, content, capacity, community and digital interventions" (Gupta, 2022). To take advantage of this, teaching-learning must shift from rote learning to inclusive, individualized/personalized. The assessments must shift from memory based to skill based. Therefore, it is high time to introduce new pedagogies which can guide the students to learn, unlearn and relearn. Going in tune with 4IR, the National Education Policy (NEP), 2020 (MHRD, 2020) recommends the use of games and gamification as an innovative pedagogical approach in teaching-learning and assessment. Games play an important role in promoting incidental learning and help in exploring both the conscious elements (ex: - processing information, constructing metal models) and subconscious processes such as insight of a learner. Gamification can be a very useful tool for teaching-learning, can increase learners' motivation and turn learning into an enjoyable process (Bose, Philip, Joseph & Abraham, 2024).

Games, when designed effectively can take the learners from the stage of improvisation to a meta-reflective stage where they can apply the gained competencies/skills to real life situations. They can inform about students' attributes, their on-task or off-task behaviors, competency development related to the targeted subject matter etc. and thus can help in developing customized learning support systems (Ke & Shute, 2015). In the era of ICT, the use of games especially Digital Games (DG) in teaching-learning and assessment is increasing.

## DIGITAL GAMES IN TEACHING-LEARNING

The use of digital games in education will help in adopting competency-based teaching learning approaches and can develop both cognitive and non-cognitive skills of students. Usually when someone plays a game, loses self-consciousness, sense of time, and engage in complex, goal-directed activity not for external rewards, but simply to satisfy intrinsic desires and hence use of digital games can increase the learning of the learners. Digital games can make learning meaningful and joyful; they can help in acquisition of concepts in an engaging way and make it possible to provide immersive learning experiences to the learners. Thus, gamification or gamified learning as an educational pedagogy can make it possible to include game elements in the learning environment. Games in general and digital games in particular have various elements like conflict/challenge; rules, goals/outcomes to achieve, continuous and immediate feedback, intra and inter interactions, multiple solutions etc. which almost match with good instructional design and hence they can be used effectively in teaching learning and assessment process. Digital games used in education can be of various forms like role-playing, puzzles, simulations, quizzes, and massively multiplayer online

  

games (CBSE, 2019). However, one should keep in mind that the digital games created for learning are different from those created for commercial purposes.

Presently two approaches are being adopted in integrating the DGBL (Digital Game Based Learning) in education. One is to use the existing commercial games and the other is to design customized games as per the learning outcomes to be achieved (Homer et al., 2018; Huang, 2011; Kebritchi et al., 2010; Yang, 2012). The games customized as per the learning outcomes can better satisfy the course needs and such games can also be used for assessment purposes. DGBL makes it possible to build multimodal environment in teaching, learning and assessment where the learners can be exposed to the content using various media like text, pictures, music, animation, audio, writing etc. and such environment can reduce the extraneous cognitive loads (Khalil et al., 2005). Digital games have been found beneficial for both students and teachers. Its Integration makes learning easy, attractive, interesting, challenging, flexible, effective, and enjoyable (NCERT, 2021). Different types of digital games influence students' learning in different areas (Jan & Gaydos, 2016). Positive gaming encounters are correlated with elevated self-concept among students (Jain, Kumar, Rajput, 2024). Many experimental studies conducted using various digital games concluded that DGBL influences the academic achievement and motivation of the learners (Woo, 2014). Digital games not only help in reducing the abstractness of the concepts but also have fun elements in them. Most of the millennial learners prefer to play digital games than outdoor games (Khakhariya, 2023) and are skillful in operating devices like tablets, computers, mobile phones, PlayStation, etc. This makes it feasible to consider DGBL as an effective pedagogical approach to make teaching learning process attractive and effective. DGBL integrates games with educational practices and provides opportunities to the learners to solve problems, take decisions, and tackle challenges to acquire higher-order skills. DG's are now being used as accurate behavioral assessment tools to measure a person's behavior directly and objectively (Marder & Polli, 2016). They help in adopting learner-centered assessment strategies which are learning goals oriented, personalized, multimodal and include individual or group elements. Many of the games require players to use and exhibit skills like strategic and analytical thinking, problem identification and solving, decision making, adaptation to change, meaning generation, risk taking, critical judgment, nonlinear navigation etc. that are in demand in today's workforce.

## DIGITAL GAMES IN ASSESSMENT

Quality education is the topmost agenda of almost all the educational policies of India. Education committees, commissions, and policies since independence of India have recognized assessment as an ongoing process and called for fundamental reforms in the purpose, design and implementation of student's assessment (eGyanKosh, 2017). The traditional assessment practices adopted in education are often considered as detached events rarely influencing the learning of a learner and face many validity issues and need lot of improvement (Santiago et al., 2011; Shute & Ventura, 2013). Therefore, it becomes inevitable to explore and implement various alternative approaches of assessments. With decreased cost and increased portability, digital technologies and especially DGs are being considered as assessment tools for creating adaptive testing systems.

When DGs are used for assessment, assessment becomes easy and flexible and decreases the load of the teacher as well as students. Use of DGs as assessment tools make it possible to include a combination of different media and activities like still and moving images, sound and music, and speech and writing, slingshots, puzzles, quiz, role-play, simulation, and massively multiplayer online games (Shute, 2011). Aspects like the tasks to be performed, structure of the game, scope for collecting observable performance indicators, and immediacy of feedback that is provided to learners make DGs an ideal tool of assessment. When developed properly, DGs can assess both procedural knowledge and declarative knowledge of the learners. One such technique of using DGs for assessment purpose is known as stealth assessment (SA). Many games such as Portal2, TAALES, Use Your Brainz, Oblivion, Taiga Park, World of Goo, Physics Playground (Shute & Kim, 2014; Shute et al., 2016) are already in use to assess the learners with the help of their gameplay. Light Lanes, a game developed by the NYU CREATE lab; Newton's Playground, a video game that teaches physics to students (Homer et al., 2018) are some of the well-known DGs.

## STEALTH ASSESSMENTS

Stealth Assessment (SA) is an assessment in disguise which can measure and enhance learning in real time. The main philosophy of SA is to maximize learning without sacrificing the fun. Thus, SA blurs the line between assessment and learning and reduces test anxiety of students without jeopardizing validity and consistency of assessment. It expands the capacity of educators and helps in assessing higher order thinking skills of students accurately and efficiently.

The term 'stealth assessment' was first used by Valerie S. (Shute & Underwood, 2006; Shute et. al, 2005) to describe the automated assessment process through digital games. In SA, the learners are assessed during their digital gameplay using the data originating from the digital traces in electronic learning environments. With the help of AI based Machine Learning (ML) algorithms, the continuous stream of data that is generated as the learner keeps interacting

  

with the game (which includes various hidden aspects like problem-solving, creativity, attention, working memory, reading comprehension, persistence, reflection, exploration etc.) is supplied as evidence and is translated into statistical models that can be analyzed further to understand the learners' competencies and skills. Thus, the relationship between observables from the gameplay and performance of the learners on competency constructs is assessed continuously and accordingly learners are provided with appropriate new challenges as per their competency. Hence, using SAs, teachers can get immediate and in-depth feedback about actions of students, and they can be exposed to tailor made learning support systems. This approach of continually tracking progress while providing immediate automated responses using digital games has been termed 'Stealth Assessment' and is being used in educational games and simulations. SA adopts the approach of competency-based learning, where based on performance of learners in the game their competencies are easily identified, and they are provided further tasks accordingly. Thus, SAs can be used effectively to assess both cognitive and non-cognitive skills of students (Shute, 2011).

The best advantage of using SA is that we can assess the learner without their knowledge when they are so engaged in the gameplay. Most of us play games not for external rewards but to satisfy intrinsic desires and SA takes advantage of this to make valid inferences about what learners know what they can do, and to what degree (usually referred to as "competencies). SA is a way of uniting the two worlds of a learner i.e., what they learn in college and what they like to do best at their own i.e., playing games. SA can prove to be a very good and effective tool to improve learning. Digital games have various elements which almost match with instructional design like rules, challenges, goals, time limit, various alternatives to solve etc. and through SA we can assess such elements easily.

**ELEMENTS OF SA**

The essence of SA as an assessment tool depends on key elements like Evidence Centered Design (ECD), machine learning (ML) algorithms (Georgiadis et al., 2019), formative assessment and feedback to support learning (Shute & Ventura, 2013; Shute, 2011). Its success lies in the extent of concrete evidence it can collect regarding the achievement of competencies of the learners during the gameplay. For this, it is essential to have strong evidence centered designs. Development of ECD needs a multi-disciplinary approach. ECD makes use of technology, computer programming, education, and psychology to enlist the competencies needed to be developed and assessed in the learners. It applies competency learning pedagogy where a learner can be assessed continually during digital gameplay through evidence-based results. Hence, SA should be designed in such a way that it not only helps in assessment of competencies but also provides evidence based supporting claims regarding it. When developing the algorithms, ECD should consider aspects like "what competencies should be measured? How they should be measured? When they should be measured? And to what extent they should be measured". When a learner plays a game, it creates huge traces of digital data. However, the ECD used for SA should be designed in such a way that it collects only those traces which can be counted as evidence for students' competency/skills learnt (Steinberg & Gitomer, 2019) and it should include about how the collected evidence should be statistically linked to variables in the competency model (Mislevy, 1994). Thus, ECD should identify the game indicators which are also known as real-world competencies that would provide evidence about students' learning in various aspects like critical thinking, problem solving, persistence, goal sustenance etc. and should also determine the kind of tasks or situations (quiz, puzzle, simulation, video etc.) that will elicit the evidence. It should engage the learners in iterative processes of the game so that meaningful evidence of learning can be collected with reliability in an objective way. The ECD with the help of ML based algorithms collects the performance data of a learner automatically and statistically gives out the findings regarding the relevant competencies developed in a learner. The data thus obtained can be used effectively for formative assessment, giving proper feedback, designing tailor made instructional designs etc. The ECD should consider learning mechanics, game mechanics and assessment mechanics while integrating DGs in teaching, learning or assessment processes.

Basically, there are two approaches for integrating DGs as assessment tools. One is to build assessment activities into the games itself and record the actions as and when evoked by the players, and the other approach is to collect the game log files of the knowledge, skills, etc. that are being assessed and then analyze them using the ML and statistics. DGs when used for assessment should be designed based on both evidence and competencies. When a player does not achieve the pre desired achievement goals i.e., the learning outcomes, it should allow the learner to continue by replaying segments that caused a discrepancy between their performance and mastery.

Thus, determining the type of games to be used for SA, listing the competencies to be assessed, designing the activities for the same, analyzing the results given by the ML based algorithms and giving feedback and develop customized learning support systems is the task of pedagogy. On the other hand, collecting the evidence created during the game play, linking them and analyzing them using the statistics, giving the results in terms of human understandable language is the task of ML based algorithms. Hence, it is rightly said that development and use of DG's in teaching-learning and assessment requires a multidisciplinary approach.

  

## CHALLENGES IN INTEGRATING DGBL IN TEACHING-LEARNING

Despite an increase in research in DGBL, due to constant questions about its efficiency, DGBL still remains less used among teachers. Development of customized digital games which can be used especially for teaching learning and assessment demands a multi-disciplinary approach. It needs the integration of knowledge from various disciplines like Education, Psychology, Technology, Neuroscience etc. and hence it becomes tough to develop such games. Few scientists claim that video games stimulate only that regions of brain that control vision and movement and other important parts of the brain which are related to aspects like behavior, emotions etc. remain untouched and studies also experimentally proved that those who spend more time online in playing games have less gray matter (thinking part of the brain) than those who spend less time (Paturel, 2014). Hence, integration of DGBL should be preceded with strong research evidence. When the learners play digital games, it requires considerable cognitive investment from them, and they have to demonstrate many higher order thinking skills and other skills. Such an investment can cause cognitive load on them, and it can lead to early interruption or termination from the task and thus DGBL may not yield proper outcomes (Keller, 2008). If the difficulty level of digital games is not determined properly, learners may stop playing games when they are overly easy tasks and on the other hand, they may get discouraged if the tasks are excessively difficult. Hence, a strong strategy to enable learners to exhibit superior performances should always be the objective of the digital games (Wang & Chen, 2010). Establishing the validity and reliability of contribution of DBGL is still in infancy stage and hence requires extensive research both on the technological as well as educational fronts.

## REFERENCES


Bose, B., Philip,Y., Joseph, A., Abraham, M. (2024). Effect of gamification on teaching learning process: A descriptive study. *Indian Journal of Educational Technology*, 6(1), 167-179. ciet.nic.in/flipbook/IJET_Jan_2024/index.html#page=178

CBSE. (2019). Artificial Intelligence Curriculum class IX. Government of India. http://www.cbseacademic.nic.in/ai.html

eGyanKosh. (2017). Issues, Concerns and Trends in Assessment and Evaluation. https://egyankosh.ac.in/bitstream/123456789/46035/1/Unit-4.pdf

Gupta. A. (2022, October 20). *Education 4.0: Importance of fourth Industrial Revolution Technologies*. The Times of India. https://timesofindia.indiatimes.com/blogs/voices/education-4-0-importance-of-fourth-industrial-revolution-technologies/

Homer, B. D., Ober, T. M., & Plass, J. L. (2018). *DGs as tools for embedded assessment*. The Cambridge handbook of instructional feedback, 357-375

Huang, W. H. (2011). Evaluating learners' motivational and cognitive processing in an online game-based learning environment. *Computer in Human Behavior*, 27(2), 694-704.

Jain.P, Kumar.H, Rajput.A.K. (2024). The impact of digital gaming experience on the self-concept of students of Delhi NCR. *Indian Journal of Educational Technology*, 6(1), 214-228. https://ciet.nic.in/flipbook/IJET_Jan_2024/index.html#page=224

Jan.M, Gaydos. M. (2016). *What Is Game-Based Learning? Past, Present, and Future*. Educational Technology Publications, Inc.

Ke, F. & Shute, V. (2015). Design of game-based stealth assessment and learning support. *Serious games analytics*, 301-318. https://myweb.fsu.edu/vshute/pdf/design.pdf

Kebritchi, M., Hirumi, A., & Bai, H. (2010). The effects of modern mathematics computer games on mathematics achievement and class motivation. *Computers & Education, 55*(2), 427-443

Khakhariya. N. (2023, January 10). *Mobile addiction among kids is very disturbing" | Rajkot News - Times of India*. The Times of India. https://timesofindia.indiatimes.com/city/rajkot/mobile-addiction-among-kids-is-very-disturbing/articleshow/96869996.cms

Khalil, M. K., Paas, F., Johnson, T. E., & Payer, A. F. (2005). Interactive and dynamic visualizations in teaching and learning of anatomy: A cognitive load perspectives. *The Anatomical Record Part B: New Anatomist*, 286(1), 8-14.

Marder. B, Polli. F. (2016, September 21). *Want the perfect job in a fair and diverse workplace? There's an app for that*. World Economic Forum. https://www.weforum.org/agenda/2016/09/perfect-job-unbiased-workplace-mercer-pymetrics-app/

MHRD (Ministry of Human Resource Development). (2020). National Education Policy, 2020. Government of India. https://www.education.gov.in/sites/upload_files/mhrd/files/NEP_Final_English_0.pdf

NCERT. (2021). Digital Games for Education, version 1.0. CITE, New Delhi. http://itfdigitalgames.ncert.org.in/wp-content/uploads/2021/02/DigitalGameforEducation.pdf


  

Santiago, P., Shewbridge, C., Nusche, D., & Herzog, H. D. (2011). Evaluation and assessment frameworks for improving school outcomes. Common policy challenges. www.oecd.org/edu/evaluationpolicy

Shute, V. & Ventura, M. (2013). Stealth assessment: Measuring and supporting learning in video games. *MacArthur Foundation*. Retrieved from https://library.oapen.org/bitstream/handle/20.500.12657/26058/1004027.pdf?se

Shute, V. J. (2011). Stealth assessment in computer-based games to support learning. *Computer games and instruction*, 55(2), 503-524.

Shute, V. J., & Kim, Y. J. (2014). Formative and stealth assessment. *In Handbook of research on educational communications and technology* (311-321). Springer, New York, NY.

Shute, V. J., Wang, L., Greiff, S., Zhao, W., & Moore, G. (2016). Measuring problem solving skills via stealth assessment in an engaging video game. *Computers in Human Behavior*, 63, 106-117.

Snow, C. P. (1959). *The Two Cultures and The Scientific Revolution*. New York: Cambridge

Toffler, A. (1970). Future shock, 1970. Sydney. Pan.University Press.

Woo, J. C. (2014). Digital game-based learning supports student motivation, cognitive success, and performance outcomes. Journal of Educational Technology & Society, 17(3), 291-307.

Yang, Y.-T. C. (2012). Building virtual cities, inspiring intelligent citizens: Digital games for developing students' problem solving and learning motivation. Computers & Education, 59(2), 365-377

  

# LEARNING DIFFICULTIES AND REMEDIAL TEACHING IN MATHEMATICS: INSIGHTS AND INTERVENTIONS FOR EDUCATORS

Mr. Kevinson Jyrwa
Research Schola, Department of Educatio, North Eastern Hill University, Shillong
kjrollinz@gmail.com

Prof. Sherwin May
Professor, Department of Education, North Eastern Hill University, Shillong
smsungoh@gmail.com

**ABSTRACT**
The paper " Learning Difficulties and Remedial Teaching in Mathematics: Insights and Interventions for Educators " provides a comprehensive overview of the challenges faced by students with learning difficulties, particularly in the realm of mathematics. This paper emphasizes the importance of understanding the nature of these difficulties, which can range from basic numeracy issues to complex mathematical concepts. It discusses various manifestations of learning difficulties, including problems with mathematical operations, word problems, spatial awareness, memory issues, and math anxiety. The paper advocates for remedial teaching as a crucial intervention strategy, detailing effective teaching methods such as error analysis, concrete-to-abstract learning, differentiated instruction, and the use of technology. By fostering a supportive learning environment and encouraging a growth mindset, educators can help students overcome their challenges and develop a positive relationship with mathematics, ultimately enhancing their academic success.
**Keywords:** Learning difficulties, Remedial teaching, Mathematics

## INTRODUCTION

Learning difficulties refer to challenges that individuals face in acquiring and processing information effectively. These difficulties can manifest in various forms, such as struggling with reading, writing, math, or other academic skills. The research indicates that mathematical difficulties are prevalent among children with reading disabilities, with estimates suggesting that about 60% of dyslexic students also face challenges in mathematics. Overall, around 6% to 7% of the school-age population is believed to suffer from mathematical difficulties, which can manifest in various forms, from basic numeracy issues to difficulties with more complex mathematical concepts (Karibasappa et al., 2008). Learning difficulties and remedial teaching are closely intertwined concepts in education, with the latter serving as a crucial intervention strategy for students facing challenges in their learning journey. Individuals with learning difficulties may require specialized support and interventions to help them overcome these challenges and reach their full potential. Understanding the nature of these difficulties is crucial for designing effective educational programs and interventions tailored to meet the unique needs of each learner. (Alvarez Marinelli et al., 2024). Remedial teaching is an instructional approach designed to help students who are struggling with specific subjects or skills. Its primary goal is to identify and address the root causes of a student's difficulties, rather than merely providing extra practice or repetition of the same material.

## UNDERSTANDING LEARNING DIFFICULTIES

Learning difficulties refer to a variety of disorders that affect an individual's ability to learn in a typical manner. These difficulties are not indicative of a person's intelligence level but rather reflect challenges in processing information. Learning difficulties are specific challenges that individuals face in acquiring knowledge and skills, which can impede their academic performance and overall learning process. These difficulties can manifest in various ways, such as struggles with reading, writing, mathematics, or other subjects, and may arise from a variety of factors, including cognitive, emotional, or environmental influences. (Purohit, 2017)
Key characteristics of learning difficulties include:
***Persistent challenges:*** Learning difficulties are often persistent and can affect a student's ability to perform tasks that are typically expected at their age or grade level.
***Individual variability***: Each student may experience different types of learning difficulties, which can stem from unique causes such as lack of mastery over content, misconceptions, or difficulties in visual interpretation.
***Impact on learning****:* These difficulties can hinder a student's ability to fully engage with the curriculum, leading to frustration, low self-esteem, and a lack of motivation.
***Need for specialized instruction:*** Students with learning difficulties often require tailored instructional strategies and interventions to address their specific needs and help them succeed academically.

## LEARNING DIFFICULTIES IN MATHEMATICS

Learning difficulties, particularly in mathematics, pose significant challenges for many children, impacting their academic performance and overall self-esteem. Learning difficulties in mathematics can manifest in various ways,

  

significantly affecting a child's ability to grasp mathematical concepts and perform calculations. A detailed overviews of common learning difficulties encountered by students in mathematics are:

***Dyscalculia:*** Dyscalculia is a specific learning disability that directly impacts an individual's ability to understand numbers and perform mathematical operations. Children with dyscalculia may struggle with basic arithmetic, have difficulty memorizing math facts, and often find it challenging to grasp the concept of quantity. They may also have trouble with tasks that require counting, estimating, or recognizing patterns.

***Difficulty with number sense:*** Number sense refers to a child's intuitive understanding of numbers and their relationships. Children who struggle with number sense may have difficulty understanding concepts such as greater than or less than or they may find it hard to compare quantities. This foundational skill is crucial for more advanced mathematical learning, and its absence can lead to significant challenges in later math education.

***Problems with mathematical operations:*** Many children experience difficulties with basic mathematical operations, including addition, subtraction, multiplication, and division. They may struggle to remember the steps involved in these operations or apply them correctly in different contexts. For instance, a child might understand how to add single-digit numbers but find it challenging to add larger numbers or perform multi-step calculations.

***Word problem:*** Word problems can be particularly daunting for children with learning difficulties. These problems require not only mathematical skills but also reading comprehension and the ability to translate verbal information into mathematical equations. Children may struggle to identify the relevant information in the text, leading to frustration and avoidance of such tasks.

***Spatial awareness issues:*** Mathematics often involves spatial reasoning, which is the ability to visualize and manipulate objects in space. Children with spatial awareness difficulties may find it hard to understand geometric concepts, interpret graphs, or visualize shapes. This can hinder their ability to solve problems that require an understanding of spatial relationships.

***Memory issues:*** Working memory is essential for performing mathematical tasks, especially those that involve multiple steps. Children with memory difficulties may struggle to hold onto information long enough to complete calculations or follow through on problem-solving processes. For example, they might forget the steps needed to solve a multi-step equation or lose track of numbers during calculations.

***Anxiety and negative attitudes towards math:*** Math anxiety is a common issue that can significantly impact a child's performance. Children who have had negative experiences with math may develop a fear of the subject, leading to avoidance behaviours and a lack of confidence. This anxiety can create a cycle where the fear of failure further exacerbates their difficulties in learning math.

***Difficulty with mathematical language:*** Mathematics has its own language, filled with specific terminology and symbols. Children who struggle with understanding mathematical language may find it challenging to comprehend instructions or the language used in math problems. This can lead to confusion and mistakes, as they may misinterpret what is being asked of them.

***Inconsistent performance:*** Some children may exhibit inconsistent performance in mathematics, excelling in certain areas while struggling in others. This variability can be confusing for both the child and their educators, as it may not reflect a lack of effort or ability but rather specific areas of difficulty that need to be addressed.

***Lack of practice and exposure:*** Children who do not receive adequate practice or exposure to mathematical concepts may fall behind their peers. This lack of engagement can be particularly pronounced in environments where resources and support for learning math are limited. Without regular practice, even children with a natural aptitude for math may struggle to develop their skills.

## REMEDIAL TEACHING STRATEGIES IN MATHEMATICS

Remedial teaching strategies in mathematics are designed to support students who struggle with mathematical concepts and skills. These strategies aim to identify specific areas of difficulty, provide targeted instruction, and foster a positive learning environment. A detailed overview of effective remedial teaching strategies in mathematics are:

***Error analysis:*** Error analysis involves examining the mistakes students make in their mathematical work to identify patterns and underlying misconceptions. By understanding where and why errors occur, educators can tailor their instruction to address specific weaknesses. This process encourages teachers to avoid simply correcting mistakes and instead focus on helping students understand the concepts behind their errors. For example, if a student consistently misapplies a mathematical operation, the teacher can provide targeted practice and explanations to clarify the concept.

***Concrete to abstract learning:*** Many students with learning difficulties benefit from a concrete-to-abstract approach. This strategy involves using physical objects (manipulatives) to teach mathematical concepts before moving to abstract representations (numbers and symbols). For instance, when teaching addition, teachers might use blocks or counters to visually demonstrate how numbers combine. Once students grasp the concept with manipulatives, they can transition to using numerical equations.

**Visual *aids and graphic organizers:*** Visual aids, such as charts, diagrams, and graphic organizers, can help students better understand mathematical concepts. For example, using number lines, pie charts, or bar graphs can

  

make abstract ideas more tangible. Graphic organizers can also help students break down complex problems into manageable steps, facilitating a clearer understanding of the problem-solving process.

***Small group instruction:*** Small group instruction allows for more personalized attention and tailored teaching. In a small group setting, teachers can focus on specific skills that students need to develop, providing targeted practice and immediate feedback. This environment also encourages collaboration among peers, allowing students to learn from one another and build confidence in their abilities.

***Differentiated instruction:*** Differentiated instruction involves adapting teaching methods and materials to meet the diverse needs of students. This can include varying the difficulty level of tasks, providing different types of resources, or using various instructional strategies to engage students. For example, some students may benefit from hands-on activities, while others may prefer visual or auditory learning methods. By differentiating instruction, teachers can ensure that all students have access to the support they need.

***Use of technology:*** Incorporating technology into remedial teaching can enhance engagement and provide interactive learning experiences. Educational software and apps designed for math practice can offer personalized learning paths, allowing students to work at their own pace. Online resources, such as instructional videos and interactive games, can also reinforce concepts in a fun and engaging way.

***Mastery learning:*** Mastery learning is an instructional approach that emphasizes achieving a high level of understanding before moving on to new material. In this strategy, students are given multiple opportunities to practice and demonstrate mastery of a concept before progressing. Teachers can use formative assessments to gauge understanding and provide additional support as needed. This approach helps build a strong foundation, ensuring that students are well-prepared for more advanced topics.

***Real-Life applications:*** Connecting mathematical concepts to real-life situations can make learning more relevant and engaging for students. Teachers can use practical examples, such as budgeting, cooking, or shopping, to illustrate how math is used in everyday life. This approach not only enhances understanding but also helps students see the value of mathematics beyond the classroom.

***Encouraging a growth mindset:*** Fostering a growth mindset in students is crucial for their success in mathematics. Teachers can encourage students to view challenges as opportunities for growth rather than as insurmountable obstacles. By praising effort, resilience, and progress, educators can help students develop a positive attitude towards math and build their confidence in their abilities.

***Regular feedback and assessment:*** Providing regular feedback is essential for helping students understand their progress and areas for improvement. Teachers should offer constructive feedback on assignments and assessments, highlighting strengths and suggesting specific strategies for improvement. Additionally, ongoing assessments can help educators monitor student progress and adjust instruction as needed.

## CONCLUSION

In summary, learning difficulties in mathematics are complex and multifaceted, requiring a comprehensive understanding on various factors related to that problem. Remedial teaching strategies in mathematics are essential for supporting students who face challenges in learning. By employing a variety of approaches, such as error analysis, concrete learning, differentiated instruction, and the use of technology, educators can create a supportive and effective learning environment. These strategies not only help students overcome their difficulties but also foster a positive attitude towards mathematics, ultimately leading to greater success in their academic journey. By implementing effective teaching strategies and providing timely support, educators can help students overcome these challenges and develop a positive relationship with mathematics.

## REFERENCES

Alvarez Marinelli, H., Berlinski, S., & Busso, M. (2021). Remedial Education: Evidence from a Sequence of Experiments in Colombia. *The Journal of Human Resources, 59*(1), 151-172. https://doi.org/10.3368/jhr.0320-10801R2

Febriyanti, A., Mustadi, A., & Jerusalem, M. A. (2021). Students' learning difficulties in mathematics: How to diagnose and remediate. *Jurnal Pendidikan Matematika*, *15*(1), 23-36. https://doi.org/10.1088/1742-6596/1157/3/032095

Karibasappa, C. N., Nishanimut, S. P., & Padakannaya, P. (2008). A remedial teaching programme to help children with mathematical disability. *Asia Pacific Disability Rehabilitation Journal*, *19*(2), 76-90.

Purohit, A. R. (2017). Diagnosis of learning difficulties & remediation: A road to enhance learning outcomes. *Samwaad: e-Journal*, *6*(2), 149-153.

Selvaganapathy, R., & Benjamin, A. E. W. (2022). Remedial teaching technique to overcome learning difficulties in chemistry at the higher secondary level. *International Journal of Health Sciences, 6*(S1), 7843–7849. https://doi.org/10.53730/ijhs.v6nS1.6727 .

  

# PERSPECTIVES ON HIGH-IMPACT PRACTICES FOR AN EXCITING EDUCATIONAL EXPERIENCE

B.H.S. Thimmappa
Alliance School of Sciences
Alliance University, Bangalore-562106, Karnataka, India
thimmappabhs@gmail.com

**ABSTRACT**
The collective future of humanity depends on focusing on the meaningful pursuit of new knowledge created from higher-order thinking skills learned from high-impact teaching strategies (HITS) adapted by the best teachers. Engaging the learners in the learning process through innovative teaching-learning methodologies, reinforcing the core concepts via active learning, and adapting tools, techniques, and ideas to comprehend domain-specific knowledge makes the classes more interesting and productive, and makes a paradigm shift in the teaching-learning process. This paper emphasizes the importance of implementing alternate HITS in higher education across multiple disciplines while conducting interactive sessions to have a substantially higher effect on student results. It will boil down to a direct interaction of the learner with the subject to largely improve upon the student's performance.
**Keywords:** Teaching-learning Interactions, High-Impact Teaching Strategies, Excellence in Education, Teaching art, Topic Understanding

## 1. INTRODUCTION

Engaging the learners on the learning curve and reinforcing the core concepts/principles/ideas/applications in various disciplines would enable them to grasp the topics. Learning and developing a set of instructional practices and a ladder of processes using advanced technology-driven teaching, dynamic academic edge, and vigorous assessment systems to pursue different career goals require nurturing and channeling talent as the first step under expert guidance and mentorship. The framework for 21st-century learning skills involves 4 Cs, critical thinker (solving problems), communicator (understanding and communicating ideas), collaborator (working with others), and creator (producing high-quality work). The real challenges ahead to shape a better future for humankind involve preparing individuals who are academically accomplished, professionally dedicated, emotionally balanced, morally upright, socially responsible, and ecologically sensitive. Transformative higher education involves experiencing a deep, structural shift in the basic premises of thought, feelings, and actions in human resources with intellectual potential (Author, 2017, 2016, 2015, 2014, 2014, 2013, 2013). We must recognize the switch in the learning styles from formalistic lecturing style (pedagogy) to learner-centered flexible style (heutagogy) (Halupa, 2015, Patel, 2018). Learner maturity and autonomy are considered in a learning-based model over instructor control and course structuring in an instruction-based model. The mismanagement of important learning elements in classroom practices and the failure to monitor deliverables impact the entire knowledge transfer chain. The use of active learning techniques, exposure to diverse ideas, and high-impact practices inspire the learners and help in unique value creation in higher education ecosystem, fostering student achievement and well-being. This paper reviews best practices in higher education system with illustrative examples and explains the tools, techniques, and ideas to make classes more interesting and productive. These active learning examples demonstrate learner knowledge construction, relevance of a topic in daily life, a balance between theory and practice, and a paradigm shift from a passive to an active education system.

Teaching strategies like explicit teaching, goal setting, collaborative learning, questioning spirit, constructive feedback, meta-cognitive strategies, and internships are some high-impact practices to enhance learner engagement and are useful in subject realization in higher education institutions. Other important interactive teaching strategies include intellectual debate, peer tutoring, brainstorming, classroom discussion, seminars/symposia/tutorials/assignments, laboratory sessions, concept mapping/worked examples, role play, games, puzzle technique, case study discussion, impersonation, mnemonic technique, workshop/panel discussion/academic debate, demonstration, real-world applications, and innovative introductions/conclusions as they make the learning even more exciting (Baepler et al., 2016; McLaughlin, 1996; Fink, 2016; Knight, 2012; Orlich et al., 2010; Raba, 2017, Bomia, et al., 1997; Killen & O' Toole, 2023). We describe the active learning techniques below with illustrative examples to develop a learner-centric culture that helps break the monotony of the session. The examples of a few activities can be replicated and conducted to have an interactive educational experience, taking teaching innovation to the next level and making a strong academic representation of a topic. These special teaching techniques and tones provide a markedly different learning experience than the conventional methods in a journey beyond analyzing in the revised Bloom's taxonomy (Anderson & Krathwohl, 2001). Interestingly, exciting new educational experiences with creative and useful perspectives empower the faculty in their journey toward excellence in higher education.

  

## 2. BRAINSTORMING TECHNIQUE

It is a creative thinking technique for generating new ideas and solutions (Al-Samarraie & Hurmuzan, 2018; Hender et al., 2001; Rickards, 1999; Ritter & Mostert, 2018; Paulus & Kenworthy, 2019). It encourages new ways of thinking in problem-solving individually or collectively in response to a prompt. Individual or group brainstorming in the classroom can contribute and develop many ideas. After introducing the various types of binary relationships (one-to-one, one-to-many, many-to-one, and many-to-many) in a computer science class, the facilitator can test the learners' conceptual understanding by asking them to spell out a few real-time relationships sets. A car company selling a car product to a customer, a teacher taking a class for students, learners submitting assignments to the faculty, and students joining different courses are some of the relationships the students may identify. One can list on the board and discuss the correct responses on the merits of electric heating by forming two groups of learners. The consolidated list of points could include the absence of flue gases, cleanliness, ease of temperature control, automatic protection against overheating, high-efficiency utilization, and low cost. The facilitator can then explain the advantages of electric heating using the list generated by brainstorming.

## 3. CASE STUDY DISCUSSION

It is an in-depth study of exploring and analyzing a particular person, group, institution, or event over a period in a real-world context (Dart & Clarke, 1991; Welty, 1989; Gilbert & Dabbagh, 2005; Wu, 2016; Parker, 2001). It is an empirical inquiry using a rigorous research design and single or joint application of research methods to collect and analyze data. Case study analysis is an active, problem-based, learner-centered, faculty-facilitated strategy that helps develop critical thinking skills. Real or constructed problem-based case studies are useful in introducing a concept/theory, resolving conflicts, analyzing problems, evaluating proposals, understanding the gravity of an issue, and developing curiosity. In explaining the everyday applications of Ohm's law, learners can be divided into 3 groups, and ask each group to select a wire of suitable size that can withstand the ratings of a domestic geyser, an air conditioner, and a refrigerator. This activity makes the learners appreciate the relevance of the law in daily life and its significance in designing any electrical circuit. A global warming case study can be used to introduce beginners to scientific reasoning and data analysis. The chemistry of life case study can help understand health conditions like diabetes and the importance of diet, nutrition, and exercise. A case study to implement the 12 green chemistry principles as a part of the corporate social responsibility initiative of a multinational company can reveal the challenges in communicating the technicalities of the green principles like atom economy or design for energy efficiency to consumers. The case study could involve the design and development of a cancer drug from initial research to its use in humans. These sample case studies in different disciplines help learners to understand topics in real-world situations.

## 4. DEMONSTRATION METHOD

It is a practical exhibition and explanation of how a product/process/system works (Behnke, 1975; Giridharan & Ramasamy, 2016; Sever, 2013; Umara, 2022). Learning by observation provides an opportunity for learners to understand the topics most naturally. A demonstration would be well-suited for explaining the working principle of a battery, and it can be made interactive by asking relevant questions, ensuring learner participation. The active functional components of a lead acid battery can be demonstrated by taking a working lead acid battery from an automobile workshop in the classroom. The learner group or the facilitator can open and identify the different components of the battery system and write their names on the board. It is better to explain the function of each part of the system to reinforce learning. The demonstration can be made more interactive by asking relevant designing/logical questions on the topic at the right time holding the particular component in hand. We could encourage the learners to draw a schematic diagram of the battery and write the details of major components in the form of a table. At the end of the session, the participants should be able to identify the different parts of a battery system and explain their functions. Similarly, different materials such as chalk/glass pieces, and plastic/copper wires taken to the classroom can be used to demonstrate the two types of fractures viz. brittle and ductile types. The group of students can be asked to break the materials and write their observations on the board. The teacher can explain the ductile fracture in plastic/copper wire as the one that involves extreme plastic deformation while the brittle fracture occurs in chalk/glass by cleavage due to the tensile stress acting normal to the crystallographic planes with weak bonding. Hands-on activities using the necessary materials allow the participants to learn by doing in a more interactive way, and direct practical experience helps learners understand concepts or practice skills.

## 5. GAME-BASED ACTIVITIES

Games can be effective teaching tools because of more learner involvement, improved problem-solving, development of critical thinking, and enhanced team spirit (Pivec, 2009; Tham & Tham, 2014; Holmes & Gee, 2016; Hartt, et al., 2020; Cadiz, et al., 2023). Digital/board/word/card/video/hybrid game-based (individual/team) learning is altering education as it makes learning more engaging and interactive. It is designed to balance content area learning with gameplay and is an immersive activity promoting a state of flow. Learners can explore scientific

  

phenomena through interactive simulations like virtual chemistry experiments on titrations, weather-spreading patterns, flash-fire in explosive-reaction scenarios, challenge-response games on digital systems, or 3D models of the human body systems. A word game can introduce learners to commonly used building materials like cement, wood, brick, steel, sand, paint, and glass to help recall their properties and uses. The faculty can display a few words using a laptop that contains the name of one building material hidden in it (comprehensibility, wondrous, bicker, stalemate, polyandrous, flippant, glossary). The learners are tasked to identify the material and give the meaning of the word displayed. A snake and ladder game can be played using a board and a die to revise a topic. We have to associate each square with a question on a topic such as catalysis or network security. The entire class can be divided into two groups. Each group will have to answer the question associated with the square which is reached after moving the die. It can be passed on to the other group, if not answered. The facilitator can discuss the questions unanswered or skipped in the end.

## 6. GROUP DISCUSSION

This is a structured group conversation to exchange ideas/opinions on a specific topical topic or a problem (Garside, 1996; Johnson & Mighten, 2005; Rahmat, 2017; Tsang, 2011). A moderator facilitates a panel discussion on an issue/current event. This learner-centric approach promotes a deeper understanding of a topic and increases long-term retention. Group discussion is an effective teaching technique as it helps develop critical thinking, improve focus and communication, increase retention, and share ideas/experiences/perspectives/opinions. It is a cooperative problem-solving activity that seeks consensus on the solution to a problem and enhances the ability to articulate and defend a position thoughtfully. It could be factual/opinion-based/case studies-based/abstract with clearly defined objectives, and a question outline. The group members should have basic knowledge about the topic to be discussed to become effective as a teaching methodology. The group discussions can help learners learn from each other, improve critical thinking, be more involved, and feel more confident.

## 7. MNEMONIC TECHNIQUE

This teaching strategy helps learners remember information by using keywords/acronyms/phrases/visual or auditory clues to connect new information to existing knowledge (Farrokh, et al., 2021; Jurowski, et al., 2015; Scruggs, et al., 2010). The acronym VIBGYOR represents the colors of the rainbow in order violet, indigo, blue, yellow, orange, red, and ABR in chemistry classes represents the fact that the acid turns blue litmus red. The use of songs, stories, or rhymes that relate to the information can be fun and easy to learn and help students retrieve information using this memory technique. My very educated mother just served us nine pizzas representing the nine planets in order Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, Neptune, and Pluto. The initial letters of the sentence “faculty training in electronics communication engineering and technology” could represent the names of six basic concepts of total quality management (TQM), i.e. focus on the customer, treating suppliers as customers, effective involvement and use of the entire workforce, continuous improvement, establishing performance measures, and top management commitment. Learners can easily memorize the above sentence, recall the initial letters of the six basic concepts of TQM, and explain the listed concepts. Similarly, RAMP is a mnemonic device for recognizing hazards, assessing the risks, minimizing the risks, and preparing for emergencies in the management of chemical safety in academic laboratories.

## 8. ACADEMIC ANALOGIES

This requires the learner to analyze a thing and transfer that analysis to another thing to understand a concept (Glynn, et al., 2012; Taber, 2013; Holyoak & Richland, 2013; Gray & Holyoak, 2021; Clement, 1998). The target analogy is used to teach the difference between accuracy and precision. Measurement accuracy is the closeness to the actual value while precision is the reproducibility of each measurement. In the target analogy, accuracy is measured by the average position of the arrows closer to the bull’s eye and precision is measured by closely spaced arrows though far from the bull’s eye. The closer the arrow is in the bull’s eye, the more accurate the measurement is, and if the arrows are closely spaced though they are away from the bull’s eye, the shooting is considered precise. Analog concepts help learners understand new target concepts by comparing them to known things. They are useful in explaining complex ecosystems/photosynthesis that is hard to visualize. The atomic system is analogous to the solar system in many ways; the central body (nucleus/sun), orbiting bodies (electrons/planets), mutual force, orbits, and distance are common to both systems.

## 9. PUZZLE/JIGSAW TECHNIQUES

This methodology uses a puzzle analogy in a cooperative learning strategy for subfields of science (Bagheri, et al., 2018; Hussin, et al., 2019; Aggarwal, et al., 2023; Egiluz, 2019). After forming the students’ groups, assign smaller pieces (puzzle pieces) of the topic, and the students of one group can explain their piece using examples, analogies, or details to the other group. At the end of the given time, students in one group can exchange their solutions with the other group, followed by a discussion with a complete understanding of the topic. Three groups of students can describe the characteristic features of three types of rocks and compare them for

  

similarities and differences. Similarly, two groups of students can share their knowledge with others, wild animals' habitats, or predators to complete a common task of tabulating and discussing their role in ecosystems. Mind map puzzles can be used to learn the classification of polymers. This exercise consists of identifying each type of polymer based on the keywords/phrases/characteristic features provided on the board. Alternatively, group the types of polymers, provided in the form of stickers, by pasting them under the correct headings. Here, six criteria for the classification of polymers are listed in the puzzle, and important points specific to each class can be written on the board.

## 10. MATCH THE COLUMNS

The matching type test provides a way for learners to connect a word/phrase/sentence in one column (premises) to a corresponding item in the second column (responses) in several sub-discipline categories (Iriyani & Silitonga, 2013; Setiawan, 2023; Pagliaro, 2011; Sulla, 2023). We can display the table and ask the learners to match the terms in column I with the appropriate descriptions in column II. Column I-Silicon, Silicone, Silica, Silicates; Column II-a chemical compound of formula $SiO_2$, minerals containing silicon and oxygen in tetrahedral $SiO_4^{4-}$ units, a polymer with repeating units of siloxane $(-O-R-R_2Si-O-SiR_2-)_n$ where R = organic group, a chemical element with symbol Si and atomic number 14. Similarly, different types of stains (coffee, lipstick, ink, rust, grease/oil, perspiration) and methods of removal (ammonia, hydrocarbons, ethylene dichloride, citric acid, sodium hypochlorite, oxalic acid) can be listed in two columns, and ask the randomly selected learners to match the correct entry in the other column. This is a very efficient approach to assessment, covers more content in one question, allow testing of higher-order thinking skills, and provides an excellent objective measurement. The constructive role of subject experts in sharing knowledge about the topics to spark the learner's interest enhances each learner's experience and brings in the much-desired level in academic discussions and debates plays a pivotal role in promoting quality in higher education spaces like universities/institutions.

## 11. INNOVATIVE INTRODUCTIONS/CONCLUSIONS

The innovative introduction provides a general understanding of the overall topic, the relevance of the topic, and the specific purpose (Afdal & Spernes, 2018; Creedon, 2004; Afdal & Spernes, 2018; Sumathi, 2022; Sivarajah, et al., 2019). Water is a fundamental substance and an integral part of life. Faculty can display different apparent types of water such as raw water, turbid water, potable water, fresh water, salt water, hard water, soft water, distilled water, tap water, mineral water, alkaline water, infused water, and so on. The session on real kinds of water can be introduced by mentioning many different water types commonly found including the solid, liquid, and gaseous forms. Then select six learners to stand in other places and they can be named according to the isotopes of hydrogen and oxygen-protium ($^1H$), deuterium ($^2H$), tritium($^3H$), $^{16}O$, $^{17}O$, and$^{18}O$. Then we can ask other learners in the class to count the total number of isotope kinds of water using different permutations and combinations of the three isotopes of hydrogen and oxygen by taking the water formula as $A_2B$. The teacher can discuss the properties of regular water, heavy water, and super-heavy water. This activity results in the engagement of students, fostering active participation in the teaching-learning interactions. The session on fire classes can be concluded by recalling the six classes of fires and their source materials. Class A-Ordinary combustibles (wood, paper, cloth), B- Flammable liquids (oils, paints, gasoline), C- Electrical equipment (wire, fuse box, phone chargers), D-Combustible metals (magnesium, sodium, lithium) and K-Combustible cooking (vegetable oils, fats, grease). We can ask five learners to represent five classes of fires. One of the learners says one source of any class of fire and the other learners must identify whether the stated source belongs to the class of fire they represent. This exercise can continue till all the sources and classes discussed during the session have been covered. The creative ways of introducing/concluding a topic to make the students understand also make them enjoy learning and find this intense experience interesting.

## 12. KNOWLEDGE TEST QUIZZES

A quiz is a time-tested technique to revise the main concepts related to any topic and/or test learners' knowledge interestingly and engagingly (Shafiq & Siddiquah, 2011; Romero, et al., 2021; Cook & Babon, 2017; Rothe et al., 2021). Effective questioning is a powerful tool that engages students and stimulates interest and curiosity in learning. It opens up opportunities for learners to discuss, argue, express opinions, and present alternative points of view. We get immediate feedback on student understanding, support formative assessment, and capture feedback on the effectiveness of teaching strategies. The questions can be prepared by the teacher on PPT slides which can be projected in the class using a projector system. At the end of a session, a convergent/divergent, factual/rapid-fire quiz can be planned to make the revision more effective and beneficial to every learner in the class. We can conduct innovative quizzes by forming two groups of students. One group member can ask a question on the 'chemical bonding' topic to the other group and the students in the other group shall answer the questions. The correct question and answer shall get one mark and the wrong questions/answers shall lose one mark. If one group fails to answer any question, then the other group would get the opportunity to answer and get bonus points. The groups can switch their roles after the first round. The winning group will get

  

the chance to distribute chocolates. Sample questions: i) what is the difference between primary and secondary bonds? What is meant by London Force? iii) What are the consequences of hydrogen bonding? Name the different types of secondary bonds. A quiz can be conducted on various topics using multiple choice questions (MCQs) or a rapid-fire picture quiz that can be displayed using a PPT. Conducting a clue-based quiz/lucky-draw quiz/cyclic quiz to conclude a session or a discussion followed by a picture quiz on the properties of liquid crystals/supercritical fluids would make an efficient teaching experience.

## 13. ROLE-PLAY/SIMULATION STRATEGIES

It is a powerful creative instructional strategy and experiential learning where learners (individual/group) take on assigned roles and act out those roles through a scripted play that enhances communication skills and develops insights (Erturk, 2015; Alabsi, 2016; Rashid & Qaisar, 2017; Stevens, 2015). Role-play allows learners to explore realistic situations by interacting with other people in a managed way to develop a participative learning experience. Students can role-play interview scenarios (interviewer/interviewee) restaurant situations (waiters/guests), and company management (administrator/worker). Students can act out the life cycle of a plant or animal and discuss what they learned. Learners can enact predator-prey relationships or dramatize their real reactions to certain problematic situations. It is better to follow up by brainstorming for solutions to the problem. The facilitator can present a problem that can be approached from differing perspectives and the group members discuss the problem by simulating the perspective of the assigned role. Symbolic role-play can be used to teach chemical reactions that are invisible and rapid where the students act as atoms/molecules holding a placard. They can hold hands indicating bond-making, move their bodies to represent the course of a chemical reaction involving rearrangement, and detach the hands suggesting the breaking of the bond. The reaction between the dioxygen molecule containing the oxygen-oxygen double bond and the carbon on heating to give carbon dioxide can be understood by role-play.

## 14. SEMINAR TECHNIQUES

A brief presentation by a learner on a specific topic, discussion, and question-answer session is a student-centric practice-oriented activity that helps improve reading, writing, and talking skills (Rave & Botero, 2008; Liu, et al., 2024; Gomathi, et al., 2014; Waring, 2000). Presenters can use the 'chalk and talk' method or PPT presentation technique. In student seminars, the teacher should monitor discussion, keep it within limits, and evaluate/grade based on different criteria. This method helps develop higher cognitive abilities, the ability to respond, develop a keen sense of observation, and the ability to seek clarification in the cooperative environment of the participants. It should be an integral part of student training where the exchange of ideas/facts, stimulation of thinking, and learning of specific techniques in a particular topic takes place. This high-impact practice must be cultivated, refined, and perfected in an academic setting. Important steps to ensure a confident and effective delivery include speaking practice, eye contact, images/videos, interesting points, voice modulation, slide design, and interactive presentation. In this experiential learning technique, the students will understand and remember the key concepts/principles, technical terms, relationships, and applications.

## 15. PROBLEM-BASED LEARNING (PBL) METHOD

The real-world problems are used to promote the learning of concepts/principles (Peterson, 2010; Hung, et al., 2008; Kwan, 2009; Schwartz, 2013; Duch, et al., 2001). The students are assigned a problem. The PBL process is based on several steps including problem scenarios, identifying the key facts, brainstorming missing information, self-directed learning, assimilating the new knowledge, applying the information, and analyzing the results. It helps in students' motivation to understand concepts, incorporate objectives, connect them to previous knowledge, and defend decisions with logical reasoning. Student-centric activities like project/research work and case studies are typical PBL problems where they identify what we know and learn and apply to solve the assigned real-life problem through a collaborative approach and critical reasoning. All-terrain wheel-chair design challenges can be taken up by a group of students to create ways to make such a product. This approach promotes critical thinking skills, problem-solving skills, interpersonal communication skills, and teamwork spirit. A PBL framework requires examining the real-world problem from every perspective and exploring solutions from a variety of angles.

## 16. MULTI-MEDIA PRESENTATIONS

Multimedia presentations used in education settings include texts, images, audio, videos, and animations that are often more engaging than traditional presentations (Bochina, et al., 2014; Artal-Sevil, et al., 2018; Syafii, et al., 2019; Rusli, et al., 2014). Anecdotes, examples, statistics, personal experiences, interactive quizzes, virtual experimentations, and computer simulations make it easier for the audience to understand the dynamic content. Proper content development on various scientific topics using graphics, sound, transitions, documents, and video requires skill, effort, time, and energy to be more effective and user-friendly. This interactive presentation can hold attention, stimulate discussion, and create clarity in the subject matter to enhance learning and development. It can

  

lead to better retention via the usage of multiple senses to experience information. The key points can be highlighted using sound effects, creative visualizations, or animations increasing learning effectiveness. Multimedia presentations can simplify complex functions of the different organ systems (skeletal, muscular, nervous, endocrine, cardiovascular, lymphatic, respiratory, digestive, urinary, reproductive, and integumentary) in the human body and help visual learners to understand the content better. It would help understand abstract concepts difficult for learners to comprehend and visualize.

## 17. EXPERIMENTATION AND MODELING PRACTICE

This instructional strategy emphasizes the importance of learning from mistakes and taking corrective actions during experimentation/modeling (Schauble, et al., 1991; Montoya, 2017; Besson, et al., 2010; Huang, et al., 2019). They help learners develop problem-solving, time management, and teamwork skills and engage them in the learning process. It is essential to share their ideas and goal setting, collect the items required, engage with actual experimentation, and reflect on the overall process. This technique involves a cycle of four elements concrete experience, reflective observation, abstract conceptualization, and active experimentation. It is better to focus on a single concept around the topic discussed in the class in this inquiry-based learning exercise. Here, the students explore and investigate the topics actively and understand the challenges involved in putting the concerned theory into practice. Asking relevant questions and encouraging research to construct their understanding of a topic promotes critical thinking and fosters curiosity in learners.

## 18. BLENDED LEARNING METHODS

Finally, match tuning of two or more methodologies fosters a remarkable learning journey in the higher education landscape (Khalil, et al., 2018; Pereira, et al., 2007; Kaur, M. (2013; Cleveland-Innes & Wilton, 2018). A blend of demonstration and discussion, using a set of questions and a demonstration, analogy followed by a set of convergent questions, a word game followed by a set of questions, a few questions based on an analogy, role play based on the analogy, problem/project-based case studies, discussion followed by picture quiz, insightful infographics followed by academic debate, and crossword puzzle designed to revise the main concepts-all are useful in topic understanding in the learning and development (L&D) sector. These innovative teaching strategies involving blended learning methods are suitable for effective teaching of certain scientific topics to support student growth. The advantages of blended learning include i) allowing experimentation with learning methods ii) using interactive media to enhance learning iii) online modules/electronic resources supplement lectures iv) active participation of students, and v) unaffected by time or geography. It is essential to promote academic content development in intensifying the impact of academic innovation involving innovative strategies to integrate traditional teaching practices with modern high-impact methods for holistic student welfare and growth.

## 19. MICROTEACHING TECHNIQUE

It involves recording a short teaching segment on a single topic/concept and then analyzing the video using a structured protocol (Göçer, A. 2016; Higgins & Nicholl, 2003; Mahmud, et al., 2013; Ralph, 2014; Otsupius, 2014; Mergler, et al., 2010). It helps teachers identify areas of growth, experiment with new strategies, prepare systematic lesson plans, develop self-confidence in class management, eliminate subject errors, and improve overall teaching practice. The microteaching cycle can help students to present short lessons in the classroom. The process of microteaching involves the following steps; planning, lesson selection, preparing teaching materials, feedback, revision and practice, and repeating the process to gain mastery. Microteaching can be practiced to build stronger teaching skills to improve classroom teaching performance. It helps in the development of new skills in learners and emerging teacher trainees to gain confidence and enables them to master high-impact teaching practices under controlled conditions. High-impact educational practices discussed above are highlighted.

## 20. CONCLUDING REMARKS

The art of awakening the natural curiosity of young minds by providing the conditions in which they can learn in the form of stories/quizzes/ innovation activities fosters excellence. Thinking and analyzing abilities developed from the teaching-learning process flow in young minds which connects daily life with career goals stretching the limits of one's imagination. We have to implement active learning techniques in classrooms that are more effective in embedding concepts into their long-term memory and create capabilities of analyzing problems by linking learning across disciplines, sharing ideas and solutions, working together to reach a common goal, and new specific approaches to innovation and invention as a part of long-term higher education reforms using the nuts and bolts of teaching practice, advancements in pedagogy, educational psychology, and cognitive research outcomes. Technology-enhanced learning innovations help capture the attention of learners, and learner involvement in the teaching-learning process, ensure deeper student learning, keep the spark of motivation ignited, achieve a paradigm shift in the teaching-learning process, and provide a global outlook. Those who step outside their comfort teaching zone and explore new ideas often achieve the most important milestones in their career.

  

Innovative teaching learning assets empower faculty in their journey toward excellence and enhance the quality of higher education.

The most powerful tool to change the world is higher education where the learners are actively encouraged to venture beyond their safe space to reach greater heights. High-impact teaching-learning interactions are a major factor in transforming the nature of higher education and shaping the new generation via a continuous learning process involving high-tech student-centered strategies and improvement in learning outcomes that will enhance the quality of higher education. These modern teaching methods involve changes in educational approach making learning more interesting than traditional methods. Using the 5E framework of engagement, exploration, explanation, elaboration, and evaluation helps implement several HITS. Despite the challenges of today's teaching style, one can remain capable of being productive, relevant, impactful, and fruitful by adapting HITS in academic settings and allowing the younger generation to learn from past experiences and knowledge. A multipronged approach including content development and implementation committee to develop comprehensive strategies in inspiring teaching-learning excellence for the sector is suggested to enhance the quality of the higher education. These instructional strategies, when applied effectively can help students gain a deeper understanding of the topics and encourage critical thinking. The perspectives presented above provide opportunities for personal practice, a unique approach, teaching philosophy, and culturally responsive teaching to develop high-impact teaching culture.

**REFERENCES**


Halupa, C. M. (2015). Pedagogy, andragogy, and heutagogy. In *Transformative curriculum design in health sciences education* (pp. 143-158). IGI Global.

Patel, J. V. (2018). Paradigm shift-pedagogy to andragogy to heutagogy in higher education. *Essentials of Techno-Pedagogy*, *282*.

Baepler, P., Walker, J. D., Brooks, D. C., Saichaie, K., & Petersen, C. I. (2016). *A guide to teaching in the active learning classroom: History, research, and practice*. Routledge.

McLaughlin, L. D. (1996). Teaching with Style: A Practical Guide to Enhancing Learning by Understanding and Teaching Learning Styles by Anthony F. Grasha. *Journal of Instructional Psychology*, *23*(4), 319.

Fink, L. D. (2016). Five high-impact teaching practices: A list of possibilities. *Collected Essays on Learning and Teaching*, *9*, 3-18.

Knight, J. (2012). *High-impact instruction: A framework for great teaching*. Corwin Press.

Orlich, D. C., Harder, R. J., Callahan, R. C., Trevisan, M. S. T., & Brown, A. H. (2010). *Teaching strategies: A guide to effective instruction*. Wadsworth, Cengage Learning.

Raba, A. A. A. M. (2017). The impact of effective teaching strategies on producing fast and good learning outcomes. *International Journal of Research granthaalayah*, *5*(1), 43-58.

Bomia, L., Beluzo, L., Demeester, D., Elander, K., Johnson, M., & Sheldon, B. (1997). The Impact of Teaching Strategies on Intrinsic Motivation.

Killen, R., & O'Toole, M. (2023). *Effective teaching strategies 8e*. Cengage AU.

Anderson, L. W., & Krathwohl, D. R. (2001). *A taxonomy for learning, teaching, and assessing: A revision of Bloom's taxonomy of educational objectives: complete edition*. Addison Wesley Longman, Inc.

Al-Samarraie, H., & Hurmuzan, S. (2018). A review of brainstorming techniques in higher education. *Thinking Skills and creativity*, *27*, 78-91.

Hender, J. M., Rodgers, T. L., Dean, D. L., & Nunamaker, J. F. (2001, January). Improving group creativity: Brainstorming versus non-brainstorming techniques in a GSS environment. In *Proceedings of the 34th Annual Hawaii International Conference on System Sciences* (pp. 10-pp). IEEE.

Rickards, T. (1999). Brainstorming revisited: a question of context. *International journal of management reviews*, *1*(1), 91-110.

Ritter, S. M., & Mostert, N. M. (2018). How to facilitate a brainstorming session: The effect of idea generation techniques and of group brainstorm after individual brainstorm. *Creative Industries Journal*, *11*(3), 263-277.

Paulus, P. B., & Kenworthy, J. B. (2019). Effective brainstorming. *The Oxford handbook of group creativity and innovation*, 287-305.

Dart, B. C., & Clarke, J. A. (1991). Helping students become better learners: a case study in teacher education. *Higher Education*, *22*(3), 317-335.

Welty, W. M. (1989). Discussion method teaching. *Change: The Magazine of Higher Learning*, *21*(4), 40-49.

Gilbert, P. K., & Dabbagh, N. (2005). How to structure online discussions for meaningful discourse: A case study. *British Journal of Educational Technology*, *36*(1), 5-18.

Wu, S. Y. (2016). The effect of teaching strategies and students' cognitive style on the online discussion environment. *The Asia-Pacific Education Researcher*, *25*, 267-277.

Parker, Walter C., and Diana Hess. (2001) "Teaching with and for discussion." *Teaching and teacher education* 17, no. 3: 273-289.

Behnke, R. R. (1975). The demonstration-experiment as a teaching strategy: 159-162


  

Giridharan, K., and Ramasamy Raju. (2016) "Impact of teaching strategies: demonstration and lecture strategies and impact of teacher effect on academic achievement in engineering education." *International Journal of Educational Sciences* 14, no. 3: 174-186.
Sever, S., Oguz-Unver, A., & Yurumezoglu, K. (2013). The effective presentation of inquiry-based classroom experiments using teaching strategies that employ video and demonstration methods. *Australasian Journal of Educational Technology*, *29*(3).
Umara, R. (2022). The effectiveness of the demonstration method to improve student learning outcomes. *East Asian Journal of Multidisciplinary Research*, *1*(9), 1997-2006.
Pivec, P. (2009). Game-based learning or game-based teaching. *British Educational Communications and Technology Agency (BECTA), corp creator*.
Tham, R., & Tham, L. (2014, December). The effectiveness of game-based learning as an instructional strategy to engage students in higher education in Singapore. In *International Journal on E-Learning* (Vol. 13, No. 4, pp. 483-496). Association for the Advancement of Computing in Education (AACE).
Holmes, J. B., & Gee, E. R. (2016). A framework for understanding game-based teaching and learning. *On the horizon*, *24*(1), 1-16.
Hartt, M., Hosseini, H., & Mostafapour, M. (2020). Game on: Exploring the effectiveness of game-based learning. *Planning Practice & Research*, *35*(5), 589-604.
Cadiz, G. S., Lacre, G. J. R., Delamente, R. L., & Diquito, T. J. A. (2023). Game-Based Learning Approach in Science Education: A Meta-Analysis. *International Journal of Social Science and Human Research*, *6*(03), 1856-1865.
Garside, C. (1996). Look who's talking: A comparison of lecture and group discussion teaching strategies in developing critical thinking skills, 212-227.
Johnson, J. P., & Mighten, A. (2005). A comparison of teaching strategies: lecture notes combined with structured group discussion versus lecture only. *Journal of Nursing Education*, *44*(7), 319-322.
Rahmat, A. (2017). Small Group Discussion strategy towards students' reading comprehension of SMA Negeri 11 Bulukumba. *Metathesis: Journal of English Language, Literature, and Teaching*, *1*(2).
Tsang, A. (2011). In-class reflective group discussion as a strategy for the development of students as evolving professionals. *International Journal for the Scholarship of Teaching and Learning*, *5*(1), 7.
Farrokh, P., Vaezi, H., & Ghadimi, H. (2021). Visual mnemonic technique: An effective learning strategy. *GIST–Education and Learning Research Journal*, *23*, 7-32.
Jurowski, K., Jurowska, A., & Krzeczkowska, M. (2015). Comprehensive review of mnemonic devices and their applications: State of the art. *International E-Journal of Science, Medicine and Education*, *9*(3).
Scruggs, T. E., Mastropieri, M. A., Berkeley, S. L., & Marshak, L. (2010). Mnemonic strategies: Evidence-based practice and practice-based evidence. *Intervention in School and Clinic*, *46*(2), 79-86.
Glynn, S. M., Duit, R., & Thiele, R. B. (2012). Teaching science with analogies: A strategy for constructing knowledge. In *Learning science in the schools* (pp. 247-273). Routledge.
Taber, K. S. (2013). Upper secondary students' understanding of the basic physical interactions in analogous atomic and solar systems. *Research in Science Education*, *43*, 1377-1406.
Holyoak, K. J., & Richland, L. E. (2013). Using analogies as a basis for teaching cognitive readiness. In *Teaching and measuring cognitive readiness* (pp. 223-238). Boston, MA: Springer US.
Gray, M. E., & Holyoak, K. J. (2021). Teaching by analogy: From theory to practice. *Mind, Brain, and Education*, *15*(3), 250-263.
Clement, J. J. (1998). Expert novice similarities and instruction using analogies. *International Journal of Science Education*, *20*(10), 1271-1286.
Bagheri, J. S., Habibzadeh, H., Mohammadpour, Y., & Khalkhali, H. (2018). Evaluating the impact of jigsaw (Puzzle) cooperative learning model as a new model of education on clinical competency of nursing students. *Journal of Advanced Pharmacy Education and Research*, *8*(2-2018), 68-74.
Hussin, H., Aziz, A. A., Hussin, A. H., & Muda, S. (2019, December). Effectiveness of Cooperative Learning:
Jigsaw and Cross Word Puzzles for Semiconductor Devices Course. In *2019 IEEE International Conference on Engineering, Technology and Education (TALE)* (pp. 1-7). IEEE.
Aggarwal, M., Soni, A., Gupta, S., & Vohra, H. (2023). Impact of crossword puzzles as an active learning methodology, 99-104
Egiluz, Z., Briz, E., Bidaguren, I., Orbe, A., Larrauri, M., García, H., ... & Sancibrian, R. (2019). Combination of Puzzle Method and Scaled Models to Improve Cooperative and Autonomous Learning in Strength of Materials Subject. In *INTED2019 Proceedings* (pp. 1348-1355). IATED.
Iriyani, A., & Silitonga, S. (2013). Improving student's vocabulary achievement through 'make a match' method. *Journal of English Language Teaching of FBS-Unimed*, *2*(4).
Setiawan, A. (2023). *The Effectiveness of Make a Match Strategy On Students' Reading Comprehension at SMAN 1 Jenangan Ponorogo* (Doctoral dissertation, IAIN Ponorogo).
Pagliaro, M. M. (2011). *Differentiating instruction: Matching strategies with objectives*. R&L Education.

  

Sulla, M. (2023). Improving Students' Ability to Write Procedure Texts Through Make a Match Learning Method in Class V11 of SMP Negeri 1 Pantai Baru. *BAHTRA: Pendidikan Bahasa dan Sastra*, *4*(01), 63-74.
Afdal, H. W., & Spernes, K. (2018). Designing and redesigning research-based teacher education. *Teaching and Teacher Education*, *74*, 215-228.
Creedon, S. (2004). Innovations in Teaching: Teaching it to undergraduate Nurses". As a learning organization, 96.
Afdal, H. W., & Spernes, K. (2018). Designing and redesigning research-based teacher education. *Teaching and Teacher Education*, *74*, 215-228.
Sumathi, D. (2022). Innovative teaching strategies. Innovative teaching strategies." Psycho-technological Approaches in Heutagogy, *25*.
Sivarajah, R. T., Curci, N. E., Johnson, E. M., Lam, D. L., Lee, J. T., & Richardson, M. L. (2019). A review of innovative teaching methods. *Academic radiology*, *26*(1), 101-113.
Shafiq, F., & Siddiquah, A. (2011). Effect of Classroom Quizzes on Graduate Students' Achievement. *International Journal of Academic Research*, *3*(5).
Romero, E., García, L., & Ceamanos, J. (2021). Moodle and Socrative quizzes as formative aids on theory teaching in a chemical engineering subject. *Education for Chemical Engineers*, *36*, 54-64.
Cook, B. R., & Babon, A. (2017). Active learning through online quizzes: Better learning and less (busy) work. *Journal of Geography in Higher Education*, *41*(1), 24-38.
Rothe, I., Pustowalow, W., & Winzker, M. (2021, April). Multipurpose Use of Quizzes in Teaching. In *2021 IEEE Global Engineering Education Conference (EDUCON)* (pp. 63-67). IEEE.
Erturk, E. M. R. E. (2015). Role play as a teaching strategy. In *National Tertiary Learning and Teaching Conference*.
Alabsi, T. A. (2016). The effectiveness of role play strategy in teaching vocabulary. *Theory and practice in language studies*, *6*(2), 227.
Rashid, S., & Qaisar, S. (2017). Role Play: A Productive Teaching Strategy to Promote Critical Thinking. *Bulletin of Education and Research*, *39*(2), 197-213.
Stevens, R. (2015). Role-play and student engagement: reflections from the classroom. *Teaching in Higher Education*, *20*(5), 481-492.
Rave, B. E. O., & Botero, C. A. A. (2008). Seminar research and the relation with different strategies and methodologies of learning and teaching. *Investigación y Educación en Enfermería*, *26*(3).
Liu, Y., Wang, S., Liu, L., & Chen, Y. (2024, June). Research on the Design and Practice of Seminar Teaching. In *Proceedings of the 3rd International Conference on Educational Innovation and Multimedia Technology, EIMT 2024, March 29–31, 2024, Wuhan, China*.
Gomathi, K. G., Shaafie, I. A., & Venkatramana, M. (2014). Student-led seminars as a teaching-learning method-effectiveness of a modified format. *South East Asian J Med Educ*, *8*(1), 82-4.
Waring, H. Z. (2000). *Discourse strategies used in seminar discussion: A conversation analytic approach*. Teachers College, Columbia University.
Peterson, E. (2010). Problem-based learning as teaching strategy. *Critical library instruction: Theories and methods*, 71-80.
Hung, W., Jonassen, D. H., & Liu, R. (2008). Problem-based learning. In *Handbook of research on educational communications and technology* (pp. 485-506). Routledge.
Kwan, A. (2009). Problem-based learning. In *The Routledge international handbook of higher education* (pp. 91-108). Routledge.
Schwartz, P. (2013). *Problem-based learning*. Routledge.
Duch, B. J., Groh, S. E., & Allen, D. E. (2001). The power of problem-based learning: a practical" how to" for teaching undergraduate courses in any discipline. *(No Title)*.
Bochina, T., Ageeva, J., & Vlasicheva, V. (2014). Multimedia presentation as a strategy of teaching speaking. In *INTED2014 Proceedings* (pp. 7661-7669). IATED.
Artal-Sevil, J. S., Romero, E., & Artacho, J. M. (2018). Using new multimedia learning technologies: presentations design tools, dynamic animations, interactive maps, visual content and multimedia resources. In *EDULEARN18 Proceedings* (pp. 9617-9627). IATED.
Syafii, M. L., Sugianto, A., & Cendriono, N. (2019). Improving Students' Speaking Skill by Using Multimedia Presentation Strategy. *English Review: Journal of English Education*, *7*(2), 125-132.
Rusli, M., Ardhana, I. W., Sudana, I. N. D., & Kamdi, W. (2014). The effect of presentation strategy on multimedia learning-animation vs static visualization-and learning style to learning result. *Academic Research International*, *5*(1), 216.
Schauble, L., Glaser, R., Raghavan, K., & Reiner, M. (1991). Causal models and experimentation strategies in scientific reasoning. *The Journal of the Learning Sciences*, *1*(2), 201-238.

  

Montoya, J. (2017). Visualization, experimentation and discussion: a teaching strategy for teaching-learning of mechanics of materials. In *EDULEARN17 Proceedings* (pp. 3669-3677). IATED.

Besson, U., Borghi, L., De Ambrosis, A., & Mascheretti, P. (2010). A Three-Dimensional Approach and Open Source Structure for the Design and Experimentation of Teaching-Learning Sequences: The case of friction. *International Journal of Science Education*, *32*(10), 1289-1313.

Huang, T. C., Chen, M. Y., & Lin, C. Y. (2019). Exploring the behavioral patterns transformation of learners in different 3D modeling teaching strategies. *Computers in human behavior*, *92*, 670-678.

Khalil, M. K., Abdel Meguid, E. M., & Elkhider, I. A. (2018). Teaching of anatomical sciences: A blended learning approach. *Clinical Anatomy*, *31*(3), 323-329.

Pereira, J. A., Pleguezuelos, E., Merí, A., Molina-Ros, A., Molina-Tomás, M. C., & Masdeu, C. (2007). Effectiveness of using blended learning strategies for teaching and learning human anatomy. *Medical education*, *41*(2), 189-195.

Kaur, M. (2013). Blended learning-its challenges and future. *Procedia-social and behavioral sciences*, *93*, 612-617.

Cleveland-Innes, M., & Wilton, D. (2018). Guide to blended learning.

Göçer, A. (2016). Assessment of the opinions and practices of student teachers on micro-teaching as a teaching strategy. *Acta Didactica Napocensia*, *9*(2), 33-46.

Higgins, A., & Nicholl, H. (2003). The experiences of lecturers and students in the use of microteaching as a teaching strategy. *Nurse Education in Practice*, *3*(4), 220-227.

Mahmud, I., & Rawshon, S. (2013). Micro teaching to improve teaching method: An analysis on students' perspectives. *IOSR Journal of Research & Method in Education (IOSRJRME)*, *1*(4), 69-76.

Ralph, E. G. (2014). The effectiveness of microteaching: Five years' findings. *International Journal of Humanities Social Sciences and Education*, *1*(7), 17-28.

Otsupius, I. A. (2014). Micro-teaching: A technique for effective teaching. *African Research Review*, *8*(4), 183-197.

Mergler, A. G., & Tangen, D. (2010). Using microteaching to enhance teacher efficacy in pre-service teachers. *Teaching Education*, *21*(2), 199-210.

  

# SOCIAL-MEDIA ON VOTING BEHAVIOR WITH SPECIAL REFERENCE OF BURHANPUR DISTRICT: A CASE STUDY

Kavita Kakde
PhD Scholar, SRK University, Bhopal, India

Dr. Usha Pandey
Associate Professor, SRK University, Bhopal, India,

Dr. Lalit Tayde
Associate Professor
Pratibha Tai College, Multainagar, India

**ABSTRACT**
Social-media is a 21st-century platform and instrument that enables nations and civilizations to produce, express, and extensively communicate their views and ideas. Individuals of all ages are interested in using and modifying this technology to connect to the globe in less time and energy. Social media skill is extensive enough to encompass blogging, picture-sharing, wall posting, music-sharing, troop sourcing and speech over IP, e-diaries etc, which currently people are loving to exploit it to connect with each extra and also excite themselves to innovate more thoughts and expressions. Social media is quickly becoming a popular tool for political parties to use during elections to influence, connect, and convey their ideas, with the goal of increasing their exposure or gaining a majority. People nowadays live on social media, and political parties seek to reach out to them there. The goal of this study paper is to better understand the influence social media plays in people' voting decisions. The study's findings indicate that social media has a considerable effect on voting decisions, particularly among young voters. The study also supports the notion that political leaders' remarks/tweets/comments have a substantial effect on their choice to election for that party.
**Keywords:** Social-media, Political campaign, voter behavior.

## INTRODUCTION

Social media has been viewed as a marketing tool by corporations, governments, and other organizations to communicate, connect, and gain followers from all over the world. This new kind of connection has also transformed the way individuals think and interact with one another. As a result, it is believed that social media will play a significant role in influencing the country's upcoming elections. India has just completed a crucial round of state elections in major areas such as Delhi, Madhya Pradesh, and Rajasthan.

Many are wondering how big of a role social media play in Indian elections. This subject will become more important in the run-up to the 2018 general election. According to the Internet and Mobile Association of India and IMRB's "Social Media in India 2018" research, social media users in India are predicted to rise by 52.2% between June and December 2018. According to the research, 59.8 million urban Indians use their cell phone to access social media sites. According to the analysis, based on the number of qualified voters and statistics from the Election Instruction of India and field interviews, there might be a vote swing of 37 percent in 24 states where internet users are significant. The indicated swing is significant. Nevertheless, owing to the absence of additional data the research has not defined if the effect is due to uncontaminated community media, or other elements such as channels of conventional communication. To enable individuals to connect effectively across boundaries, social media has grown more colorful, dynamic, and youth-centric in character. India has become the third-largest internet base globally with more than 574 million subscribers. The widespread usage of media is now becoming an everyday activity for its users to communicate their ideas, feelings, and experiences with one another. Social media's appeal stems from its numerous roles, which include engagement, live chat, status updates, duplicate and audiovisual sharing, and therefore connecting all our sense organs to it. The media is used not only by users like us to meet and interact, but also by politicians from various parties to capture the attention of their supporters and explain their vision, objectives, and so on. According to numerical media specialists, there are over 574 million first-time constituencies who are engaged on social media then are the primary focus of political parties seeking to expand their audience reach.

Between June and December 2018, communal media users are predicted to increase by 22%. According to the research, around 59.8 million users in urban India use social media platforms using their cell phone (According to IMRB report in October 18). People's perceptions of political parties or candidates will be influenced by the material they consume on social media.

  

In Section 2, Review the existing work with different references, In Section 3, specify the research objectives. In Section 4, explore the proposed methodology. In Section 5, define the data analysis of study. In Section 6, define the sample test of this study. In Section 7, define the influence of social media on voting behavior as an outcome.

## BACKGROUND

Politicians Social Media Sites Impact Constituent Perception: The major goals of his study work were to determine how politicians' usage of social media affects voter views. Is an attractive or personal use of communal media more likely to boost a politician's likability and electability? The researcher conducted a satisfied analysis of three politicians' current communal media places and then plotted 88 university students to comprehend social media's effect over their insight of the representatives to investigate the relationship between politicians' use of communal media places and their electability and admiration. To undertake content analysis, the variables content quality, informality of speech, design, frequency of posts, and followers were chosen. After a content study of politicians' social media sites based on a single paragraph chosen from these politicians' sites, their honesty, electability, and personability were examined. The study decided that there is strong association between personable gratified and voting meaning and politicians sensibleness was related with their honesty and electability. If people are consuming content on social media, it will reflect in their perception about the Political Parties or candidates. Times of India has over 35 Lakh fans on FB, Hindustan Times has over 12 lakhs, Dainik Jagran has over 16 lakhs and the Economic Times has over 14 lakhs which is more than double of its circulation. When traditional media has such a strong following on social media one cannot ignore the impact of social media and its influence on the elections.

Social media is in fact the fastest way to directly engage with your audience especially when there could be last minute coups." According to Dr. Ranjit Nair, CEO, German communal media does not inspiration much too rustic voters but in town India it has enormous impression on estimation of unresolved voters. It may also help in galvanizing the support base to vote in large numbers and influencing others to vote."

## RESEARCH OBJECTIVES

The overall goal of this research is to investigate the effect of communal media on voter behavior in Burhanpur, MP. The particular goals are as follows:

1. Determine the influence of communal media comments/tweets/follows on voter behavior.
2. To comprehend the demographic features of voters and the influence of community media on elective.

In order to accomplish the aforementioned goals, the following hypothesis has been developed:

HA1: There is statistically meaningful difference between age and voting intention on the basis of comments/tweets/follows on social media by politicians.

HA2: There is a statistically significant variance between training and voting purpose based on political comments/tweets/follows on social media.

## RESEARCH METHODOLOGY

While the survey is being done to provide insight into the stated aims of the research, the current education is based on a descriptive research design. The target market is young individuals aged 18 and up who use communal media such as Facebook, Twitter, and others, hence most responders are students seeking higher education. As a sample approach, non-probability convenient sampling was utilized. When 110 people were chosen for the survey, they were given a questionnaire to complete and return within a week.

As a data gathering approach, both primary and secondary data were employed. Primary data was used to obtain respondents' opinions on various elements of social media, while secondary data was used to obtain theoretical background of the subject matter of the study. The data was examined using the statistical software for social sciences (SPSS), and the basic mean and average deviation will be utilized for analysis.

## STATISTICS ANALYSIS

Demographic outline of respondents Out of 110 examples, 56.6% was male defendants and 43.4% are female defendants. Almost equivalent amount of gender selected for study.

  

Table 1: Gender

| Valid Voter | Frequency | % | Valid % | Cumulative % |
|---|---|---|---|---|
| Male | 59 | 56.6 | 56.6 | 56.6 |
| Female | 51 | 43.4 | 43.4 | 100.0 |
| Total | 110 | 100.0 | 100.0 | |

Table 2: Age Description

| Valid Voter | Frequency | % | Valid % | Cumulative % |
|---|---|---|---|---|
| Young | 89 | 80.9 | 80.9 | 80.9 |
| Adults | 14 | 12.7 | 12.7 | 93.6 |
| Old | 7 | 6.4 | 6.4 | 100.0 |
| Total | 110 | 100.0 | 100.0 | |

Major part of sample is young people. 80.9% respondents are young belong to age group of 18 to 28, rest 12.7% & 6.4% adults and old which belongs to the age group of 29 to 43 & above.

Table 3: Education Description

| Valid Voter | Frequency | % | Valid % | Cumulative % |
|---|---|---|---|---|
| More than HSC | 102 | 92.7 | 92.7 | 92.7 |
| HSC or less | 8 | 7.3 | 7.3 | 100.0 |
| Total | 110 | 100.0 | 100.0 | |

All defendants either pursuing advancement or above that is 92.7% only 7.3% are higher secondary capable so we can say that all defendants are well cultured. According to table 4, respondents agree that communal media provides comprehensive information about the workings of the gathering (with mean 3.87 and SD 1.16), implying that social media is one of the pertinent sources of information that provide a complete idea about how parties are working for the betterment of people, allowing respondents to make a knowledgeable decision about which party to vote for. In the second statement, social media helps people pick the correct candidate, the mean value is 3.62 with SD 1.28, indicating that communal media is a highly significant medium that helps people select the appropriate candidate since it provides comprehensive knowledge on the workings of the party. Respondents also agreed that social media plays a leading role over outdated media for marketing and promoting political parties (mean 3.86, SD 0.97); because the popular of young individuals access communal media daily, it would be the most cost-effective source for political parties to promote on social media such as facebook, twitter, and others.

Respondents agree that statements/remarks/tweets, etc. made by the party-political party/leader on social sites influence their voting choice (Mean 3.89, SD 0.99); thus, we can say that politicians' statements on social media regarding any event, any remark, or any tweet heavily influence the public in general to decide whether to ballot for that person or not. Statements/remarks/tweets portray their image in the eyes of the public via social media. Respondents agree that they research people on communal media sites such as Facebook and Twitter before casting their ballot (Mean 3.72, SD 1.01). Because they regard communal media to be one of the most significant sources of information, whenever they go to vote, they first look for a person's profile on social media, which helps them understand that personality. People also believe the information supplied on social media regarding political parties and political leaders (Mean 3.87, SD 1.01), which is why individuals seek for candidates and then determine which party or person to support or vote for.

Table 4: Descriptive Analysis

| Statements | Mean | Standard Deviation |
|---|---|---|
| Social media provides complete information about the working of the parties | 3.87 | 1.16 |
| Social medium helps me to select the right candidate? | 3.62 | 1.28 |
| Social media, playing a dominant role on other existing media (Print, Electronic media etc.) for the marketing and promoting for party-political party? | 3.86 | 0.97 |
| Statements/remarks/tweets etc. made on communal sites by the party-political party/leader, influence my voting decision | 3.89 | 0.99 |
| Before voting to the Party, I search about candidate on social media | 3.72 | 1.01 |
| I trust on the information provided on social media about Political party | 3.87 | 1.06 |

  

**ONE WAY ANOVA**

From the ANOVA table it is concluded that there is no statistical significance difference between group mean of different age group because F (2,107) =0.304 P=0.738 (p≥0.05).

Therefore, we can say that all age group respondents equally agree that Statements/remarks/tweets etc. made on communal sites by the party-political party/leader, influence my voting decision. So further we don't need to explain the result of post hoc test.

| **ANOVA**<br>One way ANOVA applied to check whether there is statistical significance difference exist between different age group mean | | | | | |
|---|---|---|---|---|---|
| Statements/remarks/tweets etc. made on communal sites by the party-political party/leader, influence my voting decision | | | | | |
| | Sum of Squares | df | Mean Square | F | Sig. |
| Between Groups | 0.62 | 2 | 0.32 | 0.28 | 0.74 |
| Within Groups | 116.6 | 107 | 1.09 | | |
| Total | 117.2 | 109 | | | |

**INDEPENDENT SAMPLE T-TEST**

Independent t-test applied to check whether there is a statistically significance difference between different education group on dependent variable is given in table.

The result of independent t-test state that the t value for 105 df is 0.002 which is less than 0.04 so we can say that there is a statistically significant difference between education of respondents on voting decision based on Statements/remarks/tweets etc. made on communal sites by the political party/leader.

**CONCLUSIONS**

This study was based on one broad objective that is to identify the effect of communal media on voting intention. Majority of respondents are young in the age collection of 18 to 28 year and well-educated; pursuing graduation or post-graduation also they were actual active on social media. The results from the analysis reveal that the communal media has significant effect on voting intention of respondent especially young people.

Social media considered to be the useful source of information and helping people to know about politician personality that will help them to decide to vote or not to vote that candidate. One important finding of this research is that the respondents voting behavior highly influenced by the comments/tweets/remarks made by representatives on communal media. Hypothesis has been formulated to check the difference on the foundation of age and education on voting behavior.

Table 5: Statistical Variables

| Independent Samples Test | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Levene's Test for | | t-test for Equality of Means | | | | | | |
| | | F | Sig. | t | df | Sig. (2-tailed) | Mean Difference | Std. Error Difference | 95% Confidence | |
| | | | | | | | | | Lower | Upper |
| Statements/remarks /tweets etc. made on social sites by the political party/leader, influence my voting decision | Equal variances assumed | 5.362 | 0.03 | 2.916 | 106 | 0.003 | 1.492 | 0.503 | 0.436 | 2.36 |
| | Equal variances | | | 1.732 | 3.073 | 0.179 | 1.488 | 0.825 | -1.181 | 4.184 |

The result of the hypothesis is that the age doesn't influence voting behavior however education has significant on voting behavior based on comments/tweets/remarks of politicians.

  

**REFERENCES**

Hellweg A., Social Media Sites of Politicians Influence Their Perception by Constituents. The Elon Journal of Undergraduate Research in Communications. Vol. 2, No. 1. Spring 2011

Gilmore J., Howard N. P., Does social media Make a Difference in Political Campaigns? Digital Dividends in Brazil's 2010 National Elections.

Stieglitz S. & Dang-Xuan L., social media and political communication: a social media analytics framework. DOI 10.1007/s13278-012-0079-3.

social media and the elections – did it have an impact? (October 13, 2015). Retrieve from Europe decides.

"Social media in election campaigning" (March 21, 2013). European parliamentary research service.

"Can social media influence election in India" (December 12, 2013), retrieved from PR Insight

  

# STUDENT ACCEPTANCE ON ELEARNING SYSTEM USAGE DURING AND POST COVID-19 IN TANZANIA: A CASE OF UDOM ECLASSROOM OF THE UNIVERSITY OF DODOMA

Mustafa Habibu Mohsin
Department of Electronics and Telecommunication Engineering,
The University of Dodoma, Dodoma, Tanzania.
muky4us@gmail.com

Hamadi Mtani
Department of Information Systems and Technology, The University of Dodoma, Dodoma, Tanzania.
hamadimtani@gmail.com

Florence Rashidi
Department of Electronics and Telecommunication Engineering,
The University of Dodoma, Dodoma, Tanzania.

**ABSTRACT**
The present study aimed to identify factors influencing students' acceptance of the UDOM eClassroom system at the University of Dodoma. The paper covers the pandemic situation during and after the COVID-19 impacts in Tanzania. The research model used the Technological Acceptance Model (TAM) as the theoretical framework and extends it by adding construct such as Management support, Facilitating conditions and Subjective norms from the other models. The model was tested using responses from 101 students (n=101) taking diplomas and bachelor's degrees from various programs at the College of Informatics and Virtual Education (CIVE) through survey data. After the quantitative analysis, the results revealed that perceived usefulness, ease of use, management support, facilitating condition, student attitude and subjective norm significantly influence the students' UDOM eClassroom acceptance. The study's findings will support educational institutions in identifying the strategies needed to boost learning platform usage and produce the intended outcomes.
**Keywords**: *Student acceptance, eLearning system, COVID-19, UDOM eClassroom*

## 1. INTRODUCTION

The COVID-19 outbreak has caused a paradigmatic digital shift in education, particularly in higher learning institutions worldwide (Angiolini et al., 2020). This pandemic disease has significantly impacted the education sector worldwide, including universities in Tanzania. With the sudden shift to remote learning, the University of Dodoma was compelled to adopt digital platforms to facilitate teaching and learning. Such technology is the UDOM eClassroom system, which offers virtual classroom, online collaboration tools, and remote learning capabilities. There has been a significant increase in the use of this digital learning system by higher learning institutions in recent years after the outbreak of coronavirus disease (Al-Mamary, 2022).

These digital educational technologies were not strange to most educational institutions and were installed and used partially even before 2019. Through various educational technologies, the COVID-19 lockdown measures have provided an opportunity to observe digital technology's potential for sustaining education (Badaru & Adu, 2022). Using these digital educational tools has improved student learning performance and reduced student dropout rates in educational institutions in Europe and America (TCU, 2022). According to Noor-Ul-Amin (2013), using and integrating current digital technology in education will improve teaching, learning, and research. As a result, digital technology has the power to alter how learning occurs and provide accessibility for a larger audience. It will also give students more freedom by enabling them to access teaching and learning material at any time or location.

Learning Management Systems (LMS) are the digital educational platforms installed and used by most African universities, specifically Moodle and Blackboard (Marongwe & Garidzirai, 2021). Tanzania also has adopted the learning management system to enjoy the same benefits as others have continued to enjoy. Through its Tanzania Commission for University (TCU), the government of Tanzania has formulated guidelines for online and blended delivery modes of courses for university institutions to support and ensure the quality of instruction in the course's delivery (TCU, 2022). The University of Dodoma College of Informatics and Virtual Education (CIVE) developed an eLearning system called UDOM eClassroom system (UDOM eClassroom) which allows students and their instructors to be connected through electronic means for the delivery of teaching and learning material, allowing the avenue for discussion, making of the announcement and perform assessment activities such as quizzes and online tests by logging

  

onto available digital devices such as smartphones, iPad, android phones, tablets, and laptops. During the pandemic, when face-to-face classes were disrupted, Tanzanian universities, including the University of Dodoma. They implemented UDOM systems to ensure the continuity of the provision of education. These systems allowed students to access learning materials, engage in virtual classrooms, interact with instructors and peers, submit assignments, and participate in online discussions. This technology enabled universities to overcome the physical limitations of the pandemic and continue delivering education remotely.

While there are benefits to adopting digital education tools properly and fully in classroom instruction, many other academic institutions that use eLearning systems face numerous difficulties. According to the literature, among the few things that prevent the best use of an eLearning system are a lack of technological skills, mistrust and anxiety, poor Internet infrastructure and personnel skill gaps (Ngeze, 2016; Yunusa et al., 2021; Al-Mamary 2022). Mtani Mbelwa (2022) have shown that self-efficacy is one factor that prevents instructors from using LMS. The first step in any educational institution's e-learning system success is the student acceptance of technology. This acceptability motivates and encourages students to utilize the eLearning system in their studies. In order to determine the performance of the eLearning system and enhance long-term eLearning system sage, it is necessary to examine the elements that influence students' intention to accept the system and use it for learning purposes. Therefore, this study aimed to examine factors that led to the acceptance of UDOM eClassroom in Tanzania.

### 1.1 UDOM ECLASSROOM SYSTEM

The UDOM eClassroom system, as shown in Figure 1 and Figure 2, is a learning platform developed by the experts from the CIVE. It is a web-based application (https://eclassroom.udom.ac.tz/) which can be accessed via different browsers. The platform formerly was CIVE eClassroom and was only used by the students at the CIVE. Currently the eClassroom is now being used bay all students from different colleagues at the UDOM The UDOM eClassroom system has many functionalities, including course monitoring and progress measuring, accessibility of course materials, allowing virtual classrooms, monitoring continuous assessments, making announcements, and allowing discussion and forums among students and instructors.

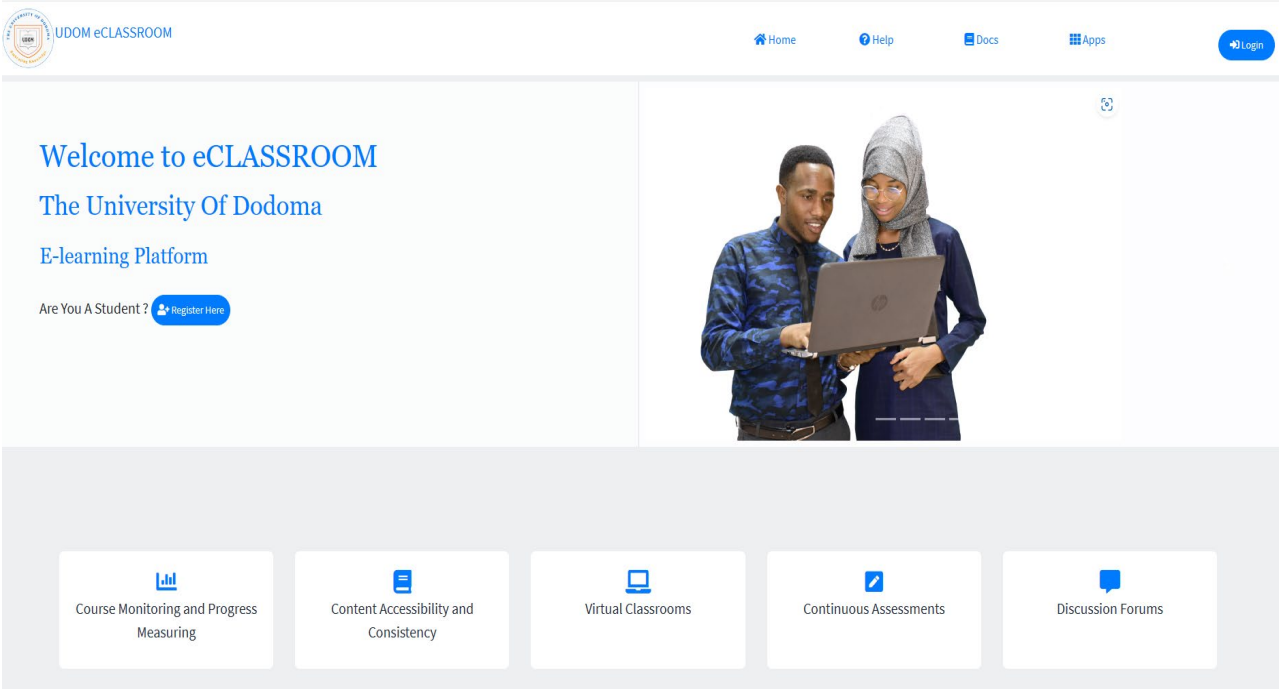


Figure 1: Home page UDOM eClassroom

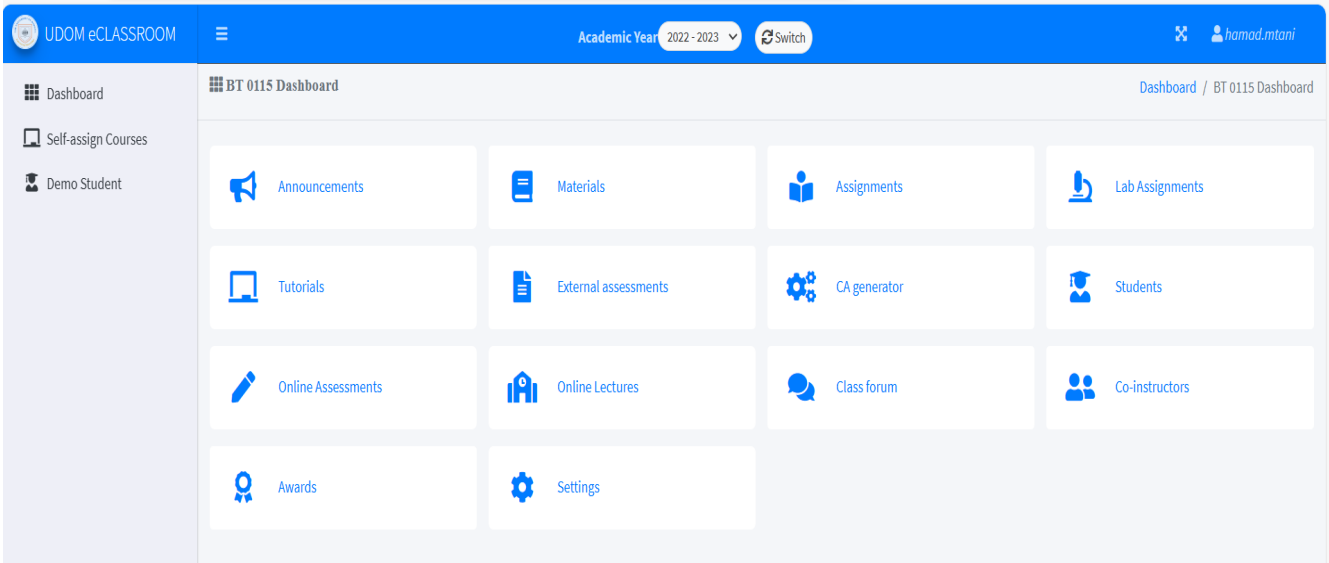


Figure 2: Dashboard of the UDOM eClassroom system.

## 2 LITERATURE REVIEW

### 2.1 Covid-19 and eLearning system use in education institutions.

The global outbreak of COVID-19 has had both positive and negative effects on the delivery of education. The positive effects of COVID-19 include a shift toward blended learning, enhanced digital literacy, and the rise in eLearning systems (Buluma et al., 2023). Educational institutions have adopted the eLearning system to support the teaching and learning process. Using eLearning systems in HLIs and well-connected computers facilitates broad access to electronic teaching and learning materials to the students through their devices such as smartphones, laptops, tablets and other digital devices. The COVID-19 pandemic has impacted education systems worldwide, leading to a rapid shift towards technology use in education. This transition has been a critical response to the challenges posed by the pandemic, enabling educational institutions to continue delivering learning experiences while ensuring the safety of both students and instructors. Technology integration in education has taken various forms, including online learning platforms, video conferencing tools, digital educational resources, and learning management systems. Based on available data, the global closure has affected over 1.7 billion students, with 160 countries having imposed closures due to the pandemic (UNESCO, 2023). Research has shown that COVID-19 has impacted at least 91% of the learners worldwide (Sukendro et al., 2020;). Table 1 below shows the UNESCO data on school closures from February 2020 to June 2022 in various countries after the COVID-19 impacts. Tanzania is one of the countries in which educational institutions were fully open during and after the COVID-19 impacts.

Table 1: Data on school closures from February 2020 to June 2022 across the world

| Country's' status | Total number of schools in various countries | Percent |
|---|---|---|
| Full open | 81102 | 45 |
| Closed due to COVID-19 | 29385 | 16 |
| Academic break | 29385 | 22 |
| Partially open | 31604 | 17 |

Source:(UNESCO, 2023)

### 2.2 eLearning system in education institutions

Munir et al., 2021 researched in Malaysia and Pakistan about Online Learning and Students' Fear of COVID-19. This study investigated the association between students' social presence in online learning and their fear of COVID-19 and

  

the moderating roles of students' psychological motivation and cognitive problem-solving abilities in this relationship. Four hundred seventy-two (472) university students from Pakistan and Malaysia participated in the study. A Google Forms-based online data-gathering method was used. The research discovered that training in cognitive problem-solving abilities and providing psychological encouragement may increase their interest in online learning; the study did not consider many perceptions of the technical aspects of the online learning tool to see whether it affected the social presence online among students during the pandemic. Instead, it focused much on the students' psychological traits.

Similarly, Mtani & Mbelwa (2022) investigated the factors affecting the instructor's use of the Leaning Management System (LMS) at the University of Dodoma (UDOM) in Tanzania. His study looked into the variables that affect LMS use in HLIs. The constructs from the D&M success models, UTAUT2 and TAM, were used to achieve the study's objectives. The data was gathered by employing surveys and then interviews with UDOM Instructors. The information gathered from 92 individuals was examined using a mixed-method sequential explanatory approach. The findings showed that perceived usefulness, instructors' self-efficacy, and intrinsic motivation impacted how often instructors in HLIs used their learning management systems. The results of this study will aid HLIs and LMS implementers in determining the best methods for boosting LMS usage and achieving desired outcomes. The study was based on the instructors' challenging experience, and perceptions of using the online system may not necessarily be the same as the students.

Yunusa et al. (2021) researched the impact of the COVID-19 Pandemic on university institutions. The study employed a qualitative design, and seven lecturers were interviewed across five universities in Nigeria. The data were gathered through various online platforms such as Skype and Zoom cloud meetings. The results revealed that COVID-19 impacted many universities. This study recommends opportunities for responding to various issues that are currently arising and possibly will arise in the future in the Nigerian higher education system due to the COVID-19 pandemic impact. The study was mainly based on the impact of COVID-19 in universities among lecturers.

**2.3 Theories of technology adoption and usage**

Several frameworks, theories and models have been applied in various studies to investigate and explore the factors contributing to the acceptance and usage of eLearning systems in education institutions. These include Reasoned Action (TRA) by Fishbein & Ajzen (1975), Technology Acceptance Model (TAM) by Davis (1989) and the Unified Theory of Acceptance and Use of Technology (UTAUT) by Venkatesh et al. (2003), which focuses on individual; and Technology Organization Environment (TOE) (Tornatzky & Fleischer, 1990) that focuses on firm or organization.

The TAM was introduced by Devis in 1989. This model consists of five components: perceived usefulness, attitudes, behavior intentions, perceived ease of use, and actual usage attempts to describe the conditions for the acceptance of technology in different practices. It (Alsamydai, 2014; Yucel & Gulbahar, 2013). TAM suggests that people use technologies based on two main factors: perceived usefulness and perceived ease of use. Perceived usefulness is referred as an individual perception toward technology use will enhance his or her ability to perform a particular job effectively. They perceive ease is described as an individual belief that using a technology will requires a minimal effort (Yucel & Gulbahar, 2013).

TRA is a psychological theory which is used to explain and predict human behavior based on individuals' attitudes and subjective norms (Shareef et al., 2009). The theory was developed by Martin Fishbein and Icek Ajzen around 1960s (Fishbein & Ajzen, 1975). According to the TRA, an individual behavior is determined by two factors which are attitudes and subjective norms. Attitudes refer to the individual belief of a particular behavior, while subjective norms is described as the individual perception on social pressure to perform or not perform a particular behavior (Otieno et al., 2016). According to this theory, people consider their attitudes toward behavior and the perceived social pressure or norms associated with it before making decision on engaging on a particular technology or not.

The UTAUT is a model which was developed by Venkatesh et al. (2003) which is used to understand and predict individuals' acceptance and use of technology. The UTAUT model combined various theories including TRA, TAM, and the Innovation Diffusion Theory (IDT), to provide a clear understanding of the acceptance and use technology. The model has four constructs which are social influence, facilitating conditions, performance expectancy and effort expectancy. The model included a moderating variables such as age, and experiences, voluntariness, which have impacts on the acceptance and use of technologies. Venkatesh et al. (2003) defined performance expectancy as the "degree to which an individual believes that using a particular technology will help improve their performance of their tasks easier."; social influence captures the impact of social factors on an individual's decision to use a particular technology.; effort expectancy as "assesses the extent to which an individual believes that using the technology will be free of effort" and facilitating conditions as "the extent to which an individual believes that technical infrastructure and support are in place to facilitate the use of the technology.".

  

Even though many studies used the constructs from various models to predict the factors influencing eLearning acceptance, it was found that no single theory or model could accurately predict how instructors or students would use eLearning systems. While many studies have been focused on eLearning systems usage among instructors, most existing studies on students' acceptance of using eLearning systems have been done in developed countries with more developed technologies. Consequently, there is a different technological influence on students' use of eLearning systems than in developing countries, including Tanzania. This study developed a measurement model based on the literature to identify the variables influencing UDOM eClassroom usage among students at the University of Dodoma. Therefore, this study proposes a research model that aims to investigate the factors influencing student's acceptance of UDOM eClassroom based on their perceived usefulness of UDOM eClassroom, perceived ease of use, facilitating condition, management support, subjective norms and students' attitude to the use of UDOM eClassroom. The description of the research model and hypotheses is as follows:

**2.4 The proposed research model**

The proposed study model is only used with students to identify the variables influencing their use of the UDOM eClassroom system. Based on the objective of the study, a review of the literature, and technological acceptance models or frameworks, the research model shown in Figure 1 adopted and integrated constructs from TAM, TRA, and UTAUT2. The following is a description of each modified construct:

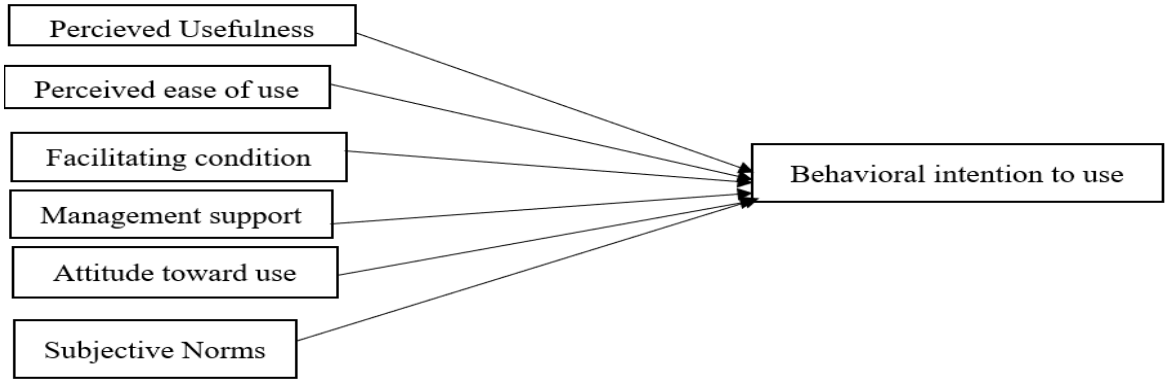


Figure 1: Research Model for Student Acceptance of UDOM eClassroom

**Perceived Usefulness.** In this study, perceived usefulness refers to the belief that a student has regarding how beneficial or advantageous it is to use a UDOM eClassroom system. It often relates to how students think using a UDOM eClassroom system will contribute positively to their learning (DeLone & McLean, 2003). If the student finds the UDOM eClassroom more functional, they will likely use it. Many studies have reported a direct relationship between perceived usefulness and eLearning system usage (Nanayakkara, 2007; Suhendro et al., 2020; Joo et al., 2018; Mtani & Mbelwa, 2022). The hypothesis for this factor is H1: *Perceived Usefulness has an effect on the students' UDOM eClassroom system usage*.

**Perceived ease of use.** Perceived ease of use refers to student perception of how effortless it is to use a UDOM eClassroom system. Previous studies have reported that perceived ease of use was significant to the eLearning system usage ( DeLone & McLean, 2003; Sukendro et al., 2020; Al-Fraihat et al., 2020; Joo et al., 2018; Alturki & Aldraiweesh, 2021). The hypothesis for this factor is H2: *Perceived ease of use has an effect on students' UDOM eClassroom system usage.*

**Facilitating Condition.** This variable measured a people's beliefs about the technical infrastructure needed to operate and support the intended system is in place, so adopting new technologies should not be a problem (Kasse et al., 2015). Previous studies have reported that facilitating conditions significantly affect ICT use (Cabellos et al., 2023; Paul et al., 2015; Ambarwati et al., 2020). The hypothesis for this factor is H3: *Facilitating condition has a positive effect on students' UDOM eClassroom system usage.*

**Management Support.** In this study, Management Support is the extent to which an individual believes that there is a management in place to provide support in case of any challenges regarding using the eLearning system. Previous studies have reported that support from management significantly affects ICT use (Szyszka et al., 2022; Eze et al., 2021). The hypothesis for this factor is H4: *Management support LMS has a positive effect on students' UDOM eClassroom system usage.*

**Subjective Norm.** In this study, subjective norms and students' intention to use the UDOM eClassroom system are based on their beliefs about whether students should use it. According to TRA, the subjective norm was a social factor influencing an individual's belief in ICT use. Previous research has shown that subjective norm was a significant factor

  

in using various systems (Hamid et al., 2020; Hussein, 2018). The hypothesis for this factor is H5: *Subjective norm has an effect on students' UDOM eClassroom system usage.*

**Student' Attitude.** This refers to students' perceptions of using a UDOM eClassroom system. This perception can be positive or negative about the usage of that system (Davis, 1989). students who have a positive attitude towards using UDOM eClassroom feel more comfortable using it, which affects the integration of the system usage (Mohebi & Bailey, 2020). Studies have shown that student attitude significantly affects eLearning system use (Chai et al., 2012; Mohebi & Bailey, 2020). The hypothesis for this factor is H6: *Student' attitude has an effect on students' UDOM eClassroom system usage.*

## 3.METHODOLOGY

### 3.1 Research design

This study adopted a survey research design and aimed at determining the factors contributing to the acceptance of the UDOM eClassroom system among students at the University of Dodoma. Using the construct: perceived usefulness of UDOM eClassroom, perceived ease of use, facilitating condition, management support, subjective norms and students' attitudes on the use of UDOM eClassroom obtained based on the literature and data collected from the University of Dodoma in Tanzania. The quantitative approach was employed to collect data through a questionnaire, and the obtained were analyzed using statistical package software (SPSS).

### 3.2 Data collection

The study used the questionnaire with the five-point Likert scale (Strongly Disagree, Disagree, Neutral, Agree, and Strongly Agree) with items consisting of demographic items, background items, TAM, TRA and UTAUT variables. The items in the questionnaire were modified based on the context of this study and based on the literature.

The study adopted the formula from Green (1991) to determine the minimum sample size. $N > 50+8k$, where k is the number of independent variables, is the result of the formula. Given the ten factors in the study, a minimum sample size of $50 + (6*10) = 110$ was needed for this investigation. The participants in this research study consisted of 101 students (First year, Second Year, Third year and Fourth year) with a Bachelor of Science in Computer Engineering (BSc. CE), Bachelor of Science in Software Engineering (BSc. SE), Bachelor of Science in Computer Network and Information Security Engineering (BSc. CNISE), Bachelor of Science in Health Information System (BSc. HIS), Bachelor of Science in Information System (BSc. IS), Bachelor of Science in Telecommunication Engineering (BSc. TE), Bachelor of Science in Digital Content and Broadcasting Engineering Natural Science (BSc. DCBE), Bachelor of Science in Computer Science (BSc. CS), Bachelor of Science in Cyber Security and Digital Forensic Engineering (BSc. CSDFE), Bachelor of Science in Instructional Designing and Information Technology (BSc. IDIT), Bachelor of Science in Multimedia technology and Animation (BSc. MTA), Diploma in Educational Technology (DET) and Diploma in Information Communication Technology (DICT). Respondents in UDOM were given the link to the self-administered questionnaire via a Google Form. Confidentiality was guaranteed, and 101 respondents filled out the questionnaires. Table 2 show the item found in the questionnaire.

Table 2: Data Collection Instrument

| Factor | Code | Item |
|---|---|---|
| Perceived usefulness | PUQ1 | Using the UDOM eClassroom will make it easier to do my learning tasks |
| | PUQ2 | Using the UDOM eClassroom in my learning activities will enable me to accomplish tasks more quickly. |
| | PUQ3 | I find the UDOM valuable e-classroom in my learning activities. |
| | PUQ4 | Using the UDOM e-eClassroom will increase my tendency to learn. |
| | PUQ5 | Using the UDOM eClassroom gives greater control over learning. |
| | PUQ6 | Using the UDOM eClassroom in my courses will increase my performance. |
| Perceived ease of use | EUQ1 | Learning to operate the UDOM eClassroom is easy for me. |

  

| | | |
|---|---|---|
| | EUQ2 | I find it easy to get the UDOM eClassroom to do what I want. |
| | EUQ3 | My interaction with the UDOM eClassroom is clear and understandable. |
| | EUQ4 | It is easy for me to become skillful at using the UDOM e-eClassroom |
| | EUQ5 | I find the UDOM eClassroom to be flexible to interact with |
| | EUQ6 | I find the UDOM eClassroom easy to use. |
| Facilitating Condition | FCQ1 | The training provided by the IT Unit has enhanced my ability to use UDOM e-eClassroom |
| | FCQ2 | Specialized instruction concerning the UDOM e eClassroom is available to me. |
| | FCQ3 | There is UDOM eClassroom support staff who give me prompt service by responding quickly to my request for help. |
| | FCQ4 | A specific person (or group) can assist with UDOM eClassroom system difficulties. |
| Management Support | MGQ1 | Management is keen to see that students are happy with using UDOM eClassroom for learning purposes. |
| | MGQ2 | Management is always there to support and encourage using UDOM eClassroom for learning. |
| | MGQ3 | Management provides good access to necessary hardware and software resources when people need them for operating the UDOM e-eClassroom. |
| Attitude towards use | ATTQ1 | Using UDOM eClassroom is a good idea. |
| | ATTQ1 | Using UDOM eClassroom is a wise idea. |
| | ATTQ2 | I like the idea of using the UDOM eClassroom. |
| | ATTQ3 | Learning through the use of UDOM eClassroom is a good idea. |
| | ATTQ4 | I think it is worthwhile to use UDOM eClassroom. |
| Subjective Norms | SNQ1 | My fellow Students, who are more important to me, think I should use CIVE e-classroom. |
| | SNQ2 | My fellow students who are familiar with me think I should use the CIVE e-classroom. |
| | SNQ3 | Most students surrounding me use the CIVE e-classroom. |
| | SNQ4 | Students who influence my behavior think that I should CIVE e-classroom. |
| Behavioral intention to use UDOM e-eClassroom | BIQ1 | I intend to continue using the UDOM eClassroom in the future. |
| | BIQ2 | I will always try to use UDOM eClassroom in my daily life. |
| | BIQ3 | I recommend my colleagues to use UDOM e-eClassroom |
| | BIQ4 | I plan to continue using UDOM eClassroom frequently. |

### 3.3 Data analysis

The qualitative data was analyzed to determine the relationship between the independent variables: perceived usefulness of UDOM eClassroom, perceived ease of use, facilitating condition, management support, subjective norms and students' attitude the use of UDOM eClassroom. The SPSS was used to conduct the analysis.

#### 3.3.1 Demographic information

Table 3 shows that the majority (55.4%) of the research's respondents were male, while females (44.6%) were female. The study sample also indicates that most of the study respondents were students from the field of educational technology, which were Diploma in Educational Technology (DET) and Bachelor of Science in Instructional Design and Information Technology (BSc. IDIT) simply because of the relevance of their program and the system. Also, most students were in the first year (48.5%). This disproportional sex representation is triggered by the nature of the undergraduate program in the UDOM population, which is made up of more male students. Furthermore, the sampling technique employed could have influenced the obtained sample. The data also show that most respondents were in first-year degree programs in terms of study programmes.

Table 3: Demographic information

| Characteristics(n=64) | | Frequency | Percent |
|---|---|---|---|
| **Gender** | Female | 45 | 44.6 |
| | Male | 56 | 55.4 |
| **Degree program** | BSc. CE | 4 | 4.0 |
| | BSc. SE | 8 | 7.9 |
| | BSc. CNISE | 7 | 6.9 |
| | BSc. HIS | 4 | 4.0 |
| | BSc. BIS | 2 | 2.0 |
| | BSc .TE | 6 | 5.9 |
| | BSc. DCBE | 7 | 6.9 |
| | BSc. CS | 2 | 2.0 |
| | BSc. CSDFE | 5 | 5.0 |
| | Bsc.IS | 6 | 5.9 |
| | BSc. IDIT | 18 | 17.8 |
| | BSc. MTA | 9 | 8.9 |
| | DET | 15 | 14.9 |
| | DICT | 7 | 6.9 |
| **Year of study** | 1st year | 49 | 48.5 |
| | 2nd year | 33 | 32.7 |
| | 3rd Year | 17 | 16.8 |
| | 4th Year | 2 | 2.0 |

## 4 RESEARCH FINDINGS

### 4.1 Sampling adequacy

A structural model was tested using the Bartlett test and Kaiser-Meyer-Olkin (KMO) sampling adequacy on 33 items. Kaiser (1974) asserts that a KMO of less than 0.5 is insufficient. The KMO of this study was 0.804, showing that factor analysis can be performed. Since the sample was sufficient. In addition, the Bartlett test of sphericity was performed; a p-value of less than 0.05 suggested a statistically significant relationship between the variables, indicating that principal component analysis was sufficient.

### 4.2 Reliability and validity

The reliability of the 32 items was examined using Cronbach's alpha to determine the internal consistency of the items, which was found to be 0.902. George & Mallery (2003) state that Cronbach's alpha values greater than 0.5 are considered good. All of the variables' Cronbach's alpha values were above 0.5, which is the recommended value and indicates that the items had good consistency. The reliability analysis of the seven constructs is shown in Table 4.

  

Table 4: Cronbach's alpha of items

| Variable | No. of Items | Cronbach's Alpha |
|---|---|---|
| Perceived usefulness | 6 | 0.911 |
| Perceived ease of use | 6 | 0.889 |
| Facilitating condition | 4 | 0.827 |
| Management Support | 3 | 0.851 |
| Attitude toward use | 5 | 0.907 |
| Subjective Norms | 4 | 0.895 |
| Behavioral intention to use UDOM eClassroom | 4 | 0.846 |

**4.3 Identifying the factor structure**

Using principal component analysis, Kaiser Normalization and Varimax rotation were used to conduct factor analysis on 32 items. Factor analysis was utilized to ascertain whether the related items were grouped under the same construct. Sass (2010) states that a factor loading value of more than 0.5 is appropriate. As a result, the items with factor loading values lower than 0.5 were eliminated. The factor loading value for each item is shown in Table 5.

Table 5: Factor loading per each item with Varimax rotation and Kaiser Normalization

| Factor | Item with Varmax rotation | Loadings |
|---|---|---|
| Perceived usefulness | PUQ1 | 0.778 |
| | PUQ2 | 0.732 |
| | PUQ3 | 0.607 |
| | PUQ4 | 0.705 |
| | PUQ5 | 0.815 |
| | PUQ6 | 0.782 |
| Perceived ease of use | EUQ2 | 0.683 |
| | EUQ3 | 0.784 |
| | EUQ4 | 0.643 |
| | EUQ5 | 0.692 |
| | EUQ6 | 0.687 |
| Facilitating Condition | FCQ1 | 0.523 |

  

| | | |
|---|---|---|
| | FCQ2 | 0.742 |
| | FCQ3 | 0.882 |
| | FCQ4 | 0.764 |
| Management Support | MGQ1 | 0.697 |
| | MGQ3 | 0.608 |
| | ATTQ1 | 0.749 |
| Attitude towards use | ATTQ2 | 0.836 |
| | ATTQ3 | 0.770 |
| | ATTQ4 | 0.751 |
| | ATTQ5 | 0.608 |
| | SNQ1 | 0.808 |
| Subjective Norms | SNQ2 | 0.724 |
| | SNQ3 | 0.770 |
| | SNQ4 | 0.768 |
| Behavioral intention to use UDOM eClassroom system | BIQ1 | 0.763 |
| | BIQ2 | 0.658 |
| | BIQ4 | 0.618 |

**4.4 Model summary**

Six factors were subjected to multiple linear regression to measure the success of the model and predict the factors contributing to the student's acceptance of UDOM eClassroom usage. The six factors were the usefulness of UDOM eClassroom, perceived ease of use, facilitating condition, management support, subjective norms and students' attitudes about using UDOM e-eClassroom. The results show that the variance (adjusted R2=0.520) indicates that 52% of students' UDOM eClassroom usage is influenced by the factors from this research model. Table 6 presents a summary of the research model.

Table 6: Summary of the research model

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| | .741[a] | .549 | .520 | 2.31499 |

**4.5 Hypothesis Testing**

Multiple regression was used to determine the statistical significance of each hypothesis and its effect on the UDOM eClassroom. The study found that all hypotheses were statistically significant in UDOM eClassroom usage at p-value $p< 0.05$. Table 7 is a summary of the hypothesis test.

Table 7: Summary of the hypothesis test

| | Hypothesis | Results | Conclusion |
|---|---|---|---|
| H1 | Perceived usefulness has an effect on students' UDOM eClassroom usage. | $\beta = .657$, $p=.0.000<0.05$ | Supported |

| | | | |
|---|---|---|---|
| H2 | Perceived ease of use has an effect on students' UDOM eClassroom usage. | β = .525, p=.000< 0.05 | Supported |
| H3 | Facilitating condition has an effect on students' UDOM eClassroom usage. | β = .384 p=.000<0.05 | Supported |
| H4 | Management support has an effect on students' UDOM eClassroom usage. | β = .560, p=.000<0.05 | Supported |
| H5 | Subjective norm has an effect on students' UDOM eClassroom usage. | β = .100, p=.224>0.05 | Supported |
| H6 | Attitude has an effect on students' UDOM eClassroom usage. | β = .621, p=.000<0.05 | Supported |

## 5 DISCUSSION

The study aimed to examine the factors that led to the acceptance of the UDOM eClassroom system among students in Tanzania. Based on the literature review, the adapted TAM, TRA, and UTAUT2 constructs were used to achieve this research's objective. This study revealed that six hypotheses were tested, and all hypotheses were supported.

The perceived usefulness of LMS was found to be a statistically significant factor for predicting the students' behavioral intention to use the UDOM eClassroom system. The study aligned with previous findings (Joo et al., 2016; Sukendro et al., 2020; Alturki & Aldraiweesh, 2021). Students will have more positive intentions to use the UDOM eClassroom system if they find that the UDOM eClassroom system is essential to their learning. Therefore, educational institutions should make students aware of the eLearning system's advantages in their learning.

The result found that perceived ease of use was a significant factor in students' behavioral intention to use the UDOM eClassroom system. The findings correlate with the previous research that revealed the easier the eLearning system is, the increase the positive intention to use (Sukendro et al., 2020; Al-Fraihat et al., 2020; Joo et al., 2018; Alturki & Aldraiweesh, 2021). Therefore, the educational institution shall implement learning platforms which are more accessible and friendly to students so that they can use them comfortably in their learning.

Thus, if the students receive support on using UDOM eClassroom from the management, they will have confidence in the intention to use UDOM eClassroom. When the students lack support, they cannot use CIVE eClassroom comfortably. Therefore, University management should provide support to students on CIVE eClassroom use. Raphael Mtebe (2016) also supported this and found that the main challenge preventing instructors from successfully facilitating blended courses via the eLearning system was the management's lack of technical and pedagogical support. University management should support using CIVE eClassroom and other learning platforms by creating an environment that promotes and facilitates the utilization of educational technologies.

Also, the results revealed that facilitating conditions were statistically significant on students' behavioral intention to use the UDOM eClassroom system. The results are consistent with the study done by Ambarwati et al. (2020), who found that resources such as supporting infrastructures and internet access influence the behavioral intention to use Online Learning Platforms. This contradicts Kamaghe et al. (2021), who revealed that individuals may find it difficult to accept a web-based technology if they receive insufficient help, delayed support, inaccurate information, or insufficient resources. Also, Cabellos et al. (2023) observed that a lack of school facilitating conditions may affect ICT usage. The higher education management must increase the availability of resources for the optimal use of various eLearning platforms.

The result has found that Subjective norm was a significant factor in predicting students' behavioral intention on using UDOM classroom. This is similar to the study by Hussein (2018), who revealed that Subjective norms had a positive relationship with students' behavioral intention to use the eLearning system in Malaysian universities. This contradicts the study by (Attuquayefio et al., 2014), who revealed an insignificant prediction of students' behavioral intention to adopt ICT with the subjective norm. It is, therefore, essential for higher education management to use peer groups among students to help each other and promote awareness of using the eLearning system so that they can discover its usefulness and subsequently use it.

The findings significantly impacted the students' attitudes and behavioral intentions toward using UDOM eClassroom. The result is in line with the study done by Edmunds et al. (2012), who observed that students' attitude impacts ICT use in course study. However, attitudes towards ICT use can be positive or negative due to variations in ICT experience, skills and training( Semercy et al., 2018). It is, therefore, essential for education institution management to provide ICT training programs to make students aware of the potentiality of the eLearning system.

## 6 CONCLUSION AND RECOMMENDATIONS

The research is based on a survey among students at the CIVE of the University of Dodoma (Tanzania) in June-July 2022. The university implemented and adopted the UDOM eClassroom during COVID-19 and continued to use it even

  

after the pandemic impacts. A quantitative analysis was used to examine the collected data from 101 participants. The result indicated that perceived usefulness, ease of use, facilitating condition, management support, students' attitudes and subjective norms significantly impact student acceptance of the UDOM eClassroom. This research provides valuable insight for higher education institutions in case the COVID-19 situation forces them to continue teaching and learning online. Nevertheless, this work has limitations since only one college at the University of Dodoma was observed. Realizing comparative research between different fields of specialization among students would be reasonable to understand influencing factors on the use of UDOM eClassroom. Therefore, the education institution management should provide support, training, and facilitating conditions to improve the UDOM eClassroom usage among the students at the university.

**REFERENCES**


Abdul Hamid, M., Salleh, S., & Laxman, K. (2020). A Study on the Factors Influencing Students' Acceptance of Learning Management Systems (LMS): A Brunei Case Study. *International Journal of Technology in Education and Science*, *4*(3), 203–217. https://doi.org/10.46328/ijtes.v4i3.101

Al-Fraihat, D., Joy, M., Masa'deh, R., & Sinclair, J. (2020). Evaluating E-learning systems success: An empirical study. *Computers in Human Behavior*, *102*, 67–86. https://doi.org/10.1016/j.chb.2019.08.004

Ambarwati, R., Harja, Y. D., & Thamrin, S. (2020). The Role of Facilitating Conditions and User Habits: A Case of Indonesian Online Learning Platform. *Journal of Asian Finance, Economics and Business*, *7*(10), 481–489. https://doi.org/10.13106/jafeb.2020.vol7.no10.481

Attuquayefio, S. N., Achampong, A. K., & Aryeetey, I. T. (2014). Extending Tam With Social Norm To Model Students ' Intentions To Adopt Ict. *European Scientific Journal, 10*(14), 435–446.

Buluma, A., Walimbwa, M., Mbulankende, J. S., & Nabiryo, R. (2023). *In-service teachers ' readiness to adopt technology-enhanced pedagogy in a Sub-Saharan country*. *19*(2), 58–74.

Cabellos, B., Siddiq, F., & Scherer, R. (2023). The moderating role of school facilitating conditions and attitudes towards ICT on teachers' ICT use and emphasis on developing students' digital skills. *Computers in Human Behavior*, *150*(September 2023), 107994. https://doi.org/10.1016/j.chb.2023.107994

Chai, C. S., Koh, J. H. L., Ho, H. N. J., & Tsai, C. C. (2012). Examining preservice teachers' perceived knowledge of TPACK and cyberwellness through structural equation modeling. *Australasian Journal of Educational Technology*, *28*(6), 1000–1019. https://doi.org/10.14742/ajet.807

Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly: Management Information Systems*. https://doi.org/10.2307/249008

DeLone, W., & McLean, E. (2003). he DeLone and McLean model of information systems success: a ten-year update." information systems. *Journal of Management*, *19*(4), 9–30.

Edmunds, R., Thorpe, M., & Conole, G. (2012). Student attitudes towards and use of ICT in course study, work and social activity: A technology acceptance model approach. *British Journal of Educational Technology*, *43*(1), 71–84. https://doi.org/10.1111/j.1467-8535.2010.01142.x

Hussein, Z. (2018). Subjective norm and perceived enjoyment among students in influencing the intention to use e-learning. *International Journal of Civil Engineering and Technology*, *9*(13), 852–858.

Joo, Y. J., Kim, N., & Kim, N. H. (2016). Factors predicting online university students' use of a mobile learning management system (m-LMS). *Educational Technology Research and Development*. https://doi.org/10.1007/s11423-016-9436-7

Joo, Y. J., Park, S., & Lim, E. (2018). Factors influencing preservice teachers' intention to use technology: TPACK, teacher self-efficacy, and Technology Acceptance Model. *Educational Technology and Society*, *21*(3), 48–59.

Kamaghe, J. S. M. A. I. for S. and T. (2021). *The Challenges of Adopting M-Learning Assistive Technologies for Visually Impaired Learners in Higher Learning Institution in Tanzania*.

Kasse John Paul, Moya Musa, & Annette K. Nansubuga. (2015). Facilitating Condition for E-learning Adoption—Case of Ugandan Universities. *Journal of Communication and Computer*, *12*(5). https://doi.org/10.17265/1548-7709/2015.05.004

Mohebi, L., & Bailey, F. (2020). Exploring Bem's self-perception theory in an educational context. *Encyclopaideia*, *24*(58), 1–10. https://doi.org/10.6092/issn.1825-8670/9891

Mtani, H., & Mbelwa, J. (2022). Factors affecting Learning Management Systems Usage in Higher Learning Institutions in Tanzania: A Case of University of Dodoma. *International Journal of Education and Development Using Information and Communication Technology (IJEDICT)*, *18*(1), 7–26.

Munir, F., Anwar, A., & Kee, D. M. H. (2021). International Review of Research in Open and Distributed Learning Online Learning and Students ' Fear of COVID-19 : Study in Malaysia and Pakistan Online Learning and Students ' Fear of COVID-19 : Study in Malaysia and Pakistan Abstract. *International Review of Research in*


  

*Open and Distributed Learning*, *22*(1), 1–21.
Nanayakkara, C. (2007). A Model of User Acceptance of Learning Management Systems : a study within Tertiary Institutions in New Zealand. *The International Journal of Learning*, *13*(12), 223–232. http://ijl.cgpublisher.com/product/pub.30/prod.1263
Sass, D. A. (2010). Factor loading estimation error and stability using exploratory factor analysis. *Educational and Psychological Measurement*, *70*(4), 557–577. https://doi.org/10.1177/0013164409355695
Semerci, A., & Aydın, M. K. (2018). Examining High School Teachers' Attitudes towards ICT Use in Education. *International Journal of Progressive Education*, *14*(2), 93–105. https://doi.org/10.29329/ijpe.2018.139.7
Sukendro, S., Habibi, A., Khaeruddin, K., Indrayana, B., Syahruddin, S., Makadada, F. A., & Hakim, H. (2020). Using an extended Technology Acceptance Model to understand students' use of e-learning during Covid-19: Indonesian sport science education context. *Heliyon*, *6*(11), e05410. https://doi.org/10.1016/j.heliyon.2020.e05410
Szyszka, M., Tomczyk, Ł., & Kochanowicz, A. M. (2022). Digitalisation of Schools from the Perspective of Teachers' Opinions and Experiences: The Frequency of ICT Use in Education, Attitudes towards New Media, and Support from Management. *Sustainability (Switzerland)*, *14*(14). https://doi.org/10.3390/su14148339
TCU. (2022). *The Tanzania Commision for Universities: Guidelines for Online and Blended Delivery Modes of Courses for University Institutions in Tanzania*. 1–7.
Tornatzky, L. G., & Fleischer, M. (1990). The Process of Technology Innovation. In *Lexington Books, Lexington, MA.* https://doi.org/10.1016/S0925-5273(98)00075-9
UNESCO. (2023). *Education and Statistics: Covid 19 impact on education*. https://www.unesco.org/en/data-center
Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. *MIS Quarterly: Management Information Systems*. https://doi.org/10.2307/30036540
Yunusa, A., TemitayoSanusi, I., Dada, O., Oyelere, S., Agbo, F., Obaido, G., & Aruleba, K. (2021). The Impact of the COVID-19 Pandemic on Higher Education in Nigeria: University Lecturers' Perspectives. *International Journal of Education and Development Using Information and Communication Technology (IJEDICT)*, *17*(4), 43–66.

  

# THE EFFECT OF SOCIAL MEDIA ON COMMUNICATION BARRIERS IN HIGHER EDUCATION (CASE STUDY CYPRUS INTERNATIONAL UNIVERSITY CIU)

Prof. Dr. Aytekin İŞMAN
SAU, Faculty of Communication
isman@sakarya.edu.tr

Saeideh SHAKIBI
CIU, Master Student
shakibis87@gmail.com

**ABSTRACT**
Social media has transformed higher education communication between students, professors, and institutions. As this study shows, social media enhances and alleviates communication challenges in higher education. This study examines effect of social media on communication barriers in higher education.
The study employed quantitative approach. Data was drawn from 136 academic faculty, administrators, and students in higher education institutions. Descriptive and correlation analysis was conducted. The result shows that frequency of using social media for academic purposes correlated positively with privacy and security, information overload and language interpretation issues. Technical issue was observed to have an insignificant correlation with frequency of social media for academic purposes. It's crucial to consider the complex interplay of factors that lead to challenges across various contexts, including professional and educational settings. Institution should stive to Achieve effective communication modalities within educational environments which requires not just an awareness of the diverse obstacles but also a commitment to developing strategies that promote clear, inclusive, and empathetic interactions.
**Key words:** social media, Communication, Higher Education. awareness

## INTRODUCTION

Higher education has recently experienced a significant shift, principally driven by the extensive integration of social media platforms. The dramatic movement described here goes beyond the conventional boundaries of academia, fundamentally altering the nature of communication among students, teachers, and educational institutions. The teaching and learning process is effective when communication is passed from the teacher to the students who understand the message fully (Harran,2014).

## MEDIA

Media refers to a vehicle or means of message delivery system to carry and message to a target audience. Media such as TV, Radio, Print, Out-of-Home, and Internet are instruments to convey the advertising message to the public (Pantograph Support, 2020). The use of media as channels of communication has been in existence since the stone age when rocks, stones and other objects were used to send messages from the source to the receivers (Adegbija, 2012). Teacher education programs recognize the importance of preparing future teachers to be skilled in digital and media literacy. media is defined as "all means of communication, whatever its format." In this sense, media include symbol systems as diverse as print, graphics, animation, audio, and motion pictures. Technology is defined as "any object or process of human origin that can be used to convey media." In this sense, technology includes phenomena as diverse as books, films, television, and the Internet. With respect to education, media are the symbol systems that teachers and students use to represent knowledge; technologies are the tools that allow them to share their knowledge representations with others. Unfortunately, it is common to confound the meanings of media and technology in education, and they are often used synonymously (Reeves,1998).

## SOCIAL MEDIA

As computer scientists are quick to point out, most of the apparently new characteristics of social media existed long before the advent of Facebook. Since the early 1970s, internet applications have allowed users to exchange messages with each other, maintain personal profiles, curate lists of ‘friends’ and write blog-like journal entries. It is therefore important to remember from the outset that ‘the web has always been social (Halpin & Tuffield, 2010). As online tools and technologies have developed, social media has become regarded as a key tool for supporting applied learning activities. Social media technologies provide tutors with the means to engage learners with valuable time-on task learning (Purvis, 2016). As such, the most immediate significance of social media for higher education is the apparently changing nature of the students who are entering university. In a practical sense, the highly connected, collective, and creative qualities of social media applications are seen to reflect (and to some extent drive) more flexible, fluid and

  

accelerated ways of being. Social media are therefore associated with an increased tendency for young people to multitask, to rely on a 'digital juggling' of daily activities and commitments (Subrahmanyam &Šmahel, 2011).

**COMMUNICATION**

Since the Millennial generation is the newest set of individuals to enter the workforce, this specific group will be looked upon as a possible reason communication in higher education is lacking now, with solutions given that may help to resolve this issue (Howard,2014). Communication is the actionable transfer of information from one person, group, or place to another by writing, speaking, or using a medium that provides a means of understanding. Every communication consists of a minimum of one sender, a receiver, and a message. The transmission of a message from sender to recipient risks being affected by many things because communication impacts how people interact. These include the location, medium used to communicate, the cultural situation, and the emotions involved. However, communication helps people to interact and share various aspects of life (Ntara, 2023). The general view of communication is that it is an interaction within a social context. Communication usually involves a sender (source) and a receiver. It involves the interlocutors' exchanging signals. These signals could be verbal or graphic, it could be gestural or visual photographic (Fatimayin,2018).

**BARRIER**

It's crucial to consider the complex interplay of factors that lead to challenges across various contexts, including professional and educational settings. Beyond linguistic, psychological, emotional, physical, and cultural barriers, advancements in technology and social media have introduced new opportunities and challenges for communication. The digital divide, information overload, and nuances in online engagement styles can complicate communication processes further. In educational settings like distance learning, an institution's maturity and capability in utilizing digital platforms are critical in overcoming these barriers. Achieving effective communication in these environments requires not just an awareness of the diverse obstacles but also a commitment to developing strategies that promote clear, inclusive, and empathetic interactions. This involves enhancing digital literacy, fostering a culture of active listening and feedback, and creating environments that support diverse communication needs and styles.

Barriers almost inevitably develop when two people attempt to join together in the pursuit of common objectives. Because no two individuals are identical in terms of background, experience, mood, and expectations, the process of coming to know one another involves a series of potential roadblocks as differences are identified and worked through (Quill,1995). The process of communication has multiple barriers. The intended communique will often be disturbed and distorted leading to a condition of misunderstanding and failure of communication. The Barriers to effective communication could be of many types like linguistic, psychological, emotional, physical, and cultural etc (Toppr, n.d). Several barriers retard effective communication. These can be divided into four categories: process barriers, physical barriers, semantic barriers, and psychosocial barriers. To improve the effectiveness of communications, schools must develop an awareness of the importance of sender's and receiver's responsibilities and adhere to active listening skills (Lunenburg,2010). This is true of distance education, and it is especially true when the individuar s organization is at a low stage of maturity or capabilities regarding distance education (Berge, 2007)

**COMMUNICATION BARRIER**

The elements that make interpersonal communication unsuccessful are referred to as communication obstacles. Understanding the elements that promote successful communication is crucial to comprehending these hurdles fully. Effective communication occurs when the recipient receives the sender's intended message exactly. Strong listening abilities are necessary for both the sender and the recipient to engage in effective communication. This is so because feedback is a communication component; hence, the roles are interchangeable.

Education-related communication barriers impact students, teachers, and institutions. They can be caused by various psychological, pedagogical, technological, social, cultural, emotional, temporal, and feedback-related problems. These barriers exacerbate the complex communication dynamics that exist in educational environments. Psychological barriers include things like disparate attitudes and perspectives. Pedagogical obstacles are a result of curriculum design and instructional strategies. Technical barriers to smooth communication arise from difficulties utilizing tools or technology. Power relations and cultural differences produce social obstacles. Cultural barriers can lead to miscommunication due to differences in cultural backgrounds. Temporal barriers are time problems that affect real-time communication, particularly in online learning. Emotional walls draw attention to the lack of emotional ties, essential in a few in-person encounters. The absence of prompt feedback is associated with feedback-related hurdles, which can impact the quality of communication. To create inclusive and productive learning environments, it is imperative to remove these obstacles. This calls for the development of clear, culturally aware, and technologically advanced communication tools in the classroom, particularly in the context of online and digital learning.

  

The literature is replete with discussion of the various barriers to distance education. These can be categorized several ways such as psychological, pedagogical, technical, social, cultural, and so forth. (Berge, 1998) Likewise, as increased communication allows for collaborative activities within the distance education course, more complex communication barriers come into existence, too (Berge,2013). A communication barrier is anything that prevents us from receiving and understanding the messages others use to convey their information, ideas, and thoughts. (Rani,2016). difficulties communicating with others in online classes can happened because of time zone variations, the absence of a sense of emotional connection with each other, or the lack of the kind of real-time feedback that happens in an in-person classroom (Kim, Liu, & Bonk, 2005).

**HIGHER EDUCATION**

According to the references, Higher education, any of various types of education given in postsecondary institutions of learning and usually affording, at the end of a course of study, a named degree, diploma, or certificate of higher studies. Higher-educational institutions include not only universities and colleges but also various professional schools that provide preparation in such fields as law, theology, medicine, business, music, and art. Higher education also includes teacher-training schools, junior colleges, and institutes of technology. The basic entrance requirement for most higher-educational institutions is the completion of secondary education, and the usual entrance age is about 18 years (Britannica, 2024). Higher education has now become a part of the wider globalization process**.** Due to globalization, the internationalization of higher education is regarded as one of the leading trends that determine the value foundations of the functioning of modern universities (Sharipov, 2020). Modern higher education is defined as an organized tertiary learning and training activities and institutions that include conventional universities such as arts, humanities, and science faculties and more specialized university institutions in agriculture, engineering, science, and technology. The concept of higher education also includes such post-secondary institutions like polytechnics, colleges of education, and “grandes école.” Under the umbrella of higher education come all forms of professional institutions. Even this wide spectrum does not exhaust the possibilities of forms of higher education (AssiéLumumba, 2007).

**IMPORTANCE OF STUDY**

Considering current educational practices, this research is highly noteworthy. Considering the increasing use of social media, it tackles the urgent need to comprehend the changing communication dynamics within academic institutions. provide educators and institutions with a lens to view the evolving communication patterns between professors and students in the digital age, where social media platforms are integral to daily interactions. Comprehending this is essential to modify instructional strategies, student engagement tactics, and general educational procedures to conform to the tastes and actions influenced by social media.

The study explores social media's opportunities and problems in higher education. It tackles possible obstacles, including information overload and privacy concerns, allowing instructors to take these challenges head-on. The research also identifies positive effects, including dismantling conventional barriers and encouraging international collaboration, which enable educators to use social media to provide students with richer educational experiences. Assessing how social media affects student-teacher interactions includes information about upholding moral principles and academic integrity in an online learning environment. The study's overall importance rests in providing a comprehensive understanding of how social media affects communication dynamics in higher education, enabling institutions and teachers to meet obstacles and seize possibilities in the digital era of learning.

**RESEARCH GOAL**

An in-depth investigation of the dynamic interaction between social media usage and communication dynamics within higher education is the main study objective of the paper "The Effect of Social Media on Communication Barriers in Higher Education." With a focus on traditional forms of communication between students, teachers, and academic institutions, this research aims to clarify the complex effects of social media. Considering the increasing integration of social media, the study attempts to identify and classify potential communication hurdles.

The quality in communication and its effects on people’s lives can be improved once clarify its meaning and the meaning of education which is the major concept on which a structured society is based. Communication is a process that includes linear, interactive, and transactional views from different perspectives barriers (Işman,.2004).

The research's ultimate objective is to recognize and comprehend the communication difficulties brought on by social media and offer insightful analysis and helpful suggestions.

**PROBLEM STATEMENT**

This study's problem statement is based on how higher education is changing and how social media is becoming increasingly common. While using social media in academic settings has many advantages—such as improved

  

connectivity and opportunities for collaboration—it has also raised some possible issues that should be carefully considered. A thorough grasp of the complex effects of social media on communication dynamics in higher education is lacking in the body of current knowledge in higher education, communication barriers can be broadly classified based on issues that affect students, faculty, and institutions. This is especially true in light of the rise in social media usage.

## THEORETICAL FRAMEWORK AND HYPOTHESES DEVELOPMENT

To comprehend how social media affects communication dynamics in higher education, the theoretical framework for this study incorporates elements of both communication accommodation theory and social presence theory.

The Social Presence Theory, first put forth by Short, Williams, and Christie in 1976, asserts that the level of social presence in a mediated setting affects the effectiveness of communication. Short et al. (1976) devised social presence theory to understand interpersonal communication and relationship building in a business setting when using telecommunication media and how this affects the social influence communication partners may exert on each other. According to them, each telecommunication medium is characterized by the degree to which it can communicate verbal and nonverbal cues conveying socio-emotional information in such a way that the other persons involved in the communication are perceived as physical "real" and present. Accordingly, they defined social presence as the "degree of salience of the other person in the interaction and the consequent salience of the interpersonal relationships" (Kreijns,2022). Social presence is associated with the use of computer-mediated communication (CMC) tools and electronic platforms for OGL in terms of the degree to which these CMC tools and electronic platforms can transfer the same face-to-face interpersonal communication, group learning, and group dynamics when learning and working together in an online setting. Social presence influences the way how the social interaction in OGL groups unfolds online, which, in turn, affects the learning outcomes (Zhao, 2014).

In Communication Accommodation Theory (CAT) the focus is based on three types of adjustments, convergence, divergence and maintenance. (Gallois,2005). Communication Accommodation Theory (CAT) provides a wide-ranging framework aimed at predicting and explaining many of the adjustments individuals make to create, maintain, or decrease social distance in interaction. It explores the different ways in which we accommodate our communication, our motivations for doing so, and the consequences. CAT addresses interpersonal communication issues, yet also links it with the larger context of the intergroup stakes of an encounter (Giles, 2007). The proposition by Short, Williams, and Christie (1976) that social media platforms create a virtual presence aligns seamlessly with the exploration of global collaboration and intergenerational relationships in higher education. This theory serves as a foundation for understanding how social media transcends physical barriers, fostering a sense of presence in the digital realm (Short, 1976). This theory, when applied to the context of higher education, aids in understanding how the incorporation of social media may cause changes in the ways that institutions, teachers, and students communicate with one another. The study's examination of the advantages and disadvantages of social media use and its possible effects on face-to-face communication abilities is pertinent, given the theory's emphasis on convergence and divergence in communication behaviours.

The combination of CAT and Social Presence Theory offers a thorough framework for comprehending the intricate relationship between communication dynamics and social media in higher education. They cover social media's virtual presence and people's adaptable communication techniques in reaction to technological advancements. Scholars have devoted considerable attention to the integration of social media in higher education, resulting in extensive research aimed at identifying potential benefits and challenges. Several notable studies have examined the intricate relationship between academic communication dynamics and social media, contributing to a deeper understanding of this evolving landscape. Research by Muilenburg and Berge (2003) highlights organizational, technological, and expertise barriers in educational contexts. These findings are relevant to comprehending comparable barriers in higher education's usage of social media for communication. This link emphasizes the wider effects of obstacles to technology adoption at all educational levels. This research offers a fundamental understanding of the challenges faced in educational settings while implementing new technology, which makes it directly relevant to the current study. Insights into the possible difficulties and factors to be considered for higher education institutions utilizing social media as a strategy for overcoming communication barriers can be obtained by looking at the barriers found in the K–12 setting.

Berge's (2013) extensive research scrutinized education as a communication process, with a focal point on distance education. The study provided insights into the nuanced communication processes within both traditional in-person and remote teaching and learning settings, shedding light on the unique dynamics facilitated by technology. Providing a comparison of communication across traditional and remote learning environments, this study sheds light on the intricacies of communication in education, highlighting the revolutionary impact of technology on the dynamics of teaching and learning. Its understanding of the subtle communication facilitated by technology in remote learning offers a strong basis for comprehending how social media can affect communication barriers in higher education.

  

Bash (2009) explored the problematic aspects of intercultural communication within the internationalized higher education market. The research delved into the impact of globalization on knowledge dissemination, the compatibility of distinct national higher education cultures, and the potential for successful cross-cultural cooperation. Providing a comparison of communication across traditional and remote learning environments, this study sheds light on the intricacies of communication in education, highlighting the revolutionary impact of technology on the dynamics of teaching and learning. Its understanding of the subtle communication facilitated by technology in remote learning offers a strong basis for comprehending how social media can affect communication barriers in higher education.
Rani (2016) investigated the intricacies of communication barriers, underscoring the fundamental concept that effective communication necessitates shared meaning. The study emphasized the critical role of shared understanding in overcoming communication challenges within an academic context. The necessity of effective communication through shared meaning and comprehension of the communication environment is emphasized in this essay. It lists and examines the five main obstacles that prevent effective message transmission: behavioral, cultural, linguistic, attitude, and environmental barriers. The essay emphasizes how disparities in beliefs, attitudes, and discrimination lead to breakdowns in workplace communication and emphasizes the significance of appreciating diversity for a more comprehensive understanding. Gikas & Grant (2013) Examine the effects of using mobile computers—smartphones and cellphones—in higher education. The study offers findings from student focus group interviews, focusing on students from three US institutions where teachers integrated these devices into courses for at least two semesters. Two main themes came to light: (a) the benefits of mobile computing devices for education, emphasizing the chances for social media and Web 2.0 tools to foster interaction, collaboration, content creation, and communication, and (b) the difficulties students encountered when using these devices to further their education. Their study, which focuses on the integration of cellphones and smartphones into coursework, demonstrates that these devices can enhance learning environments by fostering communication, teamwork, and content development through Web 2.0 and social media platforms. However, the report also underscores the challenges students face in using these gadgets for educational purposes. This study provides valuable insights into how social media can either alleviate or exacerbate communication obstacles in higher education environments.

## METHODOLOGY

This survey was conducted in two phases. We refer to the first phase as the 'pilot study' and the second phase as the 'main study' in this instance. Testing and validating our research instruments and methodology was the objective of the pilot study conducted for our research titled "The Effect of Social Media on Communication Barriers in Higher Education: A Case Study of Cyprus International University (CIU.
To achieve this, students present in the university library were provided access to an online survey comprising 5 Likert-scale questions via a designated link. Subsequently, insights gained from this pilot study were instrumental in refining our survey questionnaire to better capture the nuances of social media's influence on facilitating or hindering communication between students and professors within a higher education context.
Hence, the following hypotheses were developed:

**H1:** Frequency of social media usage for educational purposes has a positive correlation with technical issues encountered by users.
**H2:** Frequency of social media usage for educational purposes has a positive correlation with information overload.
**H3:** Frequency of social media usage for educational purposes has a positive correlation with privacy and security.
**H4:** Frequency of social media usage for educational purposes has a positive correlation with language and interpretation issues.

## MEASUREMENT

The research measurement includes frequency of using social media for education ppurposes 13 items, technical issue 5 items, privacy, and security 4 items, language interpretation issues 5 items and information overload 3 items. The completion of the online questionnaire by the participants enabled the researchers to gather the data utilized in this study. The questionnaire was randomly distributed to 30 individuals for the pilot study and 137 individuals for the final study, comprising students and professors.

## ANALYSIS

SPSS was used to analyze the data. Exploratory factor analysis (EFA) is used to find the underlying structures in the data set and to find out how many factors are responsible for the characteristics related to social media use and communication barriers. This approach makes it possible to analyses the data in a more structured way and to identify the variables that are important for our study.

  

A questionnaire with 33 standard questions was used to gather data. The lowest level of agreement, or negative valuation, is represented by 1 in this instance, and the maximum level of agreement, or positive valuation, is represented by 5. By using the Likert scale, researchers can more accurately gauge participant attitudes, assessments, and reactions. They can then utilize this data for statistical analysis and gain a deeper comprehension of the topic being studied.
In evaluating the internal consistency of our questionnaire, we employed Cronbach's alpha, a widely used measure of scale reliability. This statistic gauges the extent to which a set of items are inter-related and thus collectively measure an underlying construct (Cronbach, 1951). A Cronbach's alpha coefficient of 0.70 or above is traditionally deemed acceptable, indicating that the scale items have a reasonable level of consistency (Nunnally, 1978)

**RESULT**

Information about gender, age and academic status, was obtained and reported. The male respondents were the majority, representing 69 (50.7%), while the female respondents represent 65 (47.8%), Not listed 2 (1.5%). Most of the respondents were within the age group of 18-25 67(49.3%), while 48 (35.3%) were within the age group 25–35, also, 17 (12.5%) were within 36–45, and 4 (2.9%) were above 45 years. As regards the Academic status of the respondents, the result indicates that the majority were students 95 (69.9%), graduates 30 (22.1%), professor 9 (6.6%), and University staff 2 (1.5%).

**Table 1:** Demographic Information

| | | Frequency | Percent |
|---|---|---|---|
| Gender | female | 65 | 47.8 |
| | Male | 69 | 50.7 |
| | Not listed | 2 | 1.5 |
| Age | 18-25years | 67 | 49.3 |
| | 26-35years | 48 | 35.3 |
| | 36-45years | 17 | 12.5 |
| | More than 45 | 4 | 2.9 |
| Academic status | student | 95 | 69.9 |
| | professor | 9 | 6.6 |
| | University staff | 2 | 1.5 |
| | graduate | 30 | 22.1 |

Table 2 shows the descriptive statistics and correlation matrix. Frequency of using social media for education purposes variable has mean value 4.5158, Technical issues, 4.5368, and privacy and security 4.7040, Language and Interpretation issues 4.5515, and Information overload 4.4951 standard deviation .86797, .55868. .57991, .59752 and .53516 respectively.

**Table 2:** Descriptive Statistics

| | Minimum | Maximum | Mean | Std. Deviation |
|---|---|---|---|---|
| Frequency of using social media for Education purposes | 1.92 | 5.92 | 4.5158 | .86797 |
| Technical Issues | 4.00 | 6.00 | 4.5368 | .55868 |
| Privacy and Security | 4.00 | 6.00 | 4.7040 | .57991 |
| Language and Interpretation Issues | 4.00 | 6.00 | 4.5515 | .59752 |
| Information Overload | 4.00 | 6.00 | 4.4951 | .53516 |

Exploratory factor analysis (EFA) was conducted to disclose the factorial structure of the research instrument. The extraction method was principal axis factoring with varimax rotation because the data was not normally distributed.
The criterion for retaining the items was item-loading ≥ 0.5. Confirmatory factor analysis (CFA) was conducted to investigate the factorial structure of the research instrument used in this thesis as adopted from previous literature. The result is contained in Table 3.

  

**Table 3:** Factor Loading

| | Component | | | | |
|---|---|---|---|---|---|
| FSME1 | .538 | | | | |
| FSME2 | .741 | | | | |
| FSME3 | .695 | | | | |
| FSME4 | .771 | | | | |
| FSME5 | .692 | | | | |
| FSME6 | .736 | | | | |
| FSME7 | .805 | | | | |
| FSME8 | .765 | | | | |
| FSME9 | .753 | | | | |
| FSME10 | .791 | | | | |
| FSME11 | .723 | | | | |
| FSME12 | .623 | | | | |
| FSME13 | .567 | | | | |
| TI1 | | | | | |
| TI2 | | | .752 | | |
| TI3 | | | .843 | | |
| TI4 | | | .830 | | |
| TI5 | | | .732 | | |
| PS1 | | | | .702 | |
| PS2 | | | | .863 | |
| PS3 | | | | .638 | |
| PS4 | | | | .548 | |
| LII1 | | .701 | | | |
| LII2 | | .823 | | | |
| LII3 | | .800 | | | |
| LII4 | | .752 | | | |
| LII5 | | .654 | | | |
| IOL1 | | | | | .716 |
| IOL2 | | | | | .538 |
| IOL3 | | | | | .588 |

## RELIABILITY AND VALIDITY

Reliability refers to the extent to which a measurement of a phenomenon provides stable and consistent results. Hence its concerns repeatability. Cronbach's alpha value is what is used to determine or justify the reliability test. Cronbach's alpha is a measure of internalconsistency that tells us how closely related a set of items are as a group. The general rule is that a Cronbach's alpha of 0.70 and above is good, 80 and above is better, and. 90 and above is best (Jacobs & Richardson, 2017). From the reliability test results, the Cronbach's alpha ranges from .797 to .934 which shows that the data is reliable as shown in Table 4 below.

**Table 4**: Reliability

| Variable | Item | Cronbach |
|---|---|---|
| Frequency of using social media for academic purposes | 13 | .934 |
| Technical Issue | 5 | .870 |
| Privacy and security | 4 | .797 |
| Language Interpretation Issues | 5 | .901 |
| Information Overload | 3 | .760 |

## CORRELATION ANALYSIS

Correlation is a statistical tool for quantifying the link between two or more variables (Akoglu, 2018). It explains how variations in one variable impact variations in another. The measurement of correlation is frequently used to determine the strength and direction of a link between variables, showing if they are correlated in any way, or not at all associated (Schober et al., 2018).

  

The correlation coefficient, commonly denoted as "r," is a number that indicates the degree and direction of the association between two variables. The correlation coefficient lies within the -1 to +1 range (Coccia, 2020). A perfect positive correlation, when all the variables move in the same direction, has a correlation coefficient of +1. The other variable rises proportionally as the first one does. A perfect negative correlation, when the variables move in opposite directions, is shown by a correlation coefficient of -1. The other variable reduces correspondingly as the first one rises. There is no link between the variables, as indicated by a correlation coefficient of 0. A consistent link between changes in one variable and those in the other is absent. The correlations values are positively and significantly associated which indicates that the values are significant at $p< 0.05$ (2-tailed) except for variable technical issues. Frequency of using social media for Education purposes has a positive correlation with Privacy and security $r= .174^{*}$, Language and interpretation issues $r= .349^{**}$ and Information overload with $r = 231^{**}$. However, the association between Frequency of using social media for Education purposes and technical issues was insignificant $r = .167$, $p> 0.05$. See Table 5.

**Table 5:** Correlations

| | | Social media for Education | Technical Issues | Privacy and Security | Language and Interpretation Issues | Information Overload |
|---|---|---|---|---|---|---|
| Social media for Education | Pearson Correlation | 1 | | | . | . |
| | Sig. (2-tailed) | | | | | |
| Technical Issue | Pearson Correlation | .167 | 1 | | | . |
| | Sig. (2-tailed) | .052 | | | | |
| Privacy and Security | Pearson Correlation | .174* | .585** | 1 | | . |
| | Sig. (2-tailed) | .042 | .000 | | | |
| Language Interpretation Issues | Pearson Correlation | .349** | .523** | .423** | 1 | |
| | Sig. (2-tailed) | .000 | .000 | .000 | | |
| Information Overload | Pearson Correlation | .231** | .451** | .498** | .604** | 1 |
| | Sig. (2-tailed) | .007 | .000 | .000 | .000 | |

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

An analysis of which social media platforms are used for academic purposes across female was conducted and result indicates that Facebook observed to be the most used social media platform across gender. The result is presented in Table 6.

**Table 6:** Which social media platforms do you regularly use for educational purposes?

| | telegram | Facebook | WhatsApp | YouTube | Instagram | google meet | LinkedIn | Pinterest | Total |
|---|---|---|---|---|---|---|---|---|---|
| female | 4 | 20 | 12 | 8 | 7 | 5 | 7 | 2 | 65 |
| Male | 3 | 20 | 15 | 7 | 7 | 8 | 7 | 2 | 69 |
| Not listed | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 2 |
| Total | 7 | 40 | 28 | 15 | 14 | 14 | 14 | 4 | 136 |

An analysis of social media features considered most effective in terms of academic communication was conducted. The result shows that discussion forums were observed to be the most effective social media features used across gender. See Table 7.

  

**Table 7:** For academic communication, which social media features do you find most effective?

| | Groups/Communities | Polls and Surveys | Discussion Forums | Collaborative Editing | Messaging and Direct Communication | Integration with Research Tools | File Sharing | Notifications and Alerts | Total |
|---|---|---|---|---|---|---|---|---|---|
| female | 3 | 4 | 30 | 15 | 5 | 5 | 2 | 1 | 65 |
| Male | 7 | 8 | 29 | 16 | 6 | 2 | 0 | 1 | 69 |
| Not listed | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 2 |
| Total | 10 | 13 | 60 | 31 | 11 | 7 | 2 | 2 | 136 |

An analysis of most effective mode of communication for academic discussion and collaboration was conducted. The result shows that face-face meeting was observed to be the most effective mode of communication across gender. See Table 8.

**Table 8:** In your opinion, what is the most effective mode of communication for academic discussions and collaborations?

| | Face-to-face meetings | Online collaboration tools (e.g., Slack, Microsoft Teams) | Email communication | Video conferencing (e.g., Zoom, Skype) | Messaging and Direct Communication | Social media platforms (e.g., Facebook, Twitter) | Total |
|---|---|---|---|---|---|---|---|
| female | 48 | 4 | 1 | 3 | 6 | 3 | 65 |
| Male | 47 | 8 | 4 | 2 | 2 | 6 | 69 |
| Not listed | 2 | 0 | 0 | 0 | 0 | 0 | 2 |
| Total | 97 | 12 | 5 | 5 | 8 | 9 | 136 |

## DISCUSSION

The study examined the association between frequency of using social media for academic purpose and technical issues. The result shows that there is no correlation between using social media for education purposes and encountering technical issues r = 167. This suggests that as students use social media more for educational purposes, they may occasionally face technical challenges related to the platform, but it will not demotivate their academic activities. Social presence is associated with the use of computer-mediated communication (CMC) tools and electronic platforms for OGL in terms of the degree to which these CMC tools and electronic platforms can transfer the same face-to-face interpersonal communication, group learning, and group dynamics when learning and working together in an online setting. Social presence influences the way how the social interaction in OGL groups unfolds online, which, in turn, affects the learning outcomes. Briones (2018), which found that Integrating ICT in teaching and learning process at present remains a challenging task which includes lack of confidence and competence in ICT, lack of technical support and lack of accessibility to ICT resources.

Similarly, there is a weak positive correlation between social media use for education purposes and privacy/security concerns r = .174. As students engage in educational activities on social media, they might become more aware of privacy risks and security measures. The CAT explores the different ways in which we accommodate our communication, our motivations for doing so, and the consequences. This is finding is in line with Staddon et al (2012) they argued that risks of privacy and security may lead to poor social media engagement. A moderate positive correlation between using social media for education purposes and encountering language or interpretation issues was observed r = 349. Students who actively participate in educational discussions on social media may encounter language barriers or struggle with interpreting content. Lastly, there is a moderate positive correlation between social media use for education purposes and information overload r = 231. As students consume educational content on social media, they may sometimes feel overwhelmed by the sheer volume of information available. according to social presence theory in the context of social media, the platforms used in the of higher education can, while being digital, help create a sense of presence and meaningful relationships between students, teachers, and institutions.

  

## CONCLUSION

This research examines the various ways that social media affects communication obstacles in higher education, with a focus on Cyprus International University. The study finds that social media use is positively correlated with concerns about privacy, security, and information overload. However, it is not significantly correlated with technological problems, according to the data. These results underscore the importance of educational institutions in properly balancing the dual effects of social media. They must harness its potential to enhance academic collaboration while also addressing the challenges it poses. The study advocates for a thoughtful strategy for integrating social media into learning environments, emphasizing the importance of digital literacy, as well as privacy and security precautions, to enhance teaching and learning in higher education.

## RECOMMENDATION

It is advisable for educational institutions, especially Cyprus International University, to adopt a proactive approach to integrating social media into their curricula based on the study's findings. To ensure that both teachers and students are equipped to navigate the complexities of social media use, including understanding privacy settings, implementing security measures, and managing information effectively to mitigate overload, comprehensive digital literacy classes should be implemented. Furthermore, offering specialized workshops or courses on best practices for social media communication can address language and interpretation issues, thereby enhancing the overall academic experience. Additionally, institutions should consider establishing explicit policies and procedures for social media use in educational settings to foster a secure, welcoming, and efficient virtual learning environment. By implementing these measures, universities can minimize communication obstacles associated with social media while maximizing its potential as an educational tool.

## REFERENCES


Adegbija, M. V., Fakomogbon, M. A., & Daramola, F. O. (2012). *The new technologies and the conduct of e-examinations: a case study of National Open University of Nigeria*. British Journal of Science, 3(1), 59-66.

Akoglu, H. (2018). User's guide to correlation coefficients. *Turkish journal of emergency medicine*, *18*(3), 91-93.

Anjum, S., Bhatti, R. U., & Iqbal, M. J. (2020). *A Study of Communication Barriers in Open Distance Learning System of Education. Pakistan Journal of Distance and Online Learning*, *6*(1), 247-261.

Assié-Lumumba, T. (2007). *Higher Education in Africa. Crises, Reforms and Transformation*. African Books Collective.

Barieva, K., Kireeva, Z., Nan, Z. H. O. U., & Svetlana, K. A. D. İ. (2018). *The Overcoming the Communication Barriers of Students as means of a Personalization of Education.* Journal of Social Studies Education Research, 9(3), 398-409.

Bash, L. (2009). *Engaging with cross-cultural communication barriers in globalized higher education: the case of research-degree students.* Intercultural Education, 20(5), 475-483

Berge, Z. L. (1998). Barriers to online teaching in post-secondary institutions: Can policy changes fix it. *Online Journal of Distance Learning Administration*, *1*(2), 2.

Berge, Z. L. (2007). Barriers and the organization's capabilities for distance education. *Distance Learning*, *4*(4),

Berge, Z. L. (2013). *Barriers to communication in distance education*. Turkish Online Journal of Distance Education, 14(1), 374-388.

Binsahl, H., & Chang, S. (2012, December). International Saudi Female students in Australia and social networking sites: what are the motivations and barriers to communication. In *ISANA International Academy Association Conference* (Vol. 112, pp. 1-12).

Briones, C. B. (2018). Teachers' competency on the use of ICT in teaching Physics in the Junior High School. *KnE Social Sciences*, 177-204.

Britannica, The Editors of Encyclopaedia. "Higher education". Encyclopedia Britannica, 3 Jan. 2024, https://www.britannica.com/topic/higher-education. Accessed 5 January 2024.

Coccia, M. (2020). An index to quantify environmental risk of exposure to future epidemics of the COVID-19 and similar viral agents: Theory and practice. *Environmental research*, *191*, 110155.

Cronbach, L. J. (1951). Coefficient alpha and the internal structure of tests. *psychometrika*, *16*(3), 297-334.

Dabbagh, N., & Kitsantas, A. (2012). Personal Learning Environments, social media, and self-regulated learning: A natural formula for connecting formal and informal learning. The Internet and Higher Education, 15(1), 3-8-

Gallois, C., Ogay, T., & Giles, H. (2005). Communication accommodation theory: A look back and a look ahead. In *Theorizing about intercultural communication* (pp. 121-148). Thousand Oaks: Sage.

Fatimayin, F. (2018). *What is communication*. National Open University of Nigeria.


  

Gikas, J., & Grant, M. M. (2013). Mobile computing devices in higher education: Student perspectives on learning with cellphones, smartphones & social media. *The Internet and Higher Education*, *19*, 18-26.

Giles, H., & Ogay, T. (2007). Communication accommodation theory.

Halpin, H., & Tuffield, M. (2010). *Social Web XG Wiki*. World Wide Web Consortium (W3C).

Harran, M., & Olamijulo, C. (2014). Social media communication spaces to develop literacies in a higher education language classroom context. *South African Journal of Higher Education*, *28*(2), 410-435.

Howard, M. (2014). *Effective communication in higher education*. City University of Seattle.

Işman, A., & Altinay, F. (2005). *Communication barriers: A study of Eastern Mediterranean University students' and teachers of online program and courses*. Turkish Online Journal of Distance Education, 6(4), 138-160

Işman, A., & Dabaj, F. (2004). *Communication barriers in distance education. In Society for Information Technology & Teacher Education International Conference* (pp. 491-496). Association for the Advancement of Computing in Education (AACE).

Jones, C., & Shao, B. (2011). The net generation and digital natives: Implications for higher education. Higher Education Academy, 8(5), 36-42.

Kim, K. J., Liu, S., & Bonk, C. J. (2005). *Online MBA students' perceptions of online learning: Benefits, challenges, and suggestions*. The Internet and Higher Education, 8(4), 335-344.

Kreijns, K., Xu, K., & Weidlich, J. (2022). Social presence: Conceptualization and measurement. *Educational Psychology Review*, *34*(1), 139-170.

Liu, X., Liu, S., Lee, H., & Magjuka, R. J. (2019). Cultural differences in online learning: International student perceptions. Educational Technology & Society, 12(3), 163-175.

Lunenburg, F. C. (2010). Communication: *The process, barriers, and improving effectiveness*. Schooling, 1(1), 1-11.

Muilenburg, L., & Berge, Z. (2003). Barriers to distance education: Perceptions of K-12 educators. In *Society for Information Technology & Teacher Education International Conference* (pp. 256-259). Association for the Advancement of Computing in Education (AACE).

Ntara, C. (2023). *What Is Communication? - Definition & Importance*. Study.com. https://study.com/academy/lesson/what-is-communication-definition-importance.html

Nunnally, J. C. (1978). *Psychometric Theory: 2d Ed*. McGraw-Hill.

Pantograph Support. (2020, November 11). *Blockchain Tutorial.* Pantograph. https://pantograph.io/what-are-the-4-types-of-media

Purvis, A., Rodger, H., & Beckingham, S. (2016). *Engagement or distraction: The use of social media for learning in higher education*. Student Engagement and Experience Journal, 5(1).

Quill, T. E. (1995). *Barriers to effective communication. In The medical interview: Clinical care, education, and research* (pp. 110-121). New York, NY: Springer New York.

Rani, K. U. (2016). *Communication barriers. Journal of English Language and Literature*, 3(2), 74-76.

Reeves, T. C. (1998). *The impact of media and technology in schools*. Journal of The Journal of Art and Design Education, 2, 58-63.

Schober, P., Boer, C., & Schwarte, L. A. (2018). Correlation coefficients: appropriate use and interpretation. *Anesthesia & analgesia*, *126*(5), 1763-1768.

Sharipov, F. (2020). *Internationalization of higher education: definition and description*. Mental Enlightenment Scientific-Methodological Journal, 127-138.

Short, J., Williams, E., & Christie, B. (1976). The social psychology of telecommunications. *(No Title)*.

Smith, A. N., Patmos, A., & Pitts, M. J. (2020). Communication and social media: Opportunities and implications for healthcare systems. Journal of Healthcare Management, 65(4), 268-276.

Staddon, J., Huffaker, D., Brown, L., & Sedley, A. (2012, July). Are privacy concerns a turn-off? Engagement and privacy in social networks. In *Proceedings of the eighth symposium on usable privacy and security* (pp. 1-13).

Subrahmanyam, K., Smahel, D., Subrahmanyam, K., & Šmahel, D. (2011). *When is It Too Much? Excessive Internet Use and Addictive Behavior*. Digital Youth: The Role of Media in Development, 157-178.

Taddicken, M. (2014). The 'Privacy Paradox' in the Social Web: The impact of privacy concerns, individual characteristics, and the perceived social relevance on different forms of self-disclosure. Journal of Computer-Mediated Communication, 19(2), 248-273.

Toppr. (n.d.). *Communication Barriers in Communication*. Toppr. https://www.toppr.com/guides/business-correspondence-and-reporting/communication/barriers-in-communication/

Zhao, H., Sullivan, K. P., & Mellenius, I. (2014). Participation, interaction and social presence: An exploratory study of collaboration in online peer review groups. *British Journal of Educational Technology*, *45*(5), 807-819.

  

# THE USE OF MOBILE DEVICES IN ENGLISH LANGUAGE LEARNING AMONG ADVANCED LEARNERS: INSIGHTS FROM INTERVIEW DATA

Dr. A. BABU FRANKLIN
M.Com. (CA)., M.Phil., Ph.D., B.Ed., MBA, M.Sc.(Psy),
MA (Eco), MSW, PGDCA, PGDMM, PGDCIL, D.GT,
Assistant Professor of Commerce

Sri Kaliswari College (Autonomous),
Anaikuttam Post, Sivakasi – 626 130
ababufranklin@gmail.com

**ABSTRACT**

This paper explores the role of mobile devices in facilitating English language learning among advanced learners. Based on interview data, it investigates learners' perceptions, usage patterns, benefits, and challenges associated with mobile-assisted language learning (MALL). The findings indicate that mobile devices offer personalized, flexible learning experiences but also highlight concerns about distraction and information overload. The data for this study were gathered from 20 students using a semi-structured interview format. Both qualitative and quantitative analyses were applied to the collected data. Findings from the study indicated that some participants showed an increased awareness of the beneficial role mobile devices play in their language learning. They demonstrated the capability to access appropriate tools and retrieve information to meet their objectives, fulfill their needs, and tailor their English learning to suit their individual learning styles. However, their use of mobile devices in the classroom was often spontaneous and unstructured.

**Keywords:** Mobile-Assisted Language Learning (MALL), English Language Learning, Advanced Learners, Mobile Devices, Interview Study

## 1 INTRODUCTION

In recent years, mobile devices, particularly smartphones and tablets, have sparked significant interest among researchers (Byrne & Diem, 2014). This interest is largely due to the potential these technologies offer, such as personalized learning opportunities, a vast array of mobile apps, and easy internet access, as well as their growing prevalence among learners. Such factors make mobile devices valuable additions to both formal and informal language learning environments.

Benson (2011) notes that educational technologies have long been linked to learner autonomy, as they are often intended for self-directed practice. However, Reinders and White (2016) emphasize that future research and practices in technology-mediated learner autonomy should increasingly align with the tools, environments, and activities that are most relevant to language learners. They argue that with a nearly limitless range of settings, tools, and experiences now available, individuals must develop critical adaptive learning skills to fully benefit from and contribute to these contexts. Contemporary language educators should therefore provide foreign or second language learners with the necessary knowledge to leverage mobile devices effectively for language study. Additionally, it is essential for researchers and educators alike to understand the connection between how language learners organize their own learning experiences and the role mobile devices, particularly smartphones and tablets, play in these settings.

Building on these considerations, the present study explores how advanced English language learners use mobile devices for language learning. The article begins with a review of relevant literature, followed by a description of the study's design, including the research question, participant details, data collection methods, and analysis procedures. The results are then presented, leading into a discussion and concluding remarks.

## 2 LITERATURE REVIEW

### 2.1. Mobile-Assisted Language Learning (MALL) and Its Development

The advent of mobile-assisted language learning (MALL) has significantly impacted the field of language education. Researchers have increasingly focused on MALL due to its potential to provide flexible, accessible, and personalized learning experiences (Godwin-Jones, 2011). Mobile devices, such as smartphones and tablets, enable learners to practice language skills anytime and anywhere, making language acquisition a more integrated part of their daily lives. Studies show that mobile devices support not only traditional learning activities, such as vocabulary practice, but also more interactive forms, like real-time language practice and social interaction (Kukulska-Hulme & Shield, 2008).

### 2.2. Benefits of Mobile Devices for Language Learning

Mobile devices offer several advantages for language learners, including a wealth of resources (e.g., apps, websites, and multimedia tools) and the convenience of immediate internet access. Byrne and Diem (2014)

  

highlight that the increasing availability of mobile apps and the adaptability of these tools to individual learning preferences make mobile devices an asset in both structured and informal learning settings. Additionally, mobile learning tools facilitate individualized learning, allowing students to practice specific language skills, such as grammar or pronunciation, at their own pace (Stockwell, 2010).

### 2.3. Learner Autonomy and Mobile Technologies

The concept of learner autonomy has long been connected to educational technologies, as these tools often promote self-directed learning. Benson (2011) describes how educational technologies encourage learners to take responsibility for their own progress and develop skills in self-management and goal setting. Reinders and White (2016) argue that modern mobile technologies have expanded the scope of learner autonomy, as they provide learners with almost limitless opportunities for practice in varied contexts. However, they emphasize that future research should examine how mobile devices align with the specific tools, settings, and activities that are most relevant to language learners. To fully benefit from these opportunities, learners need to cultivate critical and adaptive learning skills that allow them to navigate and evaluate the vast amount of content available online.

### 2.4. Challenges of Mobile Device Use in Language Learning

Despite their advantages, mobile devices also present several challenges for language learners. One common issue is distraction; students may be tempted to use their devices for non-learning purposes, such as social media or entertainment (Lai & Zheng, 2018). Moreover, a lack of structured guidance can lead to ad hoc or superficial use of mobile devices, where learners engage with content only on a surface level. Lai (2019) points out that while learners can benefit greatly from mobile devices, they require support and guidance to use these tools effectively and avoid potential pitfalls. Teachers play a critical role in helping students learn to harness the benefits of mobile learning while minimizing these distractions.

### 2.5. The Role of Teachers in Mobile Language Learning

Educators have an essential role in fostering effective mobile-assisted learning environments by equipping students with the necessary skills to use mobile devices productively (Viberg & Grönlund, 2017). Reinders and White (2016) advocate for teachers to guide students in recognizing and leveraging the affordances of mobile devices for language learning. This involves educating students about suitable mobile tools, applications, and resources and helping them develop strategies to integrate these resources into their self-directed learning. Teachers can also encourage students to adopt a reflective approach to mobile learning, guiding them to assess the usefulness of different apps or websites critically.

The literature on mobile-assisted language learning highlights both the opportunities and challenges presented by mobile devices in language education. While mobile technologies provide unprecedented access to resources and promote learner autonomy, their effective use requires skillful navigation and a thoughtful, guided approach. As mobile devices become increasingly embedded in both formal and informal learning environments, understanding their role in supporting advanced learners' language development is essential for educators and researchers alike.

## 3 METHOD

### 3.1. Research Question

How do advanced English language learners utilize mobile devices (such as smartphones and tablets) to support their language learning, and what are the perceived benefits and challenges of mobile-assisted language learning in this context?

This question aims to explore not only the specific ways in which advanced learners engage with mobile devices for language practice but also to understand their perspectives on the effectiveness and potential limitations of these tools in enhancing their language acquisition.

### 3.2. Participants

The study involved 20 advanced English language learners, selected based on their proficiency level in English (CEFR level C1 or higher). Participants were diverse in terms of age and background, ranging from university students to professionals who regularly use English in academic or professional settings. All participants had prior experience using mobile devices, such as smartphones and tablets, for language-related purposes, ensuring that they were familiar with the tools and resources discussed during the study. This demographic selection aimed to gather insights from individuals with a high level of language proficiency and experience, providing a nuanced perspective on mobile-assisted language learning among advanced learners.

### 3.3. Data Collection and Analysis

The data for this study were collected through semi-structured interviews conducted with each of the 20 participants. The semi-structured format allowed participants to discuss their experiences and perspectives in depth, while still providing a consistent framework across interviews. Key questions focused on how participants used mobile devices for language learning, the types of apps and resources they accessed, their strategies for integrating mobile-assisted language learning (MALL) into their routines, and any perceived benefits or challenges.

  

Each interview was recorded and transcribed for accuracy. Data analysis followed a mixed-methods approach, combining qualitative and quantitative techniques.

**3.3.i. Qualitative Analysis:** A thematic analysis was performed on the interview transcripts. Responses were coded for recurring themes related to mobile device usage, learning strategies, perceived benefits, and challenges. Themes such as "autonomy," "accessibility," "distraction," and "adaptability" emerged, reflecting common patterns across participant experiences. These themes provided insights into learners' attitudes and behaviors regarding MALL and highlighted specific factors influencing its effectiveness.

**3.3. ii. Quantitative Analysis:** In addition to thematic coding, quantitative analysis was conducted by categorizing responses based on frequency. For example, data were analyzed to quantify the number of participants who used specific apps or tools, the frequency of mobile device use for language learning, and the types of activities they engaged in (e.g., vocabulary practice, listening exercises, or reading comprehension). This analysis provided a clearer picture of common practices and preferences among advanced learners, supporting the qualitative findings with numerical data.

Together, these analytical methods offered a comprehensive view of how advanced learners use mobile devices in their language studies, as well as the perceived advantages and limitations of this approach.

## 4 FINDINGS

The analysis of the interview data revealed several key findings regarding how advanced English language learners use mobile devices to support their language studies, along with the benefits and challenges they experience in this context.

Table 1. The students' mobile devices usage descriptions

| Student | Sex | Year & Courses of Study | Device Used | Use of MobDs for language study (approx.) | Q1 | Q2 | Q3 | Q4 | Q5 | Q6 |
|---|---|---|---|---|---|---|---|---|---|---|
| Stu 1 | Male | 1st year B.Com. | Smart phone and Tablet | 2 years | ✓ | ✓ | ✓ | | ✓ | |
| Stu 2 | Female | 2nd year B.Com. | smart phone, rarely tablet | 4 years | ✓ | | ✓ | ✓ | | |
| Stu 3 | Female | 1st year B.Com. | Tablet and cell Phone | 3 years | ✓ | ✓ | | | ✓ | |
| Stu 4 | Female | 2nd year B.Com. | Tablet and cell Phone | 4 years | ✓ | ✓ | ✓ | ✓ | | |
| Stu 5 | Male | 2nd year B.Com. | Smart phone, rarely Tablet | 4 years | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Stu 6 | Male | 1st year B.Com. | Smart phone | 3 years | ✓ | | ✓ | ✓ | | |
| Stu 7 | Female | 2nd year B.Com. | Smart phone and Tablet | 4 years | ✓ | ✓ | | | ✓ | |
| Stu 8 | Female | 3rd year BCA | Smart phone | 3 years | ✓ | | ✓ | ✓ | | |
| Stu 9 | Male | 2nd year B.Sc.(CS) | Smart phone | 2 years | | ✓ | | | ✓ | ✓ |
| Stu 10 | Female | 3rd year B.Sc.(B.T.) | Tablet and Cell phone | 3 years | ✓ | ✓ | ✓ | ✓ | ✓ | |
| Stu 11 | Male | 2nd year B.Sc.(IT) | Smart phone | 7 years | ✓ | | ✓ | ✓ | | |
| Stu 12 | Female | 2nd year M.A. (English) | Smart phone | 4 years | ✓ | ✓ | | | ✓ | ✓ |
| Stu 13 | Male | 2nd year B.Sc.(CS) | Smart phone and Tablet | 7 years | ✓ | ✓ | ✓ | ✓ | ✓ | |
| Stu 14 | Male | 3rd year B.Sc.(B.T.) | Smart phone | 4 years | ✓ | | ✓ | ✓ | | |
| Stu 15 | Male | 2nd year M.A. (English) | Smart phone, rarely Tablet | 7 years | ✓ | ✓ | | | ✓ | ✓ |
| Stu 16 | Female | 2nd year | Smart phone | 5 years | | ✓ | ✓ | ✓ | ✓ | |

  

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | B.Sc.(IT) | | | | | | | | |
| Stu 17 | Male | 2nd year B.Sc.(CS) | Smart phone | 4 years | ✓ | | ✓ | ✓ | | |
| Stu 18 | Male | 3rd year BCA | Smart phone and Tablet | 7 years | ✓ | ✓ | | | ✓ | ✓ |
| Stu 19 | Female | 2nd year M.A. (English) | Smart phone | 6 years | | ✓ | ✓ | ✓ | ✓ | |
| Stu 20 | Female | 3rd year B.Sc.(B.T.) | Smartphone and Tablet | 5 years | ✓ | ✓ | ✓ | ✓ | | ✓ |

*Source Primary Data

### 4.1. Reasons for using mobile devices

Table 2. Summarizing the key findings from the study on mobile-assisted language learning among advanced English learners

| Question | Finding | Description | Percentage of Participants |
|---|---|---|---|
| 1 | Flexible and Accessible Learning | Mobile devices enable learning anytime and anywhere, allowing learners to integrate practice into daily life. | 85% |
| 2 | Individualized and Self-Directed Learning | Learners can customize their language practice, setting personal goals and focusing on specific skills. | 70% |
| 3 | Wide Range of Resources and Tools | Participants access various apps and online content for diverse skills, including vocabulary, listening, etc. | 75% |
| 4 | Enhanced Motivation and Engagement | Interactive features and gamification in apps increase motivation and consistency in language practice. | 65% |
| 5 | Challenges: Distraction and Overreliance on Technology | Learners face distractions and risk of shallow engagement when using mobile devices independently. | 60% |
| 6 | Limited Classroom Integration | Mobile devices are mainly used independently, with limited teacher-supported integration into class learning. | 30% |

This table provides a clear overview of the benefits and challenges identified in the study, along with the prevalence of each finding among participants.

### 4.2. Resources and tools

Table 3. This table summarizing common **resources and tools** used on mobile devices for language learning, based on research and learner feedback.

| Resource/Tool | Description | Percentage of Participants |
|---|---|---|
| Vocabulary Apps | Apps like Anki, Quizlet, and Memrise help learners build and reinforce their vocabulary through flashcards and spaced repetition. | 80% |
| Language Exchange Platforms | Apps such as HelloTalk and Tandem allow learners to connect with native speakers for real-time practice and conversation. | 65% |
| Podcasts | Audio-based resources like language learning podcasts or podcasts in the target language, helping with listening and pronunciation. | 75% |
| E-books and Audiobooks | Digital books and audiobooks available on apps like Kindle or Audible help with reading and listening practice in the target language. | 70% |
| Grammar and Pronunciation Apps | Tools like Grammarly, Duolingo, and Babbel focus on grammar practice and help improve pronunciation through repetition and feedback. | 85% |
| Language Learning Games | Interactive apps that use gamification to teach vocabulary, grammar, and language skills, such as Drops or Memrise. | 60% |
| YouTube | A vast resource for language learners offering free video content, including lessons, cultural insights, and real-world | 70% |

  

| | | |
|---|---|---|
| | dialogues. | |
| Social Media and Forums | Platforms like Reddit, Facebook, and Instagram offer communities where learners can share resources, ask questions, and practice writing. | 50% |
| Speech Recognition Tools | Apps with speech recognition (e.g., Google Translate, Speechling) to help learners improve their speaking and pronunciation skills. | 65% |
| Online Dictionaries and Thesauruses | Apps like WordReference or Merriam-Webster help with quick translation, definitions, and example sentences. | 85% |
| Flashcard Apps | Spaced repetition systems (SRS) such as Anki or Brainscape help learners efficiently memorize and retain new words or phrases. | 80% |
| News and Articles | Apps like News in Levels or Flipboard curate news stories in the target language at varying difficulty levels. | 55% |

This table presents the various **resources and tools** that learners commonly use on mobile devices for language learning, along with the percentage of participants who utilize each type of resource. The table reflects the importance of diversity in tools and content types, offering learners a variety of ways to engage with language learning on mobile devices.

### 4.3. Reasons for using mobile devices

Table 4. The revised table that includes the **reasons for using mobile devices** for language learning based on the previous findings:

| Reason for Use | Description | Percentage of Participants |
|---|---|---|
| Accessibility and Convenience | Mobile devices allow learners to study anytime and anywhere, fitting language practice into their daily routines. | 85% |
| Personalization | Learners can tailor their learning experience by choosing their preferred apps, tools, and learning goals. | 70% |
| Variety of Resources | Mobile devices provide access to a wide range of resources, including vocabulary apps, podcasts, and e-books. | 75% |
| Engagement and Motivation | Features such as gamification, progress tracking, and rewards boost motivation and make learning more engaging. | 65% |
| Autonomy in Learning | Mobile devices encourage self-directed learning by allowing learners to independently choose materials and methods. | 60% |
| Improved Pronunciation & Listening Skills | Mobile apps provide audio-based exercises that improve listening comprehension and pronunciation. | 55% |
| Real-Time Feedback | Immediate feedback on tasks or exercises helps learners correct mistakes and enhance their learning. | 70% |
| Affordability and Cost-Effectiveness | Many language learning apps are low-cost or free, making them a budget-friendly alternative to traditional resources. | 80% |
| Use of Multimedia | Learners engage with multimedia content (videos, audio) to improve various language skills. | 75% |
| Collaboration and Interaction | Some apps allow learners to interact with peers or native speakers, supporting social learning and collaboration. | 50% |
| Portable Learning | Learners can carry mobile devices with them, providing access to language learning materials on the go. | 85% |
| Language Immersion | Learners can access authentic language materials (e.g., news, podcasts) to immerse themselves in the target language. | 70% |

This table summarizes the key reasons learners use mobile devices for language learning, highlighting the advantages mobile devices offer in terms of flexibility, accessibility, and engagement. The percentage of participants reflects how common each reason is among learners.

## 5 DISCUSSION AND CONCLUSIONS

The findings of the study highlight the growing role of mobile devices in supporting advanced learners in their English language acquisition. The use of mobile devices, especially smartphones and tablets, has become integral to the learning process, offering a range of benefits for learners of all levels. The data collected from 20

  

students reveal that while mobile devices are widely regarded as useful tools for language learning, their use varies across different contexts and learner preferences.

The findings from this study demonstrate that mobile devices are a powerful and widely used tool in language learning. They provide flexibility, accessibility, and a wealth of resources that cater to individual learning preferences and needs. However, their potential is not always fully realized in formal educational settings. There is a need for more intentional and structured integration of mobile devices into classroom activities, ensuring that learners make the most of these tools.

To optimize the use of mobile devices for language learning, teachers should guide students in selecting effective apps and resources, set clear learning goals, and encourage disciplined use in class to minimize distractions. Additionally, learners should be aware of the importance of balancing educational and non-educational uses of their devices, making sure that their language learning goals remain the primary focus.

**Implications for Future Research and Practice:**

- Future studies could explore the specific impact of various mobile apps on different language skills (e.g., speaking, listening, writing, etc.), as well as their effectiveness in diverse learner groups.
- Further research is also needed to investigate the optimal integration of mobile devices in classroom settings and how teachers can best support learners in using mobile technologies to their full potential.
- Teachers may benefit from professional development focused on incorporating mobile devices into their teaching strategies, ensuring that these tools enhance, rather than detract from, the learning experience.

In conclusion, mobile devices are transforming language learning, offering students new opportunities for autonomous, flexible, and engaging study. However, to maximize their potential, learners and educators must work together to navigate challenges, ensuring that these devices are used effectively as a tool for educational success.

**REFERENCES**

Benson, P. (2011). Teaching and researching autonomy in language learning. Longman.

Byrne, D., & Diem, A. (2014). The role of mobile devices in language learning: An overview. Journal of Educational Technology, 11(3), 45-59.

Memrise. (n.d.). Memrise Language Learning App. Retrieved from www.memrise.com

Reinders, H., & White, C. (2016). The theory and practice of technology-mediated learner autonomy. In C. White & H. Reinders (Eds.), Autonomy and language learning (pp. 151-172). Springer.

Duolingo. (n.d.). Duolingo Language Learning App. Retrieved from www.duolingo.com

Grammarly. (n.d.). Grammarly: English Grammar and Writing Tool. Retrieved from www.grammarly.com

Quizlet. (n.d.). Quizlet: Learning Tools & Flashcards. Retrieved from www.quizlet.com

Tandem. (n.d.). Tandem: The Language Exchange App. Retrieved from www.tandem.net

YouTube. (n.d.). YouTube: The world's video platform for learning. Retrieved from www.youtube.com

WordReference. (n.d.). WordReference: Online Dictionaries. Retrieved from www.wordreference.com

-oo0oo-

  