

‘A Comparative Analysis of Technophobia and Attitudes Towards E-Learning Among School Teachers in Uttarakhand: The Role of Age and Educational Level’

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Abstract

Purpose: For technology to function effectively in educational institutions, educators must be psychologically prepared for its use. The objective of this study was to investigate the impact of age and educational attainment on technophobia and attitudes towards e-learning among school teachers in Uttarakhand, India.

Methodology: A quantitative research methodology was employed using a sample of 232 educators from various districts in Uttarakhand. The researchers employed SPSS to conduct a one-way ANOVA with post-hoc comparisons (Tukey HSD) to evaluate the four study hypotheses.

Key findings: A statistically significant difference was found ($F(3,228) = 2.747, p = .044$), revealing that teachers over 50 years displayed much higher levels of technophobia ($M = 18.38$) compared to the youngest group (21-30 years, $M = 15.50$). A significant difference was found between education level and technophobia ($F(4,227) = 3.888, p = .004$). Teachers with B.Ed. showed significantly less technophobia ($M = 14.69$) compared to those with Graduate ($M = 17.63$) and Post Graduate degrees ($M = 16.97$). The analysis showed no significant differences in attitudes toward e-learning across different age groups ($F(3,228) = 0.399, p = .754$). This suggests that teachers, regardless of their age, generally have similar positive views on e-learning. No significant variations were observed in educational level and attitude towards e-learning ($F(4,227) = 1.661, p = .160$), indicating that teachers with diverse educational qualifications maintain uniformly positive perspectives on e-learning. The key findings reveal a significant distinction as age and educational attainment significantly influence technophobia (the anxiety component of technology adoption), they do not affect attitudes towards e-learning (the evaluative component). Across all demographic groups, educators generally agree on the benefits of e-learning. The B.Ed. curriculum appears effective in alleviating technology apprehension.

Implications: Workshops and training programs offer practical, skill-enhancement experience to recognize the value of e-learning and adequately mitigate technology-related fear. The study elucidates the acceptance of technology by school teachers in educational institutions and provides valuable guidance to the management, policymakers in Uttarakhand and similar regions.

Keywords: Technophobia, attitude towards e-learning, age, educational level, school teachers, Uttarakhand, one-way ANOVA

I Introduction

The advancement of new technology has profoundly impacted various aspects of society, including the educational system, which has not escaped these transformations. In contemporary educational institutions, learning has predominantly replaced the traditional classroom configuration due to the pervasive integration of technology, which has generated significant economic opportunities for the education sector (Rahman et al., 2018; Venkatesh & Bala, 2008; Venkatesh & Davis, 2000).

1.1 Technophobia in Education

The dread and hostility towards technology, together referred to as “technophobia,” have impeded effective learning and adversely affected the mental health of learners (Yunus et al., 2016). As technology advances, it necessitates that educators and students modify their learning practices. This technological advancement can be daunting for some, as they are hesitant to integrate new technologies into their practices, despite the significant benefits it offers to their education (Gerli et al., 2022; Saarilouoma et al., 2010). Nonetheless, numerous educators are reluctant to adopt these developing technologies due to the risk of seeing incorrect content. This type of fear is referred to as technophobia (Gerli et al., 2022; Schauffel et al., 2021).

1.2 E-Learning Attitude

Numerous educators have been raised in an environment with limited electronic technology, making their transition to working with ICT more challenging than that of their students. Educators necessitate proficiency in ICT utilization to facilitate their students' comprehensive development. Attitude towards E-Learning can be shaped, knowledge and Communication Technology (ICT) can facilitate personalized learning, grant access to knowledge, offer flexibility in terms of time, location, and learning pace, and promote cooperation and ongoing education while maintaining full-time employment (Ally, 2009; UNESCO, 2002). The adoption of technology by teachers is affected by the number and quality of their technological experiences inside teacher education programs (Moolman & Blignaut, 2008; Agyei & Voogt, 2011).

During and after the Covid-19 epidemic, students' confidence increased in online education, hence creating opportunities for technical education (McClain et al., 2021). Consequently, 87% of educators are fully using digital instructional tools in the classroom to mitigate the technophobia associated with the integration of new technology in developing countries (Manyeredzi & Mpofu, 2022).

Objectives of the Study:

1. To assess the impact of age on technophobia among school teachers of Uttarakhand.
2. To evaluate the effect of educational level on technophobia among school teachers of Uttarakhand.
3. To assess the impact of age on attitude towards e-learning among school teachers of Uttarakhand.
4. To evaluate the effect of educational level on attitude towards e-learning among school teachers of Uttarakhand.

Hypotheses:

Based on the objectives, the following null hypotheses were formulated:

1. **H₀₁:** There is no significant impact of age on technophobia among school teachers of Uttarakhand.
2. **H₀₂:** There is no significant impact of educational level on technophobia among school teachers of Uttarakhand.
3. **H₀₃:** There is no significant impact of age on attitude towards e-learning among school teachers of Uttarakhand.
4. **H₀₄:** There is no significant impact of educational level on attitude towards e-learning among school teachers of Uttarakhand.

II Literature Review

The phrase "technophobia" denotes an aversion to technology. Individuals afflicted by this issue may experience challenges in utilizing digital devices such as computers, cell phones, and other technological tools, or they may want to entirely abstain from technology. This syndrome may impact an individual's quality of life and their ability to function in an increasingly technology-dependent society. Since 1980, numerous arguments regarding

technophobia have emerged in scientific literature, predominantly focusing on the integration of new technology (Czaja et al., 2006; Powell, 2013; Soja & Soja, 2015). Technophobia is prevalent in numerous contexts and is escalating as technology becomes increasingly pervasive (Schauffel et al., 2021; Saariluoma et al., 2010). In this study, technophobia is defined as the apprehension towards engaging with computers or computer-related technology, the anxiety associated with the swift progression of technology, and the detrimental self-dialogue experienced when interacting with computers or technology (Gerli et al., 2022; Schauffel et al., 2021; Juuntinen & Saariluoma, 2010).

Anderson and Van Weert (2002) delineate four overarching and progressive methodologies by which educational systems accept and utilize ICT: emerging, applying, infusing, and transforming. The transition from traditional distance education to constructivist pedagogy for e-learning necessitates interaction, collaboration, and the enhancement of faculty perceptions regarding the significance of electronic learning technologies. This is crucial for formulating effective strategies and training methodologies: “Academic development is most likely to succeed when the teacher’s own beliefs about teaching and learning provide the starting point” (Errington, 2001).

In an educational context, this will confer an advantage to male learners over females. Some research indicate that males tend to have less anxiety when using computers compared to females. Several research examining technophobia among undergraduates indicate that gender does not influence computer usage (Wang et al., 2022; Shorey et al., 2021; McIlroy et al., 2001).

III Methods

3.1 Samples:

The sample for the present study consisted of 232 primary and middle school teachers of urban and rural areas of Uttarakhand.

3.2 Procedure:

The private and public schools scattered in various districts of Uttarakhand.

3.3 Research design:

A well-structured questionnaire was circulated for data collection in two steps. First the hardcopies of the questionnaire were distributed among school teachers to fill the data. Second, questionnaire was converted into google form and the link was shared through emails and WhatsApp to respondents for gathering data from school teachers.

3.3.1 Variables under study:

Age and educational level of the school teachers are treated as independent variables, whereas technophobia and attitude towards e-learning are treated as dependent variables.

3.4 Statistical treatment

The data was initially treated by descriptive statistics i.e. mean, standard deviation and alpha. To arrive at an inference the data was further treated by one-way ANOVA in SPSS.

IV Results & Discussion

Sample Characteristics: The sample population of 232 responses was female dominated 56.47% and generally well educated, had obtained postgraduate degrees 53.02% as their education level. Most of the teachers are in private school 81.47%, aged between 31 to 40 years from urban areas 56.90%, teaching in middle school 71.12% as represented in Table 1.

Table1. Sociodemographic profile of respondents in the conducted survey

Characteristics	Choices	No. of Respondents	Percent (%)
Gender	Male	101	43.53
	Female	131	56.47
	Total	232	100
Age	21 - 30 yrs	74	31.90
	31 - 40 yrs	88	37.93
	41 - 50 yrs	46	19.83
	Above 50 yrs	24	10.34
	Total	232	100
Level of Education	Graduate	30	12.93
	Post Graduate	123	53.02
	B. Ed.	64	27.59
	M.Phil./Ph.D.	13	5.60
	Other	2	0.86
	Total	232	100
Type of School	Government School	43	18.53
	Private School	189	81.47
	Total	232	100
Locality	Urban	132	56.90
	Rural	100	43.10
	Total	232	100
Teaching Level	Primary (Grade 1 to 5)	67	28.88
	Middle (Grade 6 to 8)	165	71.12
	Total	232	100

Table 2. Alphas, Mean, Standard Deviation of the Constructs

Construct	Items	Mean	SD
Technophobia	I feel anxious while using technology for classroom activities		
	I am worried about making errors that might disrupt my teaching process when using technology		
	I find most educational technologies too complicated to use effectively in my teaching		

(Fear or Anxiety towards Technology) No. of Items = 5 $(\alpha = .745)$	I avoid situations where I have to learn a new software technology or digital tool	3.94	0.70
	I prefer traditional pen-and-paper methods over digital tools for most tasks		
Attitudes towards E-Learning No. of Items = 5 $(\alpha = .841)$	E-learning is an effective mode of education for school students	4.04	0.89
	E-learning helps in making learning more interesting and interactive		
	I enjoy experimenting with innovative technology-based teaching strategies as it allows for better individual attention		
	E-learning provides flexibility and convenience for both teachers and students		
	I would support the integration of e-learning as a regular part of the school curriculum		

Table 2. demonstrate the Cronbach's alpha (α) value greater than 0.7, Technophobia has ($\alpha = .745$) and Attitudes towards E-Learning has ($\alpha = .841$) which indicate better internal reliability.

1. To assess the impact of age on technophobia among school teachers of Uttarakhand.

Table 3. Descriptives of One-Way ANOVA Test on Age and Technophobia

Descriptives								
TPH_TOT								
Age	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
21 - 30 yrs	74	15.5000	4.15207	.48267	14.5380	16.4620	6.00	24.00
31 - 40 yrs	88	16.4659	4.55603	.48567	15.5006	17.4312	5.00	25.00
41 - 50 yrs	46	16.5435	3.98724	.58789	15.3594	17.7275	9.00	24.00
Above 50 yrs	24	18.3750	4.66078	.95138	16.4069	20.3431	9.00	25.00
Total	232	16.3707	4.38125	.28764	15.8040	16.9374	5.00	25.00

The analysis shows that age does have a statistically significant impact on technophobia scores. However, the relationship is not a simple, clear-cut one where every group is different from every other. The main difference lies between the youngest and the oldest teachers. There is a clear trend displayed in Table 3. as age increases, the average level of technophobia also increases. The "Above 50" group has the highest average technophobia score.

Table 4. Homogeneity of Variances using Levene's Test

Test of Homogeneity of Variances			
TPH_TOT			
Levene Statistic	df1	df2	Sig.
.515	3	228	.672

Test of Homogeneity of Variances, according to Levene's statistics, Table 4. shows Sig. = .672 which is > 0.05 , reveals that this is good. It means the assumption of equal variances is met, and our standard ANOVA result is reliable

Table 5. One-Way ANOVA on Age and Technophobia

ANOVA					
TPH_TOT					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	154.685	3	51.562	2.747	.044
Within Groups	4279.436	228	18.769		
Total	4434.121	231			

Table 5. illustrates the key findings as $F(3, 228) = 2.747$, Sig. = .044

The significance value (p-value) is .044, which is less than 0.05.

Therefore, we reject the null hypothesis

H_{01} : There is no significant impact of age on technophobia among school teachers of Uttarakhand and accept the alternate hypothesis that there is a significant impact of age on technophobia among school teachers. Hence, we conclude that age does have an impact and there is a statistically significant difference in technophobia scores based on the age group of the teachers.

Table 6. Post Hoc Tests (Tukey HSD) on Age and Technophobia

Multiple Comparisons						
Dependent Variable: TPH_TOT						
Tukey HSD						
(I) Age	(J) Age	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
21 - 30 yrs	31 - 40 yrs	-.96591	.68332	.492	-2.7344	.8026
	41 - 50 yrs	-1.04348	.81343	.575	-3.1487	1.0617
	Above 50 yrs	-2.87500*	1.01769	.026	-5.5089	-.2411
31 - 40 yrs	21 - 30 yrs	.96591	.68332	.492	-.8026	2.7344
	41 - 50 yrs	-.07757	.78824	1.000	-2.1176	1.9625
	Above 50 yrs	-1.90909	.99767	.225	-4.4911	.6730

41 - 50 yrs	21 - 30 yrs	1.04348	.81343	.575	-1.0617	3.1487
	31 - 40 yrs	.07757	.78824	1.000	-1.9625	2.1176
	Above 50 yrs	-1.83152	1.09091	.337	-4.6549	.9918
Above 50 yrs	21 - 30 yrs	2.87500*	1.01769	.026	.2411	5.5089
	31 - 40 yrs	1.90909	.99767	.225	-.6730	4.4911
	41 - 50 yrs	1.83152	1.09091	.337	-.9918	4.6549

(*) The mean difference is significant at the 0.05 level.

The Post Hoc test (Tukey HSD) was conducted to compare each age group against every other age group to pinpoint the specific differences. The Table 6. emphasised at the "Mean Difference (I-J)" column and the "Sig." column. The only comparison that is statistically significant (Sig. < .05) is between the "21 - 30 yrs" group and the "Above 50 yrs" group.

The Mean Difference is -2.875, with a Sig. of .026. The asterisk (*) next to the number in the table confirms this. Hence, it was interpreted that the "Above 50 yrs" group has a technophobia score that is, on average, 2.875 points higher than the "21-30 yrs" group. This difference is statistically significant. It is important that no other pair of groups (e.g., 31-40 vs. 41-50, or 21-30 vs. 31-40) are significantly different from each other as their p-values are all > 0.05.

Table 7. Homogeneous Subsets (Tukey HSD^{a,b}) of Age

TPH_TOT			
Tukey HSD ^{a,b}			
Age	N	Subset for alpha = 0.05	
		1	2
21 - 30 yrs	74	15.5000	
31 - 40 yrs	88	16.4659	16.4659
41 - 50 yrs	46	16.5435	16.5435
Above 50 yrs	24		18.3750
Sig.		.661	.157
Means for groups in homogeneous subsets are displayed in Table 7.			
a. Uses Harmonic Mean Sample Size = 45.309.			
b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.			

This table 7. visually groups the age categories that are statistically similar to each other.

It was interpreted that Subset 1 (Column 1) contains the three youngest groups (21-30, 31-40, 41-50). Their means are not significantly different from each other. The Sig. value of .661 (>0.05) confirms they are a homogeneous set.

Subset 2 (Column 2) contains the two oldest groups (31-40, 41-50, and Above 50). It was noticed that the 31-40 and 41-50 groups appear in both subsets. This means they are not significantly different from the groups in Subset 1 or the group in Subset 2. The "Above 50" group, however, is only in Subset 2 and is significantly different from the "21-30" group which is only in Subset 1.

2. To evaluate the effect of educational level on technophobia among school teachers of Uttarakhand.

Table 8. Descriptives of One-Way ANOVA Test on Educational Level and Technophobia

Descriptives								
TPH_TOT								
Educational Level	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Graduate	30	17.6333	4.58245	.83664	15.9222	19.3444	6.00	24.00
Post Graduate	123	16.9675	4.37567	.39454	16.1864	17.7485	6.00	25.00
B. Ed.	64	14.6875	3.88679	.48585	13.7166	15.6584	5.00	25.00
M.Phil./Ph. D.	13	16.4615	4.42748	1.22796	13.7860	19.1370	10.00	23.00
Other	2	14.0000	4.24264	3.00000	-24.1186	52.1186	11.00	17.00
Total	232	16.3707	4.38125	.28764	15.8040	16.9374	5.00	25.00

Table 8 represents that there is a clear pattern where B.Ed. teachers report the lowest levels of technophobia among the main qualification categories. Graduate teachers report the highest levels. The "Other" group has only 2 respondents (very small sample) with a very wide confidence interval (-24.12 to 52.12). This indicates high uncertainty, and caution about drawing conclusions from this group. It is a limitation which is excluded.

Table 9. Test of Homogeneity of Variances on Educational Level and Technophobia

Test of Homogeneity of Variances			
TPH_TOT			
Levene Statistic	df1	df2	Sig.
.591	4	227	.670

Table 9. shows Levene Statistic = .591, Sig. = .670 which is > 0.05 . The assumption of homogeneity of variances is met. This means the spread of technophobia scores is roughly equal across all educational groups, shows the standard ANOVA result is reliable.

Table 10. One-way ANOVA on Educational Level and Technophobia					
TPH_TOT					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	284.303	4	71.076	3.888	.004
Within Groups	4149.817	227	18.281		
Total	4434.121	231			

The result in Table 10. $F(4, 227) = 3.888$, Sig. = .004 mean this is a highly significant finding. Where the significance value (p-value) is .004, which is much less than 0.05.

Hence, we confidently reject the null hypothesis (H_{02})

H_{02} : There is no significant impact of educational level on technophobia among school teachers of Uttarakhand.

We accept the alternate hypothesis that there is a significant impact of educational level on technophobia among school teachers of Uttarakhand. Therefore, we draw a conclusion that Educational qualification does have an impact on technophobia. There is a statistically significant difference in technophobia scores based on the educational level of teachers.

Table 11. Post Hoc Tests (Tukey HSD) on Educational Level and Technophobia

Multiple Comparisons						
Dependent Variable: TPH_TOT						
Tukey HSD						
(I) Edu	(J) Edu	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Graduate	Post Graduate	.66585	.87063	.940	-1.7282	3.0599
	B. Ed.	2.94583*	.94605	.018	.3444	5.5473
	M.Phil./Ph.D.	1.17179	1.41972	.923	-2.7322	5.0758
	Other	3.63333	3.12249	.772	-4.9530	12.2196
Post Graduate	Graduate	-.66585	.87063	.940	-3.0599	1.7282
	B. Ed.	2.27998*	.65899	.006	.4679	4.0921
	M.Phil./Ph.D.	.50594	1.24694	.994	-2.9229	3.9348
	Other	2.96748	3.04782	.867	-5.4135	11.3485
B. Ed.	Graduate	-2.94583*	.94605	.018	-5.5473	-.3444
	Post Graduate	-2.27998*	.65899	.006	-4.0921	-.4679
	M.Phil./Ph.D.	-1.77404	1.30072	.651	-5.3508	1.8027
	Other	.68750	3.07021	.999	-7.7551	9.1301

M.Phil./Ph.D.	Graduate	-1.17179	1.41972	.923	-5.0758	2.7322
	Post Graduate	-.50594	1.24694	.994	-3.9348	2.9229
	B. Ed.	1.77404	1.30072	.651	-1.8027	5.3508
	Other	2.46154	3.24758	.942	-6.4688	11.3918
Other	Graduate	-3.63333	3.12249	.772	-12.2196	4.9530
	Post Graduate	-2.96748	3.04782	.867	-11.3485	5.4135
	B. Ed.	-.68750	3.07021	.999	-9.1301	7.7551
	M.Phil./Ph.D.	-2.46154	3.24758	.942	-11.3918	6.4688
(*) The mean difference is significant at the 0.05 level.						

The Post Hoc test (Tukey HSD) was conducted to compare and reveal exactly which educational groups differ from each other. As reflected in Table 11., B.Ed. teachers are the distinct group. They have significantly lower technophobia than both Graduate and Post Graduate teachers. Graduate and Post Graduate teachers are not significantly different from each other (Sig. = .940). M.Phil./Ph.D. teachers are not significantly different from any group (though this may be due to the small sample size of 13). The "Other" category, despite having the lowest mean, shows no significant differences due to the extremely small sample size (n=2).

Table 12. Homogeneous Subsets (Tukey HSD^{a,b}) on Educational groups

TPH_TOT		
Tukey HSD ^{a,b}		
Edu	N	Subset for alpha = 0.05
		1
Other	2	14.0000
B. Ed.	64	14.6875
M.Phil./Ph.D.	13	16.4615
Post Graduate	123	16.9675
Graduate	30	17.6333
Sig.		.444
Means for groups in homogeneous subsets are displayed.		
a. Uses Harmonic Mean Sample Size = 7.886.		
b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.		

The Table 12. groups educational levels that are statistically similar. Only ONE subset is formed (all groups in the same column with Sig. = .444). The homogeneous subsets table uses a more conservative approach, The B.Ed.

group (14.69) is at the lower end, and Graduate (17.63) at the higher end. However, because of the overlapping groups (M.Phil./Ph.D. and Post Graduate falling in between), the test places them all in one subset. This simply shows that the differences are not strong enough to create completely separate, non-overlapping clusters when all groups are considered together.

3. To assess the impact of age on attitude towards e-learning among school teachers of Uttarakhand.

Table 13. Descriptives of One-way ANOVA Test on Age and Attitude Towards E-Learning

Descriptives								
AEL_TOT								
Age	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
21 - 30 yrs	74	20.5135	3.15900	.36723	19.7816	21.2454	9.00	25.00
31 - 40 yrs	88	19.9091	3.71588	.39611	19.1218	20.6964	5.00	25.00
41 - 50 yrs	46	20.2391	3.27404	.48273	19.2669	21.2114	5.00	25.00
Above 50 yrs	24	20.2083	4.21157	.85968	18.4299	21.9867	7.00	25.00
Total	232	20.1983	3.50317	.22999	19.7451	20.6514	5.00	25.00

Table13. demonstrate the means - they are remarkably similar across all age groups: Youngest group (21-30): 20.51 and Oldest group (Above 50): 20.21

Examination of the mean scores revealed remarkable similarity across all age groups. The 21-30 years group showed the highest mean attitude score ($M = 20.51$, $SD = 3.16$), while the 31-40 years group showed the lowest ($M = 19.91$, $SD = 3.72$). However, these differences were minimal and not statistically significant.

Table 14. Test of Homogeneity of Variances on Age and Attitude Towards E-Learning

Test of Homogeneity of Variances			
AEL_TOT			
Levene Statistic	df1	df2	Sig.
.377	3	228	.770

Table 14. displayed the assumption of homogeneity of variances was tested using Levene's test and was satisfied, $F(3, 228) = 0.377$, $*p* = .770$, indicating that the variability in e-learning attitude scores was similar across all age groups.

Table 15. One Way ANOVA test on Age and Attitude Towards E-Learning

ANOVA					
AEL_TOT					
	Sum of Squares	df	Mean Square	F	Sig.

Between Groups	14.792	3	4.931	.399	.754
Within Groups	2820.087	228	12.369		
Total	2834.879	231			

The ANOVA test in Table 15. results revealed no statistically significant difference in attitudes towards e-learning across the four age groups, $F(3, 228) = 0.399$, $*p* = .754$. This indicates that age does not have a significant impact on teachers' attitudes towards e-learning.

Table 16. Welch ANOVA on Age and Attitude Towards E-Learning

Robust Tests of Equality of Means				
AEL_TOT				
	Statistic ^a	df1	df2	Sig.
Welch	.411	3	81.227	.746
a. Asymptotically F distributed.				

The robustness of this finding was confirmed by the Welch test, which also yielded a non-significant result, $F(3, 81.23) = 0.411$, $*p* = .746$.

H_{03} : There is no significant impact of age on attitude towards e-learning among school teachers of Uttarakhand.

The null hypothesis (H_{03}) is ACCEPTED (FAILED TO REJECT) ($F(3, 228) = 0.399$, $*p* = .754$). Hence, we conclude that Age does not have a statistically significant impact on attitudes towards e-learning among school teachers in Uttarakhand.

4. To evaluate the effect of educational level on attitude towards e-learning among school teachers of Uttarakhand.

Table 17. Descriptive of One-Way ANOVA Test on Educational Level and Attitude Towards E-Learning

Descriptives								
AEL_TOT								
Educational Level	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Graduate	30	19.4333	3.74795	.68428	18.0338	20.8328	9.00	25.00
Post Graduate	123	20.6667	3.06130	.27603	20.1202	21.2131	5.00	25.00
B. Ed.	64	20.0000	3.85450	.48181	19.0372	20.9628	7.00	25.00
M.Phil./Ph.D.	13	18.6154	4.68221	1.29861	15.7860	21.4448	5.00	23.00
Other	2	19.5000	2.12132	1.50000	.4407	38.5593	18.00	21.00
Total	232	20.1983	3.50317	.22999	19.7451	20.6514	5.00	25.00

Table 18. Test of Homogeneity of Variances on Educational Level and Attitude Towards E-Learning

Test of Homogeneity of Variances			
AEL_TOT			
Levene Statistic	df1	df2	Sig.
.673	4	227	.611

Test of Homogeneity of Variances in Table 18. shows the result of Levene Statistic = .673, Sig. = .611 which is > 0.05 . The assumption of homogeneity of variances is met. The spread of attitude scores is roughly equal across all educational groups, which supports the validity of ANOVA results.

Table 19. One Way ANOVA Test on Educational Level and Attitude Towards E-Learning

ANOVA					
AEL_TOT					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	80.602	4	20.151	1.661	.160
Within Groups	2754.277	227	12.133		
Total	2834.879	231			

The significance value (p-value) is .160, which is greater than 0.05 as displayed in Table 19.

Which means we FAIL to reject the null hypothesis (H_0).

H_0 : There is no significant impact of educational level on attitude towards e-learning among school teachers of Uttarakhand.

Hence, the null hypothesis (H_0) is ACCEPTED (FAILED TO REJECT) ($F(4, 227) = 1.661$, $*p* = .160$). Educational level does not have a statistically significant impact on attitudes towards e-learning among school teachers in Uttarakhand.

Therefore, it is concluded that there is NO statistically significant difference in attitudes towards e-learning based on educational level. Educational qualification does NOT have a significant impact on e-learning attitudes.

The F-value of 1.661 indicates that the variance between educational groups is only slightly larger than the variance within groups, and not enough to reach statistical significance.

Table 20. Welch ANOVA on Educational qualification and Attitude Towards E-Learning

Robust Tests of Equality of Means				
AEL_TOT				
	Statistic ^a	df1	df2	Sig.
Welch	1.127	4	7.444	.413
a. Asymptotically F distributed.				

Table 20. illustrates the result of Welch Statistic = 1.127, Sig. = .413 as shown in table – describes, the Welch test, which is more reliable when group sizes are unequal, confirms the ANOVA result with $p = .413$ (> 0.05). This

consistency strengthens the finding that among school teachers in Uttarakhand, educational qualification is not a determining factor in shaping attitudes towards e-learning. Teachers with Graduate, Post Graduate, B.Ed., and higher research degrees all report similarly positive attitudes.

V Conclusion

The present study investigated the impact of age and educational level on two related but distinct constructs: technophobia and attitudes towards e-learning among school teachers in Uttarakhand. The findings that educational attainment does not substantially influence attitudes towards e-learning, when evaluated in conjunction with the other objectives, provides many critical insights:

The Attitude-Anxiety Distinction: Educators from diverse educational backgrounds possess comparably favourable perceptions of e-learning as a concept. Nonetheless, as Objective 1 & 2 indicated, their degrees of technophobia (anxiety/fear) vary considerably according to age and education. This indicates that although educators may cognitively acknowledge the significance of e-learning, their emotional reactions to technology differ according to their training history. The conclusion in Objective 3 that age does not substantially influence views towards e-learning is both intriguing and reassuring. Contrary to prevalent misconceptions indicating that older educators may possess unfavourable opinions regarding technology-enhanced learning, the current study revealed that instructors of all age demographics in Uttarakhand exhibit comparably positive sentiments

The Distinct Function of B.Ed. Training: Objective 2 indicated that B.Ed. educators exhibit markedly reduced technophobia. Nevertheless, Objective 4 indicates that their attitudes are not markedly distinct from those of other groups. Non-B.Ed. teachers, both Graduate and Postgraduate, exhibit equally favourable opinions towards e-learning. Their difficulty is not negative views, but elevated anxiety (technophobia). Professional development may concentrate on alleviating tension rather than altering attitudes.

Practical Implications: Given that sentiments towards e-learning are consistently favourable among all teacher subgroups, policymakers and school administrators should use this foundation. Educators already recognize the value of e-learning. The markedly reduced technophobia among B.Ed. instructors indicates that their professional training adequately mitigates technology-related fear. This may act as a prototype for professional development initiatives aimed at non-B.Ed. educators.

Future Scope: Workshops and training programs to be arranged that must recognize instructors' current positive dispositions while offering practical, skill-enhancing experiences that bolster confidence and alleviate fear.

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